The Brooklyn Study: Reshaping the Future of Healthcare

Restructuring and investing in healthcare delivery in the communities of central and northeastern Brooklyn
To learn more about Northwell Ventures, visit Northwell.edu/ventures or contact:

Tom Thornton
Senior Vice President
Northwell Ventures
Tthornton1@Northwell.edu
Dear Commissioner Zucker:

We are honored that the Department of Health has retained Northwell Health and its business advisory services division, Northwell Ventures, to make recommendations on how to restructure healthcare and bring independent, stand-alone hospitals together to transform care in central and northeastern Brooklyn. It has been a welcome opportunity for us to apply the expertise and capabilities acquired in creating New York’s largest and most innovative clinically integrated health system, serving almost four million persons annually.

It is a daunting task for any community hospital to transform its clinical model of care, operations and facilities at a time of rapid marketplace change. It is even more daunting when combining multiple local providers, each with a long and justifiably proud history of independence. It can also be viewed, however, as an extraordinary opportunity to think differently about a complex set of operational and fiscal challenges.

Northwell has proposed a series of recommendations to bring the hospitals together and transform and enhance the quality of patient care, attain operating efficiencies and build a new patient-centric ambulatory model of care focused on improving the health of the residents of the communities of central and northeastern Brooklyn. New York State has been providing a significant amount of operating support, and the State’s continued support as well as up to $700 million in capital provides the hospitals with a unique opportunity to rethink, redesign, reinvigorate and rebuild the healthcare delivery system.

We know how important it is to begin the work right away. These hospitals, however, have spent the recent past simply trying to survive. There are few substantive relationships between them; in fact, few of their board members even know each other. The magnitude of proposed changes requires a period of consensus building and the establishment of a new, aligned governance and management structure over the hospitals.

Northwell is committed to working with the Department of Health, the hospitals, their workforce and the communities they serve to consider the contents of this report and the recommendations. We believe this to be an historic turning point on the path toward much needed transformation of the healthcare delivery system in central and northeastern Brooklyn. We are pleased to share our experience and expertise in proposing this roadmap.

Sincerely,

Michael J. Dowling

President & CEO

2000 Marcus Avenue
New Hyde Park, NY 11042
Tel: (516) 321-6666
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Preface

“What we are now facing is a confluence of factors that force our hospitals, in Brooklyn and across the state, to confront economic reality. Federal and state resources continue to shrink, and new payment methodologies are demanding equality and efficiency. Further, due to advances in medicine, many healthcare services that were once the exclusive domain of hospitals can now be delivered as effectively and often more efficiently in an outpatient setting or at home. The roles and responsibilities of hospitals continue to change as modern medicine evolves through the discovery of new techniques, procedures and medications and the implementation of technology, including electronic health records.

Therefore, the Workgroup would like to stress that, although much of our work has focused on the Brooklyn hospitals, hospitals are not the healthcare system. They are just a part of it, albeit an integral part. Medical care in the 21st century will not be centered within the bricks and mortar of a massive hospital. Instead, care should be centered on the patient, and will rely heavily on comprehensive primary care and other ambulatory services. Changes in medical practice, combined with both federal and state redesign of payment models and care models, are moving us away from episodic care focused on disconnected, big box solutions to comprehensive care in a more integrated and distributed environment.”

Executive Summary

This report is driven by a strategic vision for the future of healthcare in Brooklyn. This vision focuses on a sustained commitment to improved health outcomes in quality, safety and service to community residents; embraces health prevention to creatively address the social determinants of health through innovative partnerships with government and community-based organizations; includes the latest advances in medicine; and provides care within a system that is more efficient and requires a significant expansion in access to primary and ambulatory care services to ensure the longer-term viability of these improved medical outcomes for the community.

It is a daunting task for any community hospital to transform its decades-old clinical model of care, operations and facilities at a time of rapid marketplace change. It is even more daunting when the objective is to align the governance, management, clinical leadership and cultures of multiple financially struggling, independent hospitals in a new regional partnership. Through a multi-year effort, with objective analysis, informed planning and continued funding, however, this transformation can be achieved.

Recognizing the importance of maintaining healthcare access for the most vulnerable communities of Brooklyn and concerned about the long-term sustainability of the independent hospitals serving local residents, the State of New York is prepared to make significant capital and operating investments, provided that its support is directly linked to a long-term solution that would transform care in the region, align both strategic investments and operations in a more efficient, effective manner and improve the overall quality of care for the communities served.

In 2015, the New York State Legislature authorized the appropriation of $700 million as part of the Kings County Health Care Facility Transformation Program (Transformation Program). These capital funds were specifically designated to support projects that will transform the organization and delivery of health services as part of a merger, consolidation, acquisition or other significant corporate restructuring intended to create a more financially sustainable system of care.

The statute requires the funds to be distributed to eligible providers serving communities in Brooklyn whose residents are experiencing significant levels of healthcare disparities compared to other communities within Kings County. These disparities are evidenced by a number of specific factors, including dependency on Medicaid, health status indicators and socioeconomic determinants of health. Providers applying for funds must also demonstrate sustained operating losses as well as other specific financial indicators for the past three years. Additionally, the application must detail the transformation actions that will be taken by the applicant.

The communities and hospital providers of central and northeastern Brooklyn meet the requirements of the Transformation Program. These communities are currently served by the following hospitals: Brookdale University Hospital and Medical Center (Brookdale), Kingsbrook Jewish Medical Center (Kingsbrook), Interfaith Medical Center (Interfaith), Wyckoff Heights Medical Center (Wyckoff) and University Hospital of Brooklyn (University Hospital or UHB),
collectively referred to as the study hospitals. (See Figure ES-1, Service Area for Central and Northeastern Brooklyn.)

These hospitals function independently of one another. In the current fiscal year, the gap between patient revenue and operating expenses will be approximately $500 million, which is made up through a combination of State and federal support.

The New York State Department of Health (DOH) engaged Northwell Health and its business consulting division, Northwell Ventures, to develop recommendations on how to realize increased value from the capital investment provided through the transformation of the healthcare delivery system for the communities of central and northeastern Brooklyn, as well as funding provided by the State for continued operating support of the hospitals. A major objective of this project was to develop a more robust, sustainable organizational framework to help the hospital providers better address current and future operating challenges and focus on improving the health of the communities they collectively serve. The study was conducted with the participation of hospital leadership and incorporated the input of healthcare professionals, the workforce and its designated representatives and community stakeholders.

Northwell is one of the few health systems in the nation with a proven history of creating multiple, successful partnerships with community hospitals that have improved clinical quality outcomes, enhanced access to an expanded array of clinical programs and services and improved operating performance through economies accompanying network scale. Additionally, it has transformed its facilities and operations in a respectful and productive partnership with its workforce, their union representatives and the communities they serve.
Service Area Challenges

The challenges confronting the provider community of central and northeastern Brooklyn have been well documented. Previous studies have noted that the financial condition of the most troubled institutions is to a large extent a product of an inefficient expense structure; revenue challenges associated with declining inpatient admissions and a patient mix that approaches 90 percent public payers and charity care; significant liabilities; and an aging or even obsolete physical plant that undermines attempts to provide safe, quality care.

Simply stated, these hospitals have undergone a decade of financial and organizational trauma. Some of the responsibility for the circumstances in which they find themselves must be attributed to poor decision making by prior management. Other New York hospitals in similar circumstances addressed their challenges through successful partnerships or mergers. The study hospitals, however, either chose to remain independent, tried and failed to enter into partnerships or mergers or entered into poorly conceived and ultimately destructive arrangements. Fortunately, at the time of this study, the hospitals have all taken significant steps forward in improving the quality of their leadership teams.

Government insurance programs such as Medicare and Medicaid reimburse these hospitals for services provided at rates that are below the actual costs they incur for delivering services. The hospitals in this study also have considerable inpatient or outpatient volume with Medicare Advantage and Medicaid Managed Care plans, which both apply significant denial rates, resulting in effective payment rates below those of traditional Medicare and Medicaid. Unlike many other hospitals, they lack the ability to offset these below-cost payers and earn a positive operating margin from commercial payers, because the overwhelming majority of commercially insured patients living in the service area choose to receive care elsewhere in Brooklyn or travel to Manhattan. The study hospitals are in a very weak position to negotiate with the insurers of the commercial payers they do treat.

Hospitals of central and northeastern Brooklyn also have to confront a new economic reality in which federal and State resources are constrained and new payment methodologies require major transformation of the clinical and business model of care. Due to advances in medicine, many healthcare services that were once the exclusive domain of hospitals are now delivered as effectively and often more efficiently in an ambulatory or home setting. Access to emergency and acute hospital services is still important; however, future facility investments must strike a balance between maintaining a safe, effective inpatient environment and building ambulatory care capacity beyond the hospital campus. Organizations such as the study hospitals, which have not developed robust and geographically dispersed ambulatory care networks, are at a disadvantage, because the availability of such networks permits hospitals to offset declining inpatient revenues with growing ambulatory revenues, which are foundational to success under value-based purchasing.

Simply stated, these hospitals have undergone a decade of financial and organizational trauma.

Not surprisingly, the five study hospitals report staggering operating deficits with no independent access to capital to invest in program and facility transformation. In State Fiscal Year 2017, Brookdale, Interfaith, Kingsbrook and Wyckoff will require over $300 million in direct State operating assistance to remain open. (See Figure ES-2, Estimated Hospital Support, SFY 2017.) These State subsidy estimates do not include the cost to support University Hospital, which continues to face significant financial challenges. As described later in this report, SUNY Downstate, of which University Hospital is a part, is embarking on its own long-term financial and strategic planning process. This study develops a financial and new operating plan for the four voluntary hospitals in central and northeastern Brooklyn but we have not projected losses for University Hospital. Absent significant
restructuring efforts targeted at reducing fixed and variable operating costs and increasing revenue, the need for State support to fund the operating deficits for the four voluntary hospitals will continue to grow to an estimated $405 million by State Fiscal Year (SFY) 2021. The cumulative cost of these baseline gaps through SFY 2021 is projected to be nearly $1.8 billion.

There is no quick fix; the transformation will take at least five to seven years to accomplish. This study recommends the creation of a new governance structure, appointment of management and clinical leadership, restructuring of clinical services among the hospital campuses, development of a significantly enlarged, geographically dispersed ambulatory care network, major capital investments in inpatient facilities and the creation of a shared services infrastructure to attain efficiencies and support transformation activities. The changes will impact each and every function and activity.

The hospitals all enjoy the passionate support of their communities and share a commitment to improving the health of the residents. The hospitals have few shared interactions, however; in fact, their trustees have never met one another. Once this study is issued, it will take time to form a consensus around a strategic vision for the new health system.

At the beginning, in order to move swiftly later on, it will be important to proceed slowly to align the new organization and stakeholder groups around a new strategic direction. There are no shortcuts in this phase of the development of a new health system. It will take several years to implement the proposed transformational changes if the new system is to fully realize the benefits of doing so.

The health system will require continued operating support and additional capital investment beyond the $700 million provided through the Transformation Program. With a government-dependent payer mix and the other challenges described above, there should be no expectation that the study hospitals will break even in the foreseeable future. However, there should be expectation of realizing greater value for the very significant operating support and capital investments being provided by the State, particularly with respect to increased ambulatory access, quality improvements, operating efficiencies, responsiveness to addressing identified community health needs and participation in new reimbursement models such as value-based purchasing.

### Managing Expectations

The market and financial forces confronting these hospitals make it virtually impossible for them to succeed as stand-alone hospitals. This is not simply a management issue; no management team could be expected to achieve break even from operations given today’s market realities. Even with strong health system partners, these hospitals could not survive without sustained operating support and additional investments to transform their clinical and operating model of care. Therefore, as a preface to the recommendations, it is important to establish realistic expectations for the transformation of the healthcare delivery system in central and northeastern Brooklyn:

The time has come to stop conducting further studies or analyses and implement solutions. There have been many studies, analyses, reports and discussions documenting the challenges confronting the study hospitals and recommendations as to what must be done. All of the previous studies have generally been aligned in defining the problems and proposed recommendations. In the interim, the losses mount and the solutions become harder to fund and implement. The time has come to act and begin the process to implement a course of action.

### Figure ES-2

**Estimated Hospital Support, SFY 2017**

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<tr>
<th>Hospital</th>
<th>State FY17 Estimated Support</th>
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<tr>
<td>Brookdale</td>
<td>$140M</td>
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<tr>
<td>Interfaith</td>
<td>$50M</td>
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<tr>
<td>Kingsbrook</td>
<td>$50M</td>
</tr>
<tr>
<td>Wyckoff</td>
<td>$70M</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>$310M</strong></td>
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Source: New York State Department of Health
While the State will provide more than $700 million in new capital, even this amount is not sufficient to fully address facility infrastructure deficiencies, rebuild the campuses to accommodate the clinical restructuring of services, develop a significantly expanded ambulatory care network and deploy an enterprise-wide health information technology platform. There will be a need for substantially more capital over the next decade to fully address all of the initiatives described in the report. To complete the implementation of the Transformation Plan, the State and leadership of the new health system will have to develop a long-term plan to provide access to additional capital.

The hospitals and support services must be consolidated, clinical services regionalized, facilities rebuilt and a large, transformative ambulatory care network developed throughout the service area. There must be substantive and transformational changes to the governance, management and organization of clinical services among the study hospitals. The hospital-centric care model must be consolidated and augmented by a significant expansion of primary and ambulatory care services. Redundancies and subscale, inefficient programs must be reorganized to create greater efficiencies and improve the quality of care. Investments in ambulatory care should also permit closer collaborations with the Federally Qualified Health Centers (FQHCs), community-based organizations and other partners in the Delivery System Reform Incentive Payment Program (DSRIP)–funded Performing Provider System (PPS), Collaborative Care of Brooklyn (CCB).

The Transformation Plan will maintain current employment levels and require the commitment of union representatives to support necessary changes in the health system’s clinical and operating structure. The building of a new ambulatory care network will create more than 800 new jobs that offset any workforce reductions, through the restructuring of the hospitals’ clinical services and programs and the development of a shared services infrastructure.

The recommendations propose that no current employee covered by labor agreements will experience a reduction in compensation or benefits.

Achieving these objectives will require significant changes and the support of labor representatives to retrain the workforce to support redeployment in the ambulatory care network, and their recognition of the impact of market forces and changes in reimbursement on the operations of the health system. The continued support and commitment of the unions are critical to the success of this plan.

It is not advisable at this time to include University Hospital in a new organizational structure with the other study hospitals. Although the initial scope of this study includes University Hospital, the complex governance and operating structure of Downstate Medical Center, the only academic health center in Brooklyn, part of the State University of New York (SUNY) system, make it difficult, if not impossible, to directly integrate its operations into a non-government-sponsored governance model such as the one proposed for the other study hospitals. SUNY is undertaking a number of initiatives to improve and enhance its operational efficiency and effectiveness. However, SUNY Downstate will need to receive significant State support to accomplish its academic mission.

It is possible, however, for SUNY Downstate Medical Center to collaborate with both its neighboring academic partner, Kings County Hospital Center (KCHC), and the proposed new health system in providing clinical care and accessing shared support services, where appropriate. Because nearly all of the recommendations in this report describe how this new health system would be created and operated, only a few of the recommendations apply directly to University Hospital. Unless specifically identified otherwise, all references in this report to “hospitals” refer to the four voluntary hospitals in central and northeastern Brooklyn.
Transformation of the healthcare delivery system cannot occur in isolation; this is a unique opportunity to address social determinants of healthcare. It has been estimated that approximately 10 percent of an individual’s health can be attributed to the clinical care received, while the balance is a function of social and economic factors, personal choice, health behaviors and environmental issues. These nonclinical social determinants are critically important to the health of the communities of central and northeastern Brooklyn.

Given the magnitude of the State’s long-term investment of more than $2 billion in transforming healthcare, here we have a unique opportunity to innovate and dramatically transform the social and community service safety net for the communities of central and northeastern Brooklyn. An organization whose future financial health is tied to value-based purchasing and population health must integrate services that are both upstream and downstream of healthcare delivery, and focus on the underlying social and community determinants of poor health status. There will be opportunities for the health system to address the issues of housing, education, poverty, hunger and violence. As a major community employer and provider of career ladders for upward mobility, the proposed health system can also become more focused as an economic engine for the long-term benefit of the communities it serves. The health system should create a public (state and city)/private partnership and invest in infrastructure and resources to better integrate clinical care with a coordinated continuum of community safety net programs that address the social determinants of health and the economic health of the service area.

The community and stakeholder groups must continue to be engaged in the implementation of the Transformation Plan. It was clear from engagement meetings organized by the State that the community and other stakeholder groups care passionately about the needs of local residents. They also care passionately about their hospitals, the challenges that have to be overcome and the need to see improvements in healthcare for their families, neighbors and community. An ongoing, community-based engagement effort that is responsive to the interests and perspectives of local communities beyond the development of an advisory board is essential to strengthen an understanding of the need for a regional approach to transform the healthcare delivery system and of the complex changes that must accompany such an effort.

Safety net hospitals need to be supported through a new funding methodology. Whether reimbursed on a fee-for-service basis or through a value-based purchasing methodology, hospitals that are 90 percent dependent on government payers cannot operate without supplemental support. Although beyond the scope of the current study, it is apparent that State and federal governments have to create a common, narrow definition of an essential safety net provider, establish high and clearly accountable expectations as to their restructuring, cost structure, operations and performance and develop a new methodology to provide access to capital investment and fund ongoing operations.

A major concern is that without a new policy to fund safety net providers, the $700 million in capital investment and $1.5 billion in operating support, as well as the enormous effort expended to transform the healthcare delivery system, will be wasted if the health system reverts back to its current hand-to-mouth existence, which is primarily focused on managing cash flow to pay employees and vendors and meeting other critical operating commitments. More important, without a sustained level of operating support, improvements in health status may not be maintained, or, worse, may be lost.
Transformation Plan

The proposed Transformation Plan includes several major components:

• Establish an independent, unified, mirror board governance structure over all the hospitals.
• Appoint systemwide management and clinical leadership, and develop a shared services infrastructure.
• Develop a large, geographically dispersed ambulatory care network.
• Regionalize clinical programs and restructure inpatient services among the hospital campuses.
• Create a safe environment in which to provide care.
• Create an enterprisewide information technology platform.
• Develop a managed care contracting entity.

Establish an independent, unified mirror board governance structure over all the hospitals. Without significant changes in the governance, organization and management structure of the four hospitals, the provision of healthcare to the service area communities will continue to be fragmented and to require an ever-growing subsidy to support a failing model of care from which the community and the State realize little meaningful value.

Therefore, a new governance model has been proposed: placing the hospitals under a single mirror board of trustees composed of representatives from each hospital, with a majority of the trustees newly appointed.

Appoint systemwide management and clinical leadership and develop a shared services infrastructure. There are numerous examples of opportunities to achieve operating and organizational efficiencies through the consolidation of administrative and clinical programs. Further, creating a systemwide shared services organization and organizing its capabilities to support the strategic objectives of a Transformation Plan can be structured to benefit not only the four hospitals but University Hospital and other hospitals in the region.

Develop a large, geographically dispersed ambulatory care network. The most important transformational element of this plan is the development of a comprehensive ambulatory care network to significantly expand the availability of primary care services. This investment is critical for the health system’s ability to adapt its business model to value-based reimbursement and improve the health of populations. The proposed $245 million ambulatory care development plan includes the recruitment of an additional 120 health providers and the development of a coordinated network of 36 new facilities that will include urgent care, primary care and specialty services organized around community-based diagnostic and treatment care facilities. The network can provide over 500,000 visits annually.

Regionalize clinical programs and restructure inpatient services among the hospital campuses. The inpatient programs should be restructured to more effectively respond to identified community health needs and future demand; they should be organized to foster an operationally efficient regional care delivery model. The movement of services must be carefully planned and deliberately implemented. Many of the opportunities will require capital investment before restructuring can occur, although some can proceed earlier with a high degree of communication and coordination.

Brookdale, Interfaith and Wyckoff will continue to serve as the locus for specialized inpatient care and will be strengthened as community hospitals in their respective regions. Kingsbrook will evolve into a regional campus for post-acute, specialized ambulatory care and programs addressing social determinants of health. While Kingsbrook will continue to provide access to emergency care, it will no longer provide inpatient medical/surgical or behavioral care. The Transformation Plan will require Kingsbrook to transfer its medical/surgical volume to Brookdale and its behavioral patients to Interfaith, once investments are made in those facilities to enable them to accept these programs.
Brookdale must be rebuilt to accommodate medical/surgical patients from Kingsbrook and complex, high-risk, low-volume surgical cases from Interfaith, as well as continuing to serve as a regional trauma center. Investments at Interfaith will permit it to reopen its behavioral health unit and continue to provide emergency, medical, routine surgery, behavioral and specialty ambulatory care services in new, expanded facilities. Investments must be made at Wyckoff to support clinical program development and ambulatory surgical growth, particularly in cardiac, orthopedic and maternity services.

At the end of the transformation period, Brookdale, Interfaith and Wyckoff will continue to provide regional access to a range of medical/surgical, behavioral and other specialized inpatient services. The inpatient programs of these hospitals must be clinically integrated with a significantly expanded regional primary and ambulatory care network.

Creating a safe environment in which to provide healthcare. The inability to access capital combined with minimal preventive maintenance has by necessity resulted in a “fix-when-fail” approach to facilities and equipment. To facilitate and support the clinical programs’ restructuring and the ongoing operations, there are significant infrastructure issues that must be addressed at each facility. Many of these investments will never be visible to the public, because they address a variety of mostly hidden though mission-critical elements that include environmental, emergency generation, mechanical, electrical and plumbing systems.

For the hospitals to win back the trust of the community, they must provide a safe, modern, patient-centric environment in which to render care. The rebuilding of the Brookdale and Interfaith campuses is critical to achieving the operating savings generated by the restructuring of the inpatient capacity from Kingsbrook and supporting the expansion of primary care capacity. Facility investments at Wyckoff will enable the hospital to develop new programs and expand services needed by the surrounding community.

Creating an enterprisewide information technology platform. The new health system will need to make critical infrastructure investments in technology, applications and equipment to provide a strong foundation for clinical and operational integration and program growth, positioning the health system to thrive in the new world of payment reform and population health. In particular, there will be a need to establish a common information technology platform to effectively support clinical decision making, improve quality and patient care outcomes, develop effective care management capabilities, optimize revenue cycle activities, attain operating efficiencies through the shared services infrastructure and integrate those activities with a new ambulatory electronic medical record (EMR).

Develop a managed care contracting entity. The health system must develop a managed care contracting entity that would be responsible for joint fee-for-service and value-based contracting for the hospitals and its independent practice association (IPA). There may also be opportunities to collaborate with University Hospital, CCB partners and a network of community-based providers such as the FQHCs. This contracting vehicle can stimulate the development of important partnership opportunities to better meet the healthcare needs of the service area communities.

Capital Investments

The amount of capital required to make transformative changes in the healthcare delivery system significantly exceeds the $700 million made available through the Kings County Health Care Transformation Program. We have proposed that the transformational investment for ambulatory care development and information technology be given priority, and facility investments to support the clinical restructuring initiatives and infrastructure phased in over a number of years. As noted above, it is anticipated that capital funds in excess of the extraordinary $700 million appropriation must be accessed by the new regional health system over the next decade from other available sources, both public and private.
Operating Impact

A financial model of the Transformation Plan was developed with the assistance of Kaufman Hall & Associates, Inc., which was retained by Northwell as a member of the project team. A baseline financial projection was prepared based upon detailed revenue and expense data provided by the hospitals. This projection depicted a five-year, status quo run-out of each organization’s performance on an individual and consolidated basis for all operating entities. Without changes to the current organization or operations of the four voluntary hospitals, the estimated SFY 2017 operating deficit loss of $310 million is projected to grow by $95 million to $405 million in 2021.

As the full impact of the Transformation Plan is realized by the four study hospitals, the projected deficit to operate the hospitals may decline from its current level of $310 million to approximately $288 million by 2021. Therefore, once the transformation is fully implemented the annual projected operating deficit of $405 million may be reduced to $288 million by 2021, a difference of $117 million. However, these savings are dependent on consolidation of shared services, investment in information technology and support for ambulatory care expansion, which accompany the restructuring of the inpatient facilities.

Continued operating support will be required for several years through the transformation period. It will be challenging to reduce it further unless the health system can attain greater efficiencies in its clinical care model and diversify its payer mix. Investments in the Transformation Plan will support improvements in the quality of care, restructure the organization and provision of clinical services, achieve operating efficiencies and produce new or improved facilities, all of which should result in higher levels of patient satisfaction. Most importantly, there will be a significant investment in the creation of an ambulatory care network that will shift the locus of care into the service area communities by establishing 36 new locations and providing more than 500,000 additional primary and ambulatory care visits annually.

Summary

It is obvious that an undertaking as complex as this will generate many questions; additional work will need to be done to arrive at answers. However, it is important that the hospitals’ current leadership, community members, elected leaders, other stakeholder groups, union representatives and the DOH are given the opportunity to fully understand and discuss the recommended changes and activities that must occur in the weeks and months following the issuance of the report. It is also important that, once consensus on direction is achieved, the new health system move forward with clarity of purpose to avoid another missed opportunity. Management accountability for timelines and milestone objectives should be clearly established for the service area communities to realize the benefits of these actions as soon as possible.

The common denominator in the mission statements of all the study hospitals is the recognition that these institutions exist to improve the health of the communities they serve. This core aspect of each hospital’s mission will be put to the test when their board leadership and other stakeholder groups assess the benefits of coming together to qualify for the initial investment of $700 million in capital and the ability to receive over $1.5 billion in operating subsidy over the next five years. The hospitals and their supporters will have to decide whether they can best respond to the challenging problems of the communities they serve by working collaboratively, or whether they will be more effective working independently.
A. Introduction and Background

The quote appearing in the preface to this report is from the 2011 release of the Medicaid Reform Task Force's *Report of the Brooklyn Health Systems Redesign Workgroup*, which focused on the issues confronting Brooklyn's hospitals. In the years since the issuance of that report, there have been no fewer than seven studies and analyses, prepared by a range of stakeholder groups, that identified the challenges confronting the hospitals of central and northeastern Brooklyn and proposed recommendations to improve their operations and sustainability. All of the previous studies were generally aligned in defining the problems and proposed recommendations. With no action taken, however, the losses continue to mount and the solutions become harder to fund and implement.

In attempting to implement recommendations from these earlier studies and analyses, the New York State Department of Health (DOH) encouraged hospital alignment and tried to identify potential large health system partners to work with Brooklyn health providers to strengthen and protect access to healthcare services in the communities of central and northeastern Brooklyn. Unfortunately, those efforts were unsuccessful. This report incorporates the work of previous studies but differs in a significant and substantive way; it develops strategic recommendations and also provides an operational roadmap for creating a regional healthcare delivery system, and it proposes structural changes foundational to successful implementation.
The service area communities appearing in Figure 1, Service Area for Central and Northeastern Brooklyn, are currently served by the following hospitals that are the focus of this study: Brookdale University Hospital Medical Center (Brookdale), Kingsbrook Jewish Medical Center (Kingsbrook), Interfaith Medical Center (Interfaith), Wyckoff Heights Medical Center (Wyckoff) and University Hospital of Brooklyn (UHB or University Hospital), which is part of the State University of New York (SUNY) Downstate Medical Center system. These five hospitals are collectively referred to as the study hospitals. When we cite central and northeastern Brooklyn we are referring to these hospitals’ service area. Brookdale, Interfaith, Kingsbrook and University Hospital are in relatively close proximity to one another in central Brooklyn, while Wyckoff is almost four miles away from Brookdale and 2.5 miles from Interfaith, in northeastern Brooklyn. (See Figure 2, Distance Between Hospitals.)

All of these hospitals function independently of one another. In the current fiscal year, the gap between patient revenue and operating expenses will be approximately $500 million, which is made up through a combination of State and federal support. Brookdale, Kingsbrook, Interfaith and Wyckoff receive operating support directly from New York State through various Medicaid-related programs, while University Hospital’s operating subsidy is provided through a combination of direct appropriations in the New York State budget, State responsibility for any medical malpractice claims, the provision by the State of the local match of federal Disproportionate Share Hospital (DSH) payments – a match payment which all not-for-profit hospitals fund from internally generated cash flow. Many of the communities identified in Figure 1, served by the hospitals that are the subject of this study, are also served by the Health + Hospitals (H+H) Kings County Hospital Center (KCHC) and H+H Woodhull Hospital, which are already part of a citywide regional health system and thus not directly included in the study.

The objective of this report is to identify a means to realize increased value from the State’s continued operating subsidies and capital investment. To this end, this report proposes the development of a more robust...
and sustainable framework for central and northeastern Brooklyn providers to better address the challenges of improving the health of the communities they collectively serve. It should be noted that central and northeastern Brooklyn have not closely followed the trends of the broader industry; throughout the metropolitan region, there have been significant hospital consolidation, growth in ambulatory care services and the evolution of physician networks. The study hospitals need to catch up with the broader market strategies other providers have been pursuing over the past decade.

This study also presents a unique opportunity to innovate and think creatively about how New York State and New York City government can better align all sources of government funding, both healthcare and non-healthcare, expended in central and northeastern Brooklyn to more effectively address the social determinants of healthcare... with Medicare Advantage and Medicaid Managed Care plans that apply significant denial rates, resulting in effective payment rates below those of Medicare and Medicaid fee-for-service, respectively. Unlike many other hospitals, they lack the ability to offset these below-cost payers and earn a positive operating margin from commercial payers; the overwhelming majority of commercially insured patients, 72 percent, living in the service area choose to receive care elsewhere in Brooklyn or outmigrate to Manhattan. (See Figure 3, Service Area Discharges and Share by Payer, 2015.) For those commercial payers they do treat, the hospitals are in a very weak position to negotiate with their insurers. Additionally, hospital losses are exacerbated by labor agreements that do not fully recognize the shift of the locus of care from inpatient to ambulatory settings. Expanded worker retraining and more flexible provisions are needed to adapt to the emergent forces shaping the local healthcare landscape.

This study also presents a unique opportunity to innovate and think creatively about how New York State and New York City government can better align all sources of government funding, both healthcare and non-healthcare, expended in central and northeastern Brooklyn to more effectively address the social determinants of healthcare...
and contributed to the hospital’s decline; Interfaith was for many years managed by a for-profit company and then entered and exited bankruptcy; Wyckoff acquired St. John’s and Mary Immaculate hospitals in Queens, formed Caritas Health System and then placed Caritas in bankruptcy, closing both hospitals; and Downstate agreed to acquire Long Island College Hospital (LICH) from Continuum Health Partners (itself a failing health system subsequently acquired by Mount Sinai), resulting in the loss of hundreds of millions of dollars and the closure of LICH after a protracted public battle.

At least some of the responsibility for their troubled history and the difficult circumstances in which the hospitals now find themselves must be attributed to poor decision making by prior hospital leadership management. Other New York hospitals in similar circumstances addressed their challenges through partnerships and mergers. The Brooklyn hospitals, however, either tried and failed to enter into such partnerships or mergers, chose to remain independent or entered into poorly conceived and ultimately destructive arrangements. Fortunately, at the time of this study, the hospitals have all taken significant steps forward in improving the quality of their leadership teams.

### Healthcare Changes Add to the Challenge

Hospitals of central and northeastern Brooklyn have to confront a new economic reality in which federal and State resources are constrained, and new payment methodologies require major transformation of the clinical and business model of care and will economically penalize providers who fail to meet value-based operating metrics for quality, efficiency and value. Due to advances in medicine, many healthcare services that were once the exclusive domain of hospitals are now delivered as effectively and often more efficiently in an ambulatory or home setting. Hospitals such as those in central and northeastern Brooklyn that have not developed robust and geographically dispersed ambulatory care networks are particularly disadvantaged, because the availability of such networks permits hospitals to offset declining inpatient revenues with growing ambulatory revenues, which are foundational to success under value-based purchasing.

The effect of these market and financial forces is that all five hospitals report staggering operating deficits with no independent access to capital to invest in program and facility transformation. In SFY 2017 (which runs from April 1, 2016, to March 31, 2017), Brookdale, Interfaith, Kingsbrook and Wyckoff are expected to require approximately $300 million in State operating subsidies to remain

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**Figure 3**

**Service Area Discharges and Share by Payer, 2015**

<table>
<thead>
<tr>
<th>Payers</th>
<th>Service Area Hospitals¹</th>
<th>Outmigration²</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Medicaid</td>
<td>36,625</td>
<td>27,858</td>
<td>64,483</td>
</tr>
<tr>
<td>Medicare</td>
<td>21,560</td>
<td>21,090</td>
<td>42,650</td>
</tr>
<tr>
<td>Commercial</td>
<td>7,639</td>
<td>19,173</td>
<td>26,812</td>
</tr>
<tr>
<td>Self-Pay³</td>
<td>5,254</td>
<td>2,912</td>
<td>8,166</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>71,078</strong></td>
<td><strong>71,033</strong></td>
<td><strong>142,111</strong></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Market Share</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
</tr>
<tr>
<td><strong>Hospital</strong></td>
</tr>
<tr>
<td><strong>Hospitals¹</strong></td>
</tr>
<tr>
<td><strong>51%</strong></td>
</tr>
<tr>
<td><strong>28%</strong></td>
</tr>
<tr>
<td><strong>64%</strong></td>
</tr>
<tr>
<td><strong>50%</strong></td>
</tr>
</tbody>
</table>

**Note:**

1. Includes 5 study hospitals, H+H Kings County and H+H Woodhull.
2. Outmigration includes service area residents discharged from Brooklyn hospitals outside the service area, Manhattan and all other NYS hospitals.
3. Includes all other payers.

**Source:** SPARCSver2016.05.27adj
Figure 4
Decade of Organizational and Financial Trauma

2000
Medisys manages Brookdale and becomes sole voting member

2001

2002

2003

2004

2005

2006

2007

2008

2009

2010

2011

2012

2013

2014

2015

2005
St. Vincent’s files for bankruptcy

2006
Wyckoff purchases St. Johns and Mary Immaculate and forms Caritas

2006
Victory Memorial enters bankruptcy

2007
Victory Memorial closes

2008
Wyckoff designated affiliate of NY Presbyterian

2008
Downstate leases Victory Memorial

2009
Caritas files for bankruptcy and closes hospitals

2011
MRT proposes Interfaith and Wyckoff merge with Brooklyn Hospital

2011
Downstate acquires LICH from Continuum Health Partners

2011
Proposal for Kingsbrook and Brookdale to merge

2012
Interfaith enters bankruptcy

2012
Affiliation with NY Presbyterian terminated

2012
Medisys severs relationship with Brookdale

2014
LICH closes

2015
Interfaith emerges from bankruptcy

Interfaith | Wyckoff | University Hospital | Kingsbrook | Brookdale

Brooklyn Transformation Study
The subsidies to these four hospitals account for roughly two-thirds of the total State operating subsidies to not-for-profit hospitals statewide. Absent significant restructuring efforts targeted at reducing fixed and variable operating costs and increasing revenue, the need for State support will continue to grow to an estimated $405 million by SFY 2021 to keep them operating only in their current state. The cumulative State cost of these baseline gaps through SFY 2021 is projected to be nearly $1.8 billion. These State subsidy estimates do not include the cost to support University Hospital, which continues to face significant financial challenges. The market and financial forces confronting these hospitals make it virtually impossible for them to succeed on their own. This is not simply a management issue; no management team could be expected to achieve break even even from operations given the market forces they have to confront and the reality that government payers do not adequately recognize the relatively high costs associated with providing health services. Even with strong health system partners, these hospitals could not survive without sustained operating support and additional investments to transform their clinical and operating model of care.

Almost all other hospitals in Brooklyn are now partnered or have entered into affiliation agreements with other healthcare systems that are helping them to evolve clinically and to adapt operationally and grow in this new healthcare environment. (See Figure 6, Health System Presence in Brooklyn.) The diligent efforts on the part of the DOH to help find partners notwithstanding, the five hospitals in central and northeastern Brooklyn continue to maintain independent governance and operations. They are dependent on the DOH for operating support to maintain operations at the most basic level.

It should be noted that Wyckoff entered into an affiliation agreement with Northwell several months prior to the initiation of this study; under the agreement Northwell agreed to explore providing certain services to Wyckoff. The agreement does not contemplate the provision of any financial operating support or capital access by Northwell to Wyckoff, which continues to be heavily dependent on New York State for operating support that is expected to be approximately $70 million in SFY 2017.

**Pathway to a Solution**

It is a daunting task for any community hospital to transform its decades-old clinical model of care, operations and facilities at a time of rapid marketplace change. This task is made more complex when the objective is to align the governance, management and clinical leadership and cultures of multiple financially struggling independent hospitals in a new regional partnership. These hospitals have been unwilling or unable to come together to try to attain operating efficiencies or find a larger health system partner to provide access to valuable infrastructure services. Through a multi-year effort, with objective analysis, informed planning and continued funding, however, transformation can be achieved.

Recognizing the importance of maintaining healthcare access for the most vulnerable communities of Brooklyn and concerned about the long-term sustainability of these independent hospitals serving local residents, the State of New York is now prepared to make significant capital and operating investments.
provided that its support is directly linked to a long-term solution that would transform care in the region, align both strategic investments and operations in a more efficient and effective manner and improve the overall quality of care for the communities served.

It is important to recognize at the outset that, because of the depth of challenges facing these institutions with a government-dependent payer mix, operating subsidies will still be required for several years. There should be no expectation that these hospitals will break even from operations in the foreseeable future. However, there should be an expectation of realizing greater value for the operating subsidies and capital amounts invested, particularly with respect to increasing ambulatory access to care, improving in quality, attaining operating efficiencies, addressing identified community health needs and preparing the organization to participate in new reimbursement models, such as value-based purchasing, that are designed to improve the overall cost and quality of care.

**Role of Northwell Health**

The Delivery System Reform Incentive Payment Program (DSRIP) in 2014 provided three of the hospitals, Kingsbrook, Interfaith and Wyckoff, with an opportunity to partner with Maimonides Medical Center (Maimonides) in forming Community Care of Brooklyn (CCB), a Performing Provider System (PPS). It should be noted that University Hospital partnered with its primary academic affiliate, Kings County Hospital Center, to join the Health + Hospitals PPS; Brookdale, due to its financial condition at the time, was unable to join either PPS.

In August 2015, the North Shore-LIJ Health System, now Northwell Health (Northwell), and Maimonides entered into an agreement to pursue a full integration in a phased approach that began with a comprehensive strategic partnership to assist Maimonides in its ability to provide health services and its leadership role in transforming healthcare provided to Brooklyn residents.
Northwell is one of the few health systems in the nation that has a proven history of creating multiple successful partnerships with community hospitals that have improved clinical quality outcomes, enhanced access to an expanded array of clinical programs and services and improved operating performance through economies accompanying network scale. Additionally, it has transformed its facilities and operations in a respectful and productive partnership with its workforce, their union representatives and the communities they serve. Only a handful of health systems in the nation can make such a statement.

Northwell’s unique capabilities and the lead role Maimonides has assumed in the DSRIP Program were key considerations in the Department of Health’s request that Northwell conduct this review, with the participation of hospital leadership and the perspectives of healthcare professionals, staff and their designated representatives and community stakeholders.

Study Methodology

In engaging Northwell and its healthcare consulting division, Northwell Ventures, to conduct this study, the DOH issued requirements for the feasibility study and outlined a number of objectives it wanted to achieve. The study objectives are summarized in the section that follows, and the full document appears in Appendix A.

Northwell reviewed all relevant studies and analyses that were published following the 2006 issuance of the report Commission on Hospitals and Healthcare in the 21st Century (also known as the Berger Commission). These studies provided a useful framework for understanding the marketplace challenges confronting the hospitals as well as recommendations that are still relevant to the objectives of the current study.

Community Engagement

The Governor’s office, the DOH and elected officials sponsored a series of eight community engagement meetings, at a hospital or accessible community location, to solicit the perspectives, concerns and comments of patients, community members, leaders of community-based organizations, hospital staff and labor representatives. Northwell attended all of these meetings so it could incorporate these voices into a strategic vision for the alignment of the four not-for-profit Brooklyn hospitals and University Hospital to better serve their communities.
Northwell also relied on published community assessments of the service area that identified critical community health issues that providers would need to address in furtherance of the mission to improve the overall health of the communities.

The study was also able to benefit from the significant and important work performed by the Maimonides-led PPS, CCB, which generously shared its insights and analyses about community health needs and projections regarding the impact of the DSRIP Program and other initiatives on hospital operations. The CCB has worked to foster collaboration and alignment among the hospitals of central and northeastern Brooklyn as part of its partnership with over 3,000 providers. The CCB is assisting DSRIP Program participating providers to prepare for value-based purchasing and investing in a shared care management infrastructure that will have long-term value and be beneficial to regional transformation efforts.

**Operational Review**

As part of the organizational and operational assessment, the hospitals provided a significant amount of data and information about the structure and performance of clinical programs, hospital operations, nursing care quality and finances. More detailed reviews were conducted for critical operating activities such as human resources, information technology, laboratories, procurement, supply chain and compliance and risk activities, to name a few.

Northwell approached this aspect of the study by applying the expertise and capabilities it has acquired in creating a health system with over 20 hospitals and attaining clinical integration with a combined medical staff of approximately 14,000 physicians, of whom approximately 3,900 are employed physicians working at over 450 locations in a growing ambulatory care network. Northwell assembled a team of more than 50 experienced clinicians and managers who had conducted similar operational analyses at multiple hospitals to identify opportunities that can be realized through closer clinical and management collaboration, coordination or consolidation. Organizational and management expertise was made available through Northwell Ventures, the healthcare consulting services division of Northwell.

The operational teams reviewed available data and conducted on-site visits and follow-up calls with their counterparts to analyze opportunities and propose recommendations to improve quality and patient outcomes, attain efficiencies, enhance patient satisfaction and identify opportunities to invest in programs and facilities that are responsive to addressing identified community health needs, improving community health status and preparing the organizations to operate under new value-based reimbursement programs.

These operational teams then quantified the proposed investments and the range of savings that may be realized. These efforts were used to formulate recommendations to establish a new operating structure that could transform the regional care delivery system and address social determinants of healthcare. The operating and capital implications of the recommendations were used to develop a projected financial model of hospital operating performance in a proposed new organizational structure. Northwell retained the consulting firm Kaufman Hall & Associates to develop these models, because of their capabilities and also because they had been previously retained by three of the study hospitals through the CCB and had already incorporated much of the needed baseline data into models created for other initiatives.
### Funding Availability

In 2015, the New York State Legislature authorized the appropriation of up to $700 million in a capital investment program to transform the delivery of healthcare services in central and northeastern Brooklyn. (See Appendix B.) This program is to be administered under the joint authority of the Commissioner of Health and the President of the Dormitory Authority of the State of New York (DASNY). These funds are specifically designated for Brooklyn, to support projects that will “transform the organization and delivery of health services as part of a merger, consolidation, acquisition or other significant corporate restructuring activity intended to create a more financially sustainable system of care.”

The statute requires that the funds be focused on eligible providers serving communities in Brooklyn whose residents are experiencing significant levels of disparities compared to other communities within Kings County, as evidenced by a number of risk factors including dependency on Medicaid, health status indicators and socioeconomic determinants of health. In addition, providers applying for funds must demonstrate sustained operating losses as well as other specific financial indicators for the past three years. It is expected that the successful applicant will propose a plan that would transform the organization and delivery of care, strengthen and protect continued access to healthcare services in central and northeastern Brooklyn and identify specific capital and operational projects that would improve quality and operational efficiency of the system of care.

### Key Deliverables

The intent of this study is to provide both the State and the governance and leadership of the hospitals with guidance that is responsive to the following objectives:

- Provide a strategic framework for the region of central and northeastern Brooklyn to develop a governance and operating structure(s) that would transform the healthcare delivery system, be responsive to community needs, right-size inpatient capacity and expand access to ambulatory care.
- Identify opportunities to realize efficiencies that would be necessary to reduce reliance on extraordinary State operating subsidies, with the goal of improving the financial sustainability of the system of care.
- Describe the manner in which any proposed new system(s) could ensure that SUNY Downstate Medical Center maintains and enhances its educational mission to train the next generation of health professionals.
- Identify a potential time frame and implementation strategy that would minimize adverse impacts on the affected workforce and other communities of interest that might otherwise result from any proposed recommendations.

### Guiding Principles and Strategic Objectives

In commissioning this study, the DOH provided Northwell with the following guiding principles and strategic objectives for its analysis and recommendations:

- Any proposed system(s) would be responsive to the unique healthcare needs of the diverse communities that comprise the identified service area.
• Wherever practicable, residents of the service area would have the opportunity to receive needed healthcare in their home communities.

• Ambulatory care services would be expanded and improved to the extent necessary to avoid unnecessary reliance on emergency room services and utilization of inpatient hospital services.

• Any proposed system(s) would embrace principles of population health management, placing community interests ahead of institutional interests.

• The area’s current offering of essential community-based clinical and support services would be valued.

• Access to emergency healthcare services of high quality would be assured.

• Access to healthcare services for uninsured area residents would be improved.

• New programs, services or partners that can reduce healthcare disparities and address the impact of social determinants of health would be identified.

• The availability of primary care and specialty physicians, nurse practitioners, physician assistants and community health workers who live and work in the community would be increased.

• Incentives within any proposed system(s) and its physicians and other partners would be aligned to maximize the quality, efficiency and effectiveness of care provided.

• To the greatest extent possible, the existing workforce would be retained, and training opportunities would be offered to ensure that culturally competent care is available to the community in a patient-centric, coordinated care model promoting health and wellness.

• Integrated care management and community health infrastructures would be supported to help chronically ill and high-cost patients more effectively manage their health and have access to services.

• Critical infrastructure investments in technology, equipment and facilities that provide a strong foundation for program growth and enable any proposed system(s) to obtain the benefits of Medicaid and Medicare payment reform would be identified.

• Necessary State operating support and capital investments required to consolidate programs and facilities, rebuild needed facilities and build an ambulatory care network would be quantified, recognizing the relative constraints of available State funding.

It is important to emphasize that this study is focused on creating value for the community by optimizing investments in terms of increased access to primary care, safer facilities and expanded clinical programs. It is focused on changing the historical practice of just subsidizing hospital losses, which has barely maintained an inadequate status quo.
C. Service Area, Financial and Marketplace Challenges

Although recommendations have been made and studies done to increase coordination and in some instances consolidation among Brooklyn hospitals since the late 1980s and early 1990s, we have chosen to review the data that followed the 2006 issuance of the recommendations of the Report of the Commission on Health Care Facilities in the Twenty-First Century, also referred to as the Berger Commission report.

Since the issuance of the Berger Commission report there have been a number of reports issued that have had either direct or indirect impact on the Brooklyn study hospitals (See Figure 7, Timeline of Brooklyn Hospital Studies.) Subsequent studies and analyses were conducted by a variety of organizations, and there were even unsuccessful attempts to merge one or more of the four voluntary study hospitals. These studies repeatedly described the health needs of the service area and documented the financial, regulatory and market challenges that needed to be addressed. They all shared a common view of the local characteristics and forces that have destabilized the hospitals and have prevented these institutions from generating sufficient margins to become financially viable and provide high-quality care to their

![Figure 7 Timeline of Brooklyn Hospital Studies](image)

Brooklyn Hospital Studies:

A. Planning for the Future
B. A Plan to Stabilize and Strengthen New York’s Health Care System
C. At the Brink of Transformation: Restructuring the Healthcare Delivery System in Brooklyn
D. Brooklyn Healthcare Improvement Project (B-HIP)
E. The Need for Caring in North and Central Brooklyn
F. Brooklyn Hospitals Safety Net Plan
G. New York City Health Provider Partnership
H. Brooklyn Community Needs Assessment
I. Caring For Today, Planning For Tomorrow
communities as independent, stand-alone hospitals unconnected to larger regional systems of healthcare. Thus, the plan that follows has to recognize these forces and propose an alternative organizational and funding structure to facilitate health system transformation from an independent hospital-centric model of care to a community-integrated, patient-centric, regional model that can better respond to identified community healthcare needs.

**Today’s Market Forces**

Healthcare has rapidly moved outside the walls of the hospital into the community, whether workplace or home. Hospitals are still important, but they are no longer at the center of the healthcare delivery system, nor are hospitals the primary means by which a community could or should access the healthcare continuum. Federal and State redesign of payment models has required changes in medical practice and the creation of new clinical models, which are characterized by coordinated, digitally connected comprehensive care provided through clinically integrated, geographically dispersed networks of care. Access to emergency and acute hospital services is still important, but facility investments have to be balanced between maintaining a safe, effective inpatient environment and building ambulatory care capacity beyond the hospital campus.

Healthcare providers must operate efficiently and acquire new capabilities and expertise to thrive in a new world of value-based reimbursement. Governance must be focused and engaged; strong management and clinical leadership are essential to guide transformation efforts. Additionally, access to capital is critical as hospitals need to right-size their inpatient facilities, make infrastructure investments and build new programs and facilities to which the focus of care will be shifted.

**Implications of the New Environment**

In order to create understanding of the magnitude of the transformation, the hospitals will have to respond to myriad challenges:

- Advances in medical care that have reduced length of stay and shifted a wide range of services from the inpatient setting to ambulatory settings mean that fewer inpatient resources are needed to provide care.
- Lower inpatient use rates have led to oversized and inefficient physical plants.
- Intense competition for patients (particularly for commercially insured and surgical patients) from neighboring hospitals and academic medical centers outside of Brooklyn has contributed to hospitals’ instability.
- There is an over dependency on government payers and underpayment for inpatient services by these payers, as well as debt burdens, other liabilities and the lack of reserves and resources to effectively invest in solutions needed to respond to the rapidly changing local healthcare landscape. Without sufficient resources it is difficult to make investments to deliver the quality of care community residents demand and deserve.
- Prevailing payment methodologies pay more for highly specialized, resource-intensive procedures, which migrate out of the service area, and less for the medical and surgical services that constitute the core of the study hospitals.
• Labor agreements have a hospital-centric view of job titles, work rules and compensation, and they have required wage and benefit increases in excess of revenue growth generated by government-dependent providers. In addition, labor expenses have remained relatively fixed while revenues have declined, leading to higher labor costs as a percentage of patient revenues.

• On their own, the hospitals cannot attain economies of scale and depth of management expertise and develop unique capabilities that are critical to transforming the clinical care model to benefit from new reimbursement methodologies.

• There is a need to invest in developing an ambulatory care network and recruit primary care providers to reduce reliance on emergency departments for services that would more appropriately be provided elsewhere.

• Community healthcare needs must be addressed with more effective integration strategies that focus on the social determinants of care.

• The hospitals must collaborate more effectively among themselves and with the valued regional academic asset that is Downstate Medical Center.

Previous Studies

It may be helpful to summarize the proposed recommendations contained in the previously published studies in response to the market, financial and regulatory forces described above.

The 2011 report issued by the Brooklyn Health Systems Redesign Workgroup (Brooklyn Workgroup) of the Medicaid Reform Taskforce endorsed the creation of an integrated system of care aligned with community needs as a means of improving individual health and community health and recommended the following:

• Creation of an integrated system of care and service delivery model.

• Support of strong institutional governance and recruitment of experienced leadership to stabilize the most troubled hospitals and steer them into joining an integrated healthcare system.

• Development of relationships with academic medical centers and other providers from outside Brooklyn to create partnerships with local hospitals and providers.

• Rethinking of the hospital-based brick and mortar pattern of healthcare and development of strategic relationships between acute and long-term care providers around a patient-centered primary care approach.

The Brooklyn Workgroup also recognized the need for capital access and operational subsidies for restructuring activities but recommended it be conditioned on the development of a viable strategic, financial and operational plan that included creation of a new governance and management structure.

The Brooklyn Safety Net Plan, prepared by Fred Hyde and Associates in 2012, contains a detailed review of previous studies and was initially sponsored by the unions representing public employees at SUNY Downstate. The study makes similar recommendations regarding ambulatory care development and decreased reliance on hospital inpatient capacity and calls for increased cooperation and alignment among Brooklyn hospitals in support of the academic mission of Downstate and increased placement of SUNY residents in ambulatory care settings.

The plan proposed that New York State create a $1.3 billion bond investment program to generate funds to help Brooklyn hospitals transform their current “business model” to one with much greater emphasis on comprehensive ambulatory care and to provide funds for current hospital financial emergencies. It recommended bonding of $1.3 billion over 40 years, to be repaid from the State’s receipt of Section 1115 DSRIP waiver funds, although this would not have been permitted under the terms of the approved waiver.
The more recent *Caring for Today, Planning for Tomorrow*, prepared in 2014 and funded by 1199/SEIU and the New York State Nurses Association by the Coalition to Transform Interfaith and MIT’s Community Strategy Lab (Coalition Report), although focused on Interfaith, made many cogent observations of the challenges that need to be addressed in order to effectively respond to the social determinants of community health needs.

It recommended that Interfaith be transformed from “an inpatient-focused, limited-care facility to a hub for the promotion of community health and wellness.” It also stressed that in order to address some of the most critical healthcare challenges confronting the community, there must be meaningful activities that recognize that “health care is only one component of health” and effective responses to social determinants of healthcare disparities.

The Coalition Report recognized the complexity of transformation efforts and the need to continue deficit-funding Interfaith through the transformation period. It also proposed restructuring governance with additional trustees with both the requisite local knowledge and the dedication to the community to make the difficult decisions that lay ahead. At the time of the report, the Interfaith board consisted of three members who were appointed by the bankruptcy court. The Interfaith board was subsequently expanded with several trustees who had been recommended by the Coalition.

In the community health section of the Coalition Report, the need for the development of robust primary and preventive care services located throughout the community was stressed. Behavioral health services were identified as a critical need and recommended for integration into primary care, as were prenatal/maternity care programs. Similarly, comprehensive chronic disease prevention and care management programs were identified as a priority need, to help prevent chronic disease and also to assist those afflicted; also identified as high priority was increasing the number of primary care medical homes for people with mental illness and substance abuse issues.

The Coalition Report highlighted the important economic development role Interfaith and similar hospitals play as large businesses that buy from and hire local community members, as well as supporting local suppliers of goods and services. It also focused on the roles healthcare institutions can assume in housing preservation and development.

Unfortunately, none of these studies and subsequent actions resulted in substantive collaborations between hospital providers in central and northeastern Brooklyn, much less the creation of a more integrated health provider.
D. Community Health Status and Community Engagement Meetings

As a precursor to the health system transformation activities required under DSRIP, the New York Academy of Medicine (NYAM) conducted a Brooklyn-wide community needs assessment in 2014. This study highlighted several critical issues that a restructured healthcare delivery system for the residents of central and north Brooklyn must confront.

Brooklyn is a diverse borough, and its disparities are pronounced, given its mix of high-, medium- and low-income neighborhoods, and significant populations from multiple racial and ethnic groups. Each of these communities has unique needs related to culture, language, education and economics, as well as unique strengths.

Health Status Indicators

Compared to the rest of Brooklyn, New York City and the State as a whole, the communities in central and northeastern Brooklyn have measurably higher rates of obesity, diabetes, high blood pressure, congestive heart failure, infant mortality and alcohol and drug dependence. The hospitals within the scope of this study have poor or average measures for hospital-acquired infections, patient satisfaction and timeliness of care. According to the NYC Department of Health’s Community Health Ranking Analysis, the service area communities are consistently ranked among those with the worst statistics in Brooklyn both for health status and for socioeconomic indicators. (See Figure 8, Brooklyn Neighborhood Rankings for Selected Health Status Indicators, 2015 and Figure 9, Brooklyn Neighborhood Rankings for Selected Socioeconomic Indicators, 2015.) When compared to the rest of New York City these communities also rank among the worst, exceeded only by some communities in the Bronx.

In a survey of health status, many community members expressed concern about obesity and behavioral health – including anxiety, depression, substance abuse and violence – and clearly recognized the link between behavioral and physical health conditions.

Numerous health assessments of central and northeastern Brooklyn communities have identified a need for more primary and ambulatory care providers as a top priority, along with better coordination of and improved access to healthcare. This deficit is in part due to the fact that Medicaid and Medicare are the principal sources of healthcare reimbursement in these communities. Current heavy reliance on Medicaid and Medicare fee-for-service payment rates makes it difficult to support independent primary care practices. Additionally, many hospitals have been unable to access capital or generate sufficient operating margins to effectively invest in building and sustainably operate integrated ambulatory care networks of providers that could redirect inappropriate care away from hospital emergency departments. These factors exacerbate uncoordinated episodic care, which contributes not only to higher emergency department utilization for preventable conditions but also to hospitalizations for preventable illnesses.
### Brooklyn Neighborhood Rankings for Selected Health Status Indicators, 2015

<table>
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<tr>
<th>Service Area</th>
<th>Drug-related hospitalizations (per 100,000 adults)</th>
<th>Hospitalizations due to stroke (per 100,000 adults)</th>
<th>Psychiatric hospitalizations (per 100,000 adults)</th>
<th>Child asthma hospitalizations (per 10,000 children ages 5-14)</th>
<th>Avoidable asthma hospitalizations (per 100,000 adults)</th>
<th>Avoidable diabetes hospitalizations (per 100,000 adults)</th>
<th>Infant mortality rate (per 1,000 live births)</th>
<th>Premature mortality rate (per 100,000 population)</th>
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- **Bottom 5 ranking**

**Note:**
1. Each of the 17 neighborhoods are ranked from Worst (1) to Best (17) based on each indicator value.
2. Neighborhoods which rank in the bottom 5 are shaded in red.
3. Neighborhoods with identical results were assigned the same ranking.

**Source:** 2015 NYC Community Health Profiles
### Brooklyn Neighborhood Rankings for Selected Socioeconomic Indicators, 2015

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<th>Brooklyn Neighborhoods</th>
<th>% of adults not completed high school</th>
<th>% of residents below poverty line</th>
<th>% of unemployed adults age 16 and older</th>
<th>Teen Births (per 1,000 girls ages 15-19)</th>
<th>Jail Incarceration (per 100,000 adults ages 16 and older)</th>
<th>% who drink 1 or more 12 oz sugary drink per day</th>
<th>Avertable Death Rate</th>
<th>Life Expectancy</th>
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**Note:**
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2. Neighborhoods which rank in the bottom 5 are shaded in red.
3. Neighborhoods with identical results were assigned the same ranking.

**Source:** 2015 NYC Community Health Profiles
The greatest proportion of potentially preventable hospitalizations (PQI) is for chronic conditions, including respiratory conditions (asthma, COPD), cardiovascular conditions (heart failure, hypertension) and diabetes; these conditions and diseases represent the areas of greatest opportunity for reducing preventable inpatient stays.

Communities reporting high rates of preventable conditions consistently rank poorly in markers of socioeconomic determinants of health such as household poverty, unemployment, lack of health insurance and low levels of education, as well as high prevalence of disease.

Residents of central and northeastern Brooklyn neighborhoods, especially in areas with large public housing structures, tend to have low incomes and report concerns about securing basic needs like housing, food (especially healthy food), employment and resources needed to appropriately care for children. Crime, including gun violence and perceived threats to personal safety in some neighborhoods, may impact health-seeking behaviors as well as the availability of healthcare providers. These social determinants have a profound adverse effect on health status.

As many as a quarter of Brooklyn residents lack primary care providers. There are no strong primary care and community-based specialty care networks. The NYAM study noted that community residents are overly dependent on emergency departments for primary care, and a significant number of inpatient admissions are associated with PQIs, which suggests that they might have been avoidable had accessible primary care been available.

Approximately 60 percent of all emergency visits made by service area residents are potentially preventable. (See Figure 10, Service Area Potentially Preventable Emergency Department Visits, 2015.) The service area communities similarly experience high rates of avoidable/preventable inpatient admission/emergency visits relative to the rest of Brooklyn. (See Figure 11, Brooklyn PQI and Avoidable/Preventable ED Visit Rate Combined, 2015.) These studies highlight the inability of service area providers to effectively invest in and build a regional primary care network that is focused on redirecting inappropriate utilization away from the emergency departments and instead providing care in an ambulatory setting that may prevent an inpatient hospital admission.

In order to decrease reliance on the emergency department as a provider of primary care, there will need to be a significant increase in the number of primary care providers practicing throughout central and northeastern Brooklyn. This will require a major investment of resources to recruit primary care providers, develop facilities in which they will practice and conduct an extensive community awareness campaign to alter the area’s decades-old behavior of emergency department dependence for primary care access.

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**Figure 10**
Service Area Potentially Preventable Emergency Department Visits, 2015

- **Potentially preventable ED visits (PPV):** 418,865 (58%)
- **Appropriate emergency room visits (Treat & Release and Treat & Admit):** 292,440 (42%)

**Source:**
2. Volume was calculated using the NYS DOH All Payer PPV observed rate multiplied by US Census Population (ACS 2011-2014) for the service area divided by 100
3. SPARCSver2016.05.27adj
4. Internal statistics; Brookdale based on SPARCS data
In January 2013 a different type of community needs health assessment was conducted by a partnership of the Brooklyn Perinatal Network, the Commission on the Public Health System and the New York Lawyers for the Public Interest. The study, *The Need for Caring in North and Central Brooklyn*, used field surveys and focus groups to capture the voices of community residents to determine residents’ perceptions of needs, barriers to care and access to health services in central and northeastern Brooklyn.

A significant number of the recommendations were focused on access to care and reinforced the inadequacy of primary care capacity. They also highlighted the need for dental and mental healthcare and addressed barriers in seeing the doctor either in the emergency room or the physician office. The recommendations were not focused on any particular hospital, nor were there significant issues raised concerning access to hospital services. However, the authors provide a valuable summary of objectives, many of which subsequently appeared as DSRIP requirements:

- Make healthcare facilities more accessible, user-friendly and comfortable
- Improve screening and outreach to diverse populations
- Improve the cultural and linguistic competencies of providers, staff and management
- Improve patient-centered care and customer service training
- Provide evening/weekend hours for primary care
- Increase awareness of and access to low-cost health services/insurance
- Provide financial support of efforts by grassroots community-based organizations (CBOs) to promote community resources
- Coordinate a network of healthcare and social service providers, residents and community-based organizations to address various barriers to care
- Develop a process of engaging community residents for development of messaging and outreach around utilization barriers
- Target services to focus on particular illnesses and communities
increase access to community-based specialty healthcare services

- Work with Access-a-Ride to address transportation procedures, cost and timeliness, especially for seniors and people with disabilities
- Develop a coordinated campaign to work with primary care providers, health clinics and managed care plans to increase the number of providers who accept public health insurance, as well as improving availability of and access to dental and mental health services.

When the need to increase the availability of primary care is coupled with the rapid movement of reimbursement away from fee-for-service to value-based purchasing methodologies, an extended ambulatory care network as part of a coordinated, integrated health system is more badly needed than ever for the hospitals and residents of central and northeastern Brooklyn.

**Community Engagement Meetings**

It was recognized that a community-based engagement effort responsive to the interests and perspective of local communities could strengthen an understanding of the need for a regional approach to transforming the healthcare delivery system and the complex changes that must accompany such an effort. The premise was that only if community residents are engaged and informed can a shared future vision be developed for the institutions they need to support through the difficult transformation efforts.

In order to inform the study, the DOH convened a series of community engagement sessions that included three major activities:

- Surveys of community perceptions were conducted with 232 persons who responded to a structured questionnaire.
- Facilitated small group discussions were held on specific health issues (e.g., cancer, diabetes, asthma, HIV/AIDS, etc.).
- Town hall forums were held where individuals provided testimonials on a wide range of topics, including their vision of what type of healthcare system would best serve them. Town hall meetings were led by the State Commissioner of Health with representatives of the Governor’s office, the DOH and elected officials in attendance, as well as Northwell staff.

The recommendations developed as part of this study were informed and shaped by the eight community engagement meetings where residents shared their insights, experiences and health and service needs and made suggestions for more effectively responding to challenges that the community and hospitals both must confront. During the course of these meetings, which typically had between 80 and 100-plus participants with 30 to 50 speakers, a wide range of topics, issues, concerns and ideas were expressed, in a mostly positive, sometimes cautious, but overall productive fashion. However, there is one word that describes all of the comments made by speakers: passionate! They are passionate about the needs of their community, they are passionate about their hospitals, they are passionate about the challenges that need to be overcome and they are passionate in their desire to see improvements in healthcare for their families, neighbors and community. These strongly positive emotions expressed about every hospital, from its staff, patients and community, will be foundational to future success.

Community members validated the major health issues identified by the community health needs assessments described above. They cited the need for services to address mental health and substance treatment, hypertension, diabetes, obesity, cancer and HIV/AIDS, to name a few. Speakers recognized the devastating impact of violence and food insecurity, hunger, homelessness, poverty and other social factors that undermine community health status. The need for better access to and shorter waiting times for primary and ambulatory care was voiced, and community-based specialty programs
focusing on chronic disease, aging, children, HIV/AIDS and behavioral health were described as inadequate or nonexistent in some communities.

The need for a more robust medical transportation system was identified as a priority since many residents choose to seek healthcare outside of the community (an observation supported by the patient outmigration data). Some areas in the community were described as medical deserts with minimal access to health providers and a resulting overdependency on emergency departments to meet urgent and primary care needs.

Patients dependent on Access-a-Ride for access to healthcare services value its availability but expressed frustration with the inconsistency of the service. An effective intracommunity, interhospital transportation system was identified as a need by many meeting participants.

Many recognized the inadequacy of the present hospital facilities, the poor environment in which care was being delivered and the high priority that should be given to improving the hospital facilities and equipment.

In almost every session, speakers talked about the importance of communication between provider and patient, the need for health education, cultural and language sensitivity and simple courtesy and respect from physicians, nurses and staff. In essence the community was speaking about a myriad of behaviors that form the basis of trust, through one-on-one interactions between patient and physician or the accumulation of many experiences between community and hospital.

Some community members spoke about how some hospitals have lost their trust, and others recognized the recent hard work undertaken by the current management teams to earn back that trust. Most identified the need for services that are typically not provided within the walls of a hospital or in an inpatient setting but rather based in the community in an ambulatory setting such as a doctor’s office or community health center. Inpatient gaps in care were identified for highly specialized services such as a burn unit. The majority of those surveyed indicated that the location of a hospital matters in terms of transportation and convenience. The development of a new integrated health system with centers of excellence at different locations makes providing convenient transportation for patients and staff among these locations even more important.

The community engagement meetings provided a useful forum for community members to voice their support, concerns and vision for what a health system should aspire to become. As noted above, these meetings were the beginning of a process that must continue so that there are additional opportunities to understand how transformation strategies and their execution can be productively shaped by community input.

They are passionate about the needs of their community, they are passionate about their hospitals, they are passionate about the challenges that need to be overcome and they are passionate in their desire to see improvements in healthcare for their families, neighbors and community.
E. Creating a Regional Mission and Healthcare Vision

In order to arrive at a shared mission and vision for the hospitals, it is important to develop an understanding of the operating environment and the economic imperatives they will have to confront collectively as they go forward. In adopting a unified mission and vision, each hospital’s leadership must honor its history of commitment to its communities, emphasize those elements of its culture that permit it to embrace change and selectively forget those elements that undermine its ability to successfully come together with the other hospitals to transform themselves and form a new healthcare delivery system.

It is important to recognize the similarities between the hospitals with respect to their mission and aspirations, as expressed by their current mission and vision statements. The mission statements of the hospitals are focused on responding to and improving the health of the communities they serve. They assert a commitment to excellence in providing health, social and other services in a comprehensive, accessible, efficient and effective manner. All state the importance of focusing on patient satisfaction and partnering with their communities to embrace the cultural diversity in both their approach to patient care and their recruitment of the workforce.

The mission statements express common values, such as compassion, respect and collaboration, and acknowledge their roles in training the next generation of health professionals as well as supporting research. (This is at the core of UHB’s mission statement.) The common denominator in all the mission statements is the recognition that these institutions exist to improve the health of the communities they serve.

This shared aspect of the hospitals’ missions will be put to the test when their board leadership assesses whether coming together to receive significant capital investment and operating subsidy will permit them to more effectively respond to the vexing problems of the communities they serve, or whether each hospital can best improve community health if it operates independently.

The common denominator in all the mission statements is the recognition that these institutions exist to improve the health of the communities they serve.

In recognition of their significant dependence on government payers, a future vision has to recognize the realities of the payment reform initiatives that are being undertaken in order to succeed in the future. The DOH’s A Path Toward Value Based Payment: A New York State Roadmap, the State Health Innovation Plan, DSRIP initiatives and the current policy direction of Medicaid and Medicare reform will require health providers to move from fee-for-service, volume-based reimbursement to value-based payments linked to more effective management of the health of populations. Such value-based payments can compensate providers for conducting activities such as prevention counseling and...
monitoring of chronic disease management that are not currently reimbursed in a fee-for-service system. At the same time, however, value-based payment systems require that providers assume some amount of risk based on the outcomes of the patients in the population they are serving. This evolution to value-based payments will take time to be fully adopted. Value-based purchasing is but one aspect of a comprehensive contracting strategy. Fee-for-service may never fully disappear, and hospitals will also be required to manage health under fee-for-service contracts that may contain modified value-based terms focused on performance rather than assumption of financial risk.

We have attempted to outline a strategic vision for a new health system based upon review of prior studies and recommendations, discussions with the hospitals, the concerns, opinions and ideas voiced through the community engagement process and input from other stakeholder groups. We have summarized below several broad strategic goals that reflect a patient-centric view of how healthcare should evolve in the future for the residents of central and northeastern Brooklyn. (See Figure 12, Strategic Vision for Healthcare Delivery System Transformation.)

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Figure 12
**Strategic Vision for Healthcare Delivery System Transformation**

- **Lower Cost and Cost Management**
- **Better Health**
- **Better Care and Care Management**
- **Adoption of New Knowledge**
- **Engaged Workforce**
- **Community Based Care Continuum**
- **Patient and Community Partnerships**
- **Physician Alignment**
- **Patient Centric Care Model**
**Essential Elements of a Strategic Vision**

**Better Health**
The clinical care model developed by a new health system must not only focus on healthcare and curing illness but also embrace health prevention/promotion and creatively address social determinants of health through innovative partnerships with government and community-based organizations. This will help people take personal responsibility for maintaining and improving their own health and work closely with physician and community partners to help communities improve health.

**Better Care and Care Management**
There must be a sustained commitment to continue to improve outcomes in quality, safety and service. Care will be provided in the most appropriate setting by the most appropriate personnel who work at the top of their licenses.

Care must be coordinated across the continuum around the needs of the patient. New care delivery models and systems must be designed and implemented to monitor and manage care. The new health system should establish and meet goals in the top deciles of performance and transparently report its efforts.

**Lower Cost and Cost Management**
Improving processes, productivity and efficiency is the work that is never done. The health system must right-size and adapt its facilities to the new realities of the marketplace. It must prepare for price transparency and be able to compete on the basis not only of quality but also on price and value. There should be a consolidation of functions and programs to reflect changes in the demand for services and the movement of care into community settings. The new health system must be able to add capacity and build new clinical programs where it has identified gaps in care and community health needs.

**Adoption of New Knowledge**
The health system should seek out partnerships with SUNY Downstate and other partners that support and promote clinical research and discovery. It must seek out partnerships to bring advances in medicine to the communities it serves, at the patient’s bedside, the physician’s office or the patient’s home, as quickly as these advances are proven to be safe and improve health.

**An Engaged Workforce**
There must be continued investment in developing leadership at all levels of the organization and creating an engaged workforce in productive partnerships with the labor organizations who represent its workforce. The transition from inpatient to ambulatory care models will be accompanied by many new challenges that will require new learning and new skills. There must be investment in and support of the continuing education, skill development and personal growth of its workforce and professional staff.

**Physician Alignment**
A critical aspect of growth and transformation is increasing the supply of healthcare providers and creating an aligned medical staff, both employed and voluntary, which is characterized by shared clinical and business goals with respect to clinical and service outcomes.

**Community Based Care Continuum**
The community must have access to innovative sites of care beyond the traditional physician’s office and health center models. This includes access to innovative wrap-around services, such as co-located social services, community-based programs centered on nutrition and food-based education and school-based health centers. Care should be provided where the community works, shops and gets educated. The health system should use available technology to engage and empower its community in receiving care and managing personal health.
Patient and Community Partnerships
Strong partnerships must be forged with patients, the communities in which they reside and other organizations serving those communities to more effectively address socioeconomic determinants of adverse health status, and to empower and engage patients in improving their health.

A Patient-Centric Model of Care
If the study hospitals are successful in thinking differently and commit to working together across the region to transform the clinical and business model of care as outlined above, then from a patient and community perspective, a new health system should create a customer-centric system of care whereby:

• Patients get safe, quality care and have a superior experience receiving services or managing their health.
• Each patient has a doctor and a team of healthcare providers who encourage and empower him/her to participate in the management of his/her health.
• Healthcare professionals are organized as a team who talk to each other to coordinate care. They have accessible data that aids in diagnosis/treatment, prevents medication errors and eliminates duplicate tests and procedures that waste time and money.
• All providers and staff have cultural awareness about the communities they serve and patients they treat.
• Patients are able to easily communicate with the healthcare team in their preferred language.

• All physicians, other providers and healthcare team members can securely access all the health and encounter information about a patient from across the care continuum.
• Patients have shared decision-making responsibility and can get information about their treatment options. Patients’ perspectives are respected, and they are encouraged to work together with the care team to make the best decisions for their health.
• There is a “point person” for patients to call upon to ask questions or to get help. The care team is always available when needed to avoid unnecessary trips to the emergency department and hospitalizations.
• Strong partnerships have been developed with the local and State government and other providers and organizations in the community so patients can get additional support to attain optimal health or manage their conditions and live independently for as long as possible.

An important aspect of any health system’s strength to pursue the strategic vision it adopts is its ability to have situational awareness, approach its plans for success with healthy skepticism and periodically adjust these plans as the environment changes.
In reviewing the governance, management and operations of the five hospitals and identifying options for them to come together, we concluded that we needed to address the State-operated SUNY Downstate Medical College and University Hospital in a different manner than we addressed the four voluntary hospitals in the study. As a public institution, SUNY Downstate has a fundamentally different governance model than nonprofit hospitals have. The employment structures of SUNY Downstate’s medical staff and its public employee unionized workforce are significantly different as well. Accordingly, while it makes sense for University Hospital to collaborate closely with a new health system in central and northeastern Brooklyn, existing laws and regulations preclude the inclusion of SUNY Downstate in the unified governance model proposed for the new system and the full integration of University Hospital in the management organizational structure of the new health system.

Thus, the recommendations in this section of the report that focus on the creation of a new health system for central and northeastern Brooklyn will primarily apply to the remaining four hospitals, although we make periodic references to data for University Hospital throughout the section to illustrate opportunities for regionalization of clinical programs. We do believe that significant mutually beneficial opportunities exist for collaboration between the new health system and both University Hospital and SUNY Downstate College of Medicine. All subsequent references to “the hospitals” in addressing the proposed health system refer to the four not for-profit hospitals in the study. Separate recommendations for SUNY Downstate and University Hospital appear in the following section.

Additionally, as noted in the clinical integration section that follows, Wyckoff, located in northeastern Brooklyn, has a unique market position among the study hospitals in that it does not have a service area overlapping with a service area of any of the other three hospitals serving central Brooklyn. The hospital draws 64% of its patients from Brooklyn and 31% from Queens. This is one of the reasons this study continually defines the service area as the communities of central and northeastern Brooklyn throughout the report.

Wyckoff leadership strongly believes that although it is located in Brooklyn and has financial and operating challenges similar to those of the central Brooklyn hospitals, their market dynamics are different, and they wish to explore alternative arrangements that they believe would comply with the requirements of the Kings County Transformation Program. There may be merit in considering Wyckoff’s perspective. However, for the purpose of the analysis and study recommendations, we assume that all four voluntary hospitals would be part of the new health system. Once the study is released, further discussion of Wyckoff’s position will be required. It will also be important to establish the terms under which Wyckoff could qualify to access the capital funds provided through the Kings County Transformation Program to support
facility investment and program growth, as well as the conditions under which it can continue to receive ongoing operating support from the State.

A series of recommendations is being proposed that may form the foundation of a Transformation Plan for central and northeastern Brooklyn. It is obvious that an undertaking as complex as this will generate many further questions and may require additional analysis and discussion. However, it is important that the hospital leadership, community members, elected leaders and the DOH have the opportunity to fully understand and discuss the recommended changes and activities that must occur in the months and years following the issuance of the report. A summary of the major recommendations for the four voluntary hospitals appears below:

• Establish an independent, unified governance structure by creating a “parent” entity that should serve as the mirror board for all the hospitals. The board of trustees of the new parent entity should comprise a combination of existing hospital board members and new members. The existing boards of trustees of each of the four hospitals should serve on a regional advisory board and are expected to play an active role in advising the parent board of trustees during the transformation period.

• Create an integrated management organizational structure by appointing a management team that should have systemwide responsibility and authority, and develop a shared services structure to oversee the restructuring of the health system and all aspects of operations.

• Develop a clinically integrated model of care based upon patient-centric service lines supported by a consolidated shared services infrastructure. Align incentives with physicians and other partners to maximize the quality, efficiency and effectiveness of care provided.

• Restructure inpatient acute care programs so that they are appropriately sized to more efficiently and effectively meet the projected needs of the community.

• Renovate and expand portions of Brookdale, Interfaith and Wyckoff to continue their roles as community hospitals and to accommodate service line development and restructuring of inpatient bed capacity.

• Develop the Kingsbrook campus to support the primary and specialized ambulatory care and the post-acute rehabilitation, long-term care and chronic illness needs of the service area. Kingsbrook should re-purpose portions of its campus to address social determinants of health, including the provision of affordable, permanent supportive and transitional housing for the medically frail and others in need of such housing. The campus can also serve as the location for new and expanded ambulatory care programs.

• Engage and build programmatic bridges with SUNY Downstate and University Hospital in the development of clinical service lines and the ambulatory network.

• Develop a robust, geographically dispersed ambulatory care network, to enhance the availability of primary and specialty care throughout the service area and decrease reliance on emergency departments.

• Commit to training all current unionized workforce impacted by the Transformation Plan and placing them in other positions within the new health system.

• Partner with labor representatives to retrain the workforce to provide culturally competent care in a new patient-centric, ambulatory care model promoting health and wellness.

• Continue to partner with the Maimonides PPS to achieve the DSRIP objectives of reducing avoidable inpatient and emergency department utilization and preparing for value-based purchasing. Brookdale should pursue the opportunity to become a member of the Maimonides PPS.
• Evolve the clinical and business model to succeed under modified fee-for-service and value-based payment models, adopting principles set forth in the DOH’s *A Path Toward Value Based Payment: A New York State Roadmap and the State’s Health Innovation Plan*.

• Develop internally and/or partner with an established health system to acquire the capabilities to manage and improve the health of populations so as to reduce overall unnecessary utilization and intensity of care.

• Create an integrated care management, community health and engagement infrastructure to better address social determinants of health.

• Designate the service area as a Health Enterprise Zone through a new public-private partnership to restructure the coordination and delivery of government-supported safety net services in the service area.

• Identify areas of need and make critical infrastructure investments in technology, equipment and facilities to provide a strong foundation for program growth and to adapt the health system to thrive in the new world of payment reform and population health, particularly with respect to government payment programs.

Each of these recommendations will be discussed in greater detail in the sections that follow.

...it is important that the hospital leadership, community members, elected leaders and the DOH have the opportunity to fully understand and discuss the recommended changes and activities that must occur in the months and years following the issuance of the report.
The four hospitals possess a governance structure typical of independent community hospitals. They are governed by voluntary boards of trustees that vary in size from nine to 25 persons. Although these boards and management have tried to develop long-term strategic plans, a significant focus of their strategy is of necessity “keeping the doors open,” and a disproportionate amount of governance and management time is spent on finances, managing cash flow to pay employees and vendors, and ensuring that the hospital continues to receive the necessary operating support from the State.

It is important to embrace a regional holistic view of health system governance and operations. Northwell’s experience has demonstrated that corporate relationships/partnerships that do not have a long-term commitment to a collective vision are difficult to maintain since the ability to break apart is relatively easy occur. A unified board governance model is essential to focus and maximize value on a regional basis to make the changes needed for the hospitals to transform and adapt to the changing realities of the local healthcare environment.

This new partnership should be shaped by a shared vision of the future that drives strategic decisions and investments supporting the hospitals and other providers of central and northeastern Brooklyn, including community-based organizations. The new health system will require tight linkages between the acute inpatient setting and primary/specialty ambulatory care and an increased reliance on post-acute ambulatory care and home settings as appropriate alternatives to hospitalization.

**Recommendation #1 – Create a new regional health system with a unified mission and statement of strategic vision.**

It is important that the current hospital board members understand the need to make what is arguably the most significant change in the history of their institutions: agreeing that the communities they serve would realize greater value if the hospitals were to come together in a new organizational structure. This change involves the creation of a new regional health system as the parent entity and sole voting member of the four hospitals, as well as a new subsidiary corporation formed to house a consolidated shared services infrastructure.

The new regional health system must adopt a unifying mission statement. This statement should reflect the long-standing commitments of each hospital to its community and should focus on continuous and sustained improvement of the health of all the communities they serve collectively by providing safe, effective, quality care in a respectful and sensitive manner, accompanied by outstanding service centered around the needs of patients.
Recommendation #2 – Establish a new board of trustees for the new regional health system, which also serves as a mirror board for all the hospitals.

It is clear to us and to the authors of every significant, relevant preceding study that no one hospital can independently confront the challenges of the emerging healthcare forces without a commitment to embracing a regional vision of providing healthcare services and pursuing a coordinated clinical, operational and capital investment strategy. Without significant changes in the governance, organizational structure and management structure of the four hospitals, the provision of healthcare to the service area communities will continue to be fragmented and to require an ever-growing subsidy to support a failing model of care from which the community and the State realize little meaningful value.

Therefore, it is proposed that a new governance model be developed to incorporate the stand-alone hospitals into a newly established entity, which will be the steward of subsequent transformative investments and continued operating subsidy by the State, and which will provide greater value to the communities the hospitals serve. The creation of a new, strong and effective governance model is fundamental to the development of a clinically integrated system of care and service delivery. History has documented that when independent hospitals come together and assume responsibility for serving a broad geography, regional solutions can be reached that not only maintain access but enhance overall programmatic depth and quality.

The current independent hospital boards should be replaced by an Article 28 regional parent board, which will serve as the mirror board of all of the hospitals as well. These will be considered “mirror boards” because the members will be identical to the members of the parent board. The new regional parent board should be composed of an equal number of representatives from each hospital plus a majority of newly recruited trustees so that the board functions as a non-constituency parent. The new board will be responsible for setting policy, overseeing operations and monitoring activities. Current members of the four independent hospital boards should be invited to serve on advisory boards, which will give them the opportunity to provide continuity and community insight to the parent board during the transition period.

Recommendation #3 – Include current board leadership on the parent board of trustees and recruit new board members who will constitute a majority of the board.

The transformation of governance, management and operations is extraordinarily complex and must occur as part of a thoughtful, deliberate process. The process is about the management of change, which is really about educating people as to the need for change and aligning multiple constituencies to embrace a future vision and the actions required to achieve that vision. The development of a new, unified governance structure will be accompanied by many concerns that have to be carefully managed as the four independent hospitals transition to a new governance and operating model. It is critical that dedicated trustees and stakeholders who have been integral up to this point feel respected by both the process and the outcome.
Many of the current trustees have strong ties to and the support of their communities. They possess valuable knowledge and experience, which should be incorporated into the deliberations of the new board. It is critical to have fiduciary trustees who are fully committed and engaged and are able to understand and evaluate the range of critical issues and risks across the enterprise and provide helpful input.

Given that the constituent hospitals have never worked together in any substantive fashion, it is important that the governance formation process be carefully and thoughtfully managed, and that multiple opportunities be provided for current board leadership and new board members to get to know one another as they arrive at a detailed understanding of the Transformation Plan. The new board will be responsible for adopting a new mission statement and for validating a common vision preliminary to the initiation of transformation activities. If the governance is not unified at the outset it will be virtually impossible for the implementation of the Transformation Plan to be successful.

Just as it is important to appoint current board members to the new board, it is important to create a non-constituency governance structure and to incorporate board members who never served on one of the four hospital boards. These individuals must be committed to acting with a broader regional perspective so that strategy and investment decisions are prioritized and made in the best interests of the collective service area.

It is important to recognize that there will be a need for some additional forms of knowledge and expertise on the board. The board must possess real, first-hand knowledge about the communities that it serves, as well as expertise about the key businesses of the enterprise: clinical care, finances, construction, communication/marketing, real estate, insurance, education and so forth. It would also be helpful to include persons who served or are serving in senior positions in complex organizations that have undergone significant organizational changes. Thus, the board should comprise a varied and diverse group that represents the people and communities served and also includes individuals with a broader perspective.

**Recommendation #4 – Appoint systemwide management to execute implementation of the Transformation Plan.**

The new health system should be professionally managed and clinically led. Systemwide management should be appointed to implement the Transformation Plan adopted by the new parent board. The board should develop an action plan and establish and monitor critical operating metrics for achievement of milestones related to quality of care, operating and financial performance and community health status.

In appointing a management team, the board should initially draw upon the strengths of the current management leadership. The magnitude of the proposed changes requires appreciation for and sensitivity to the history and culture of each institution. It is important to value the bridges and trust that each hospital’s management group and clinical leaders have established within its service area communities and with the stakeholder groups impacted by these changes. These relationships are invaluable assets that will contribute to the successful implementation of the Transformation Plan.
To a great degree, the retention and roles of senior management are dependent upon individuals’ attitude and willingness to embrace and commit to the objectives of the partnership and its strategic direction. Those who succeed will do so because they realize they are part of a larger health system and are able to transition to a highly matrixed and collaborative organizational model of management. There should be no desire to make changes for the sake of making changes. The transition period will permit ample opportunity for the current management leaders to successfully adapt their current roles and responsibilities to align with the strategic direction and imperatives identified by the health system’s board of trustees.

## Shared Services

### Consolidation Opportunities

An operational review was conducted at each hospital to identify key opportunities to pursue clinical integration and attain operating efficiencies if the independent hospitals were to form a new regional health system. This aspect of the study relied on the experience, expertise and capabilities Northwell has developed in creating New York State’s largest clinically and administratively integrated health system. A team of over 50 clinicians and managers, who had conducted similar operational analyses at multiple hospitals, was assembled to conduct the assessment. These teams relied on extensive data provided by the study hospitals and conducted on-site visits and follow-up calls with their counterparts to identify opportunities in support of the study objectives.

The operational teams deployed by Northwell Ventures, the healthcare consulting services division of Northwell, proposed recommendations, identified required investments and quantified a range of expected outcomes or potential savings. We did not conduct a detailed assessment of facilities and relied on master facility plans and associated project costs to the extent that they were available. When they were not available, Northwell developed capital estimates based upon its own experience. The operating and capital implications of the recommendations were used to project a five-year financial model of operating performance in the proposed new organizational structure. These projections are discussed more fully in the section entitled Financial Model and Operating Projections.

If the hospitals were to come together, many opportunities were identified to attain clinical and administrative management operating efficiencies and improved outcomes. The majority of nonclinical operating efficiency opportunities can be realized through the development of a systemwide shared services infrastructure. The health system’s board and management will need to determine the level of assistance it will require to organize and develop its shared services capabilities.

We have highlighted in Appendix C examples of some of the opportunities and how these services might be organized if the health system adopted a systemwide shared services operating structure.
Recommendation #5 — Establish a systemwide shared services organization.

There are numerous examples of opportunities to achieve operating and organizational efficiencies through the consolidation of administrative and clinical programs. Further, the creation of a systemwide shared services organization and the organization of capabilities to support the strategic objectives of a Transformation Plan can be structured to benefit not only the four hospitals but also University Hospital, the hospitals of Health + Hospitals (H+H) and other hospitals in the region.

It is recommended that the hospitals create a cooperative hospital services organization that would function as an Internal Revenue Code (Code) section 501(c)(3) organization described in Code section 501(e). The hospitals may also participate in already existing tax-exempt cooperative hospital services organizations. In addition, the hospitals could form a limited liability company or companies to perform, on a shared services basis, those functions that are not included in Code section 501(e).

Code section 501(e) was enacted to permit two or more Code section 501(c)(3) hospitals and governmental hospitals to increase efficient operations by combining specific administrative support and clinical functions within a tax-exempt cooperative hospital services organization. Governmental hospitals such as University Hospital and Kings County Hospital Center (KCHC) are also permitted to be members, thereby further sharing overhead costs and benefits of all members through organizational efficiencies.

Services that could be consolidated and provided on a cooperative, tax-exempt basis include:

- Data processing and information technology
- Group purchasing (including purchasing insurance on a group basis)
- Warehousing
- Billing, collection and coding (revenue cycle management)
- Dietary and food services
- Clinical (including ambulatory network development)
- Industrial engineering (facility development) and project management
- Laboratory
- Printing
- Communications
- Records center
- Personnel (including selection, testing, training and education)

In addition to services for its member hospitals, the cooperative may transact business with participants that do not have voting rights. Thus, the provision of services may be expanded to other providers or organizations to realize additional operating efficiencies.
The qualifying tax-exempt cooperative described above is permitted to only provide the designated services and may contract with other entities to support the cooperative in its activities. The hospitals may also still combine their efforts to consolidate other functions not designated under the cooperative structure by establishing one or more limited liability companies for services such as finance, accounting, managed care contracting and other management service organization functions if there is need to do so beyond the members of the new health system.
F.2. Clinical Integration

The goal of restructuring inpatient services will be to focus resources that will achieve the strategic vision for a new health system. The restructuring of the hospitals should enable the new health system to improve quality, safety and service; improve processes, productivity and efficiency; fill identified gaps in health services; grow programs; and create clinically integrated centers of excellence.

Comprehensive programs and services associated with specific diagnostic conditions and age groups can be offered regionally through the development of a clinically integrated service line. The service line can also provide a meaningful graduate medical education (GME) training and educational experience for the health system and opportunities for Downstate’s medical school and other allied health schools. Additionally, the health system can create a foundation upon which to develop a clinical research program to study how to best mitigate the impact of social determinants accompanying the provision of health services.

Overview of Hospitals

In order to better understand the recommendations for clinical integration, it is necessary to provide an overview of the study hospitals and regional service area of central and northeastern Brooklyn.

The four voluntary hospitals are currently licensed for 1,444 beds and are staffed for 1,040 beds. In 2015, the collective average daily census (ADC) of these hospitals was 788 and the occupancy rate on staffed beds was 75.7 percent. When including University Hospital, the staffed bed occupancy dropped to 73.4 percent on an ADC of 997 beds. The occupancy rate varies significantly among these hospitals, however, as shown in Figure 13, Inpatient Bed Statistics, 2015.

The service area outlined in Figure 14, Demographic Characteristics of Service Area and Other Brooklyn, 2015, represents the zip codes that account for approximately 80 percent of the patient origin of the study hospitals. There are over 1.2 million persons residing in the service area, which represents 44 percent of Brooklyn’s total population and is composed of 85.2 percent minority residents as compared to 45.4 percent in other Brooklyn communities.

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<th>Subtotal</th>
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Source:
1. NYS DOH hospital profiles (accessed 8-22-2016)
2. Study hospitals internal statistics.
### Demographic Characteristics of Service Area and Other Brooklyn, 2015

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</tr>
<tr>
<td>Asian/Other</td>
<td>6.8%</td>
<td>21.0%</td>
</tr>
<tr>
<td><strong>Age</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>00-17</td>
<td>24.5%</td>
<td>22.8%</td>
</tr>
<tr>
<td>18-44</td>
<td>40.7%</td>
<td>40.1%</td>
</tr>
<tr>
<td>45-64</td>
<td>23.8%</td>
<td>23.4%</td>
</tr>
<tr>
<td>65-Plus</td>
<td>11.0%</td>
<td>13.7%</td>
</tr>
<tr>
<td><strong>Inpatient Payer Mix</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Medicaid</td>
<td>45.4%</td>
<td>33.9%</td>
</tr>
<tr>
<td>Medicare</td>
<td>30.0%</td>
<td>34.9%</td>
</tr>
<tr>
<td>Commercial</td>
<td>18.9%</td>
<td>22.8%</td>
</tr>
<tr>
<td>Self-pay¹</td>
<td>5.7%</td>
<td>8.4%</td>
</tr>
</tbody>
</table>

**Note:**
1. Includes all other payers.

**Source:**
2. SPARCSver2016.05.27adj
The service area contains a younger population compared to the rest of Brooklyn. Residents ages 0-17 make up 24.5 percent of the service area population compared to 22.8 percent in remaining Brooklyn. Conversely, the service area has a smaller proportion of residents ages 65 and over relative to other Brooklyn communities.

Wyckoff has a unique position among the study hospitals. Figure 15, Primary Service Area Overlap Among Hospitals for Medical/Surgical Patients, 2015, shows the overlap of patients in the primary service area, defined as 50 percent of each of the study hospitals’ patient origin for medical/surgical discharges. The data illustrates that Wyckoff does not share overlapping zip codes with the other hospitals. This has important implications for maintaining access for area residents who rely on Wyckoff for hospital services.

This will be discussed in greater detail in the recommendations for reconfiguration of hospital services.

Approximately 90 percent of the service area population has health insurance coverage of some type: 47 percent are enrolled in the Medicaid program, 33 percent have commercial insurance, approximately 10 percent are Medicare beneficiaries and 10 percent are classified as self-pay/no-pay. Although the hospitals currently have a relatively low inpatient commercial payer mix, the presence of commercially insured patients in the service area provides a strategic opportunity to diversify the sources of patient revenue. (See Figure 16, Service Area Insurance Coverage and Payer Mix, 2015.) When comparing the inpatient payer mix for the service area residents by hospital, other Brooklyn and Manhattan hospitals...
attract a higher percentage of commercial patients and a lower percentage of persons covered by government payers than the study hospitals. (See Figure 17, Service Area Inpatient Payer Mix by Hospital, 2015.) The four voluntary hospitals had approximately 11 percent commercial inpatient discharges, while commercial and other non-government payer discharges at other Brooklyn hospitals and Manhattan hospitals totaled 23 percent and 33 percent in 2015, respectively.

The service area residents accounted for 142,111 total discharges in 2015, of which 24 percent occurred in the four voluntary hospitals, 7 percent in University Hospital and 19 percent in the two H+H hospitals (Woodhull and Kings County). The remaining 50 percent of residents left the service area (outmigrated) and used other hospitals in Brooklyn, Manhattan or elsewhere. (See Figure 18, Share of Service Area Total Discharges by Hospital, 2015.)

### Figure 16
Service Area Insurance Coverage and Payer Mix, 2015

<table>
<thead>
<tr>
<th></th>
<th>Medicaid Managed Care</th>
<th>Medicaid FFS</th>
<th>Medicaid Sub-Total</th>
<th>Medicare</th>
<th>Commercial</th>
<th>Self-Pay/Other</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Insurance Coverage</td>
<td>Service Area</td>
<td>Remaining</td>
<td>Service Area</td>
<td>Remaining</td>
<td>Service Area</td>
<td>Remaining</td>
<td>Service Area</td>
</tr>
<tr>
<td>Medicaid Managed Care</td>
<td>473,030</td>
<td>483,098</td>
<td>38.0%</td>
<td>33.6%</td>
<td>45,158</td>
<td>38,105</td>
<td>31.7%</td>
</tr>
<tr>
<td>Medicaid FFS</td>
<td>115,598</td>
<td>103,024</td>
<td>9.3%</td>
<td>7.2%</td>
<td>19,325</td>
<td>11,773</td>
<td>13.6%</td>
</tr>
<tr>
<td>Medicaid Sub-Total</td>
<td>588,628</td>
<td>586,122</td>
<td>47.2%</td>
<td>40.8%</td>
<td>64,483</td>
<td>49,878</td>
<td>45.3%</td>
</tr>
<tr>
<td>Medicare</td>
<td>130,636</td>
<td>189,680</td>
<td>10.5%</td>
<td>13.2%</td>
<td>42,650</td>
<td>51,176</td>
<td>30.0%</td>
</tr>
<tr>
<td>Commercial</td>
<td>405,713</td>
<td>550,708</td>
<td>32.6%</td>
<td>38.3%</td>
<td>26,812</td>
<td>33,455</td>
<td>18.9%</td>
</tr>
<tr>
<td>Self-Pay/Other</td>
<td>121,368</td>
<td>110,131</td>
<td>9.6%</td>
<td>7.7%</td>
<td>8,166</td>
<td>12,263</td>
<td>5.8%</td>
</tr>
<tr>
<td>Total</td>
<td>1,246,345</td>
<td>1,436,641</td>
<td>100.0%</td>
<td>100.0%</td>
<td>142,111</td>
<td>146,772</td>
<td>100.0%</td>
</tr>
</tbody>
</table>

**Source:**
1. Medicaid Information Service of New York; Salient: FFS = Fee for service.
2. 2014 American Community Survey 65+ population projected forward for 2015 and 2020 based on Truven 65+ population projections.
3. Truven Insurance Estimates exchange adjusted; population adjusted so total population matches to Census.
5. 2014 American Community Survey projected forward for 2015 based on Truven population projections.
6. SPARCSver2016.05.27adj

### Figure 17
Service Area Inpatient Payer Mix by Hospital, 2015

<table>
<thead>
<tr>
<th></th>
<th>2015 Population</th>
<th>Inpatient Discharges6</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Service Area</td>
<td>Remaining Brooklyn</td>
</tr>
<tr>
<td><strong>Insurance Coverage</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Medicaid Managed Care</td>
<td>47.4%</td>
<td>36.7%</td>
</tr>
<tr>
<td>Medicaid FFS</td>
<td>47.2%</td>
<td>36.7%</td>
</tr>
<tr>
<td>Medicaid Sub-Total</td>
<td>63.0%</td>
<td>21.5%</td>
</tr>
<tr>
<td>Medicare</td>
<td>36.7%</td>
<td>37.1%</td>
</tr>
<tr>
<td>Commercial</td>
<td>39.1%</td>
<td>23.2%</td>
</tr>
</tbody>
</table>

**Note:**
1. Includes all other payers.

**Source:** SPARCSver2016.05.27adj
There was a higher acuity level as measured by case mix index (CMI) of outmigrating patients than of patients who used hospitals located within the service area. Case mix index is also a measure of revenue received. As seen in Figure 19, Service Area Case Mix Index, 2015, other Brooklyn hospitals and Manhattan hospitals had a case mix index of 1.39 and 1.66, respectively while the H+H hospitals and study hospitals were 1.16 and 1.29, respectively. The four study hospitals met the surgical needs of only 17.5 percent of service area residents. University Hospital and the two H+H hospitals captured 5.7 percent and 11.1 percent, respectively, while the remaining two-thirds (66 percent) of service area residents outmigrated for surgery. (See Figure 20, Service Area Inpatient Surgical Share, 2015.)

As was noted in Figure 3 earlier, outmigration is most pronounced among commercially insured residents, with 72 percent leaving the service area for inpatient care. Even government-insured patients have relatively high outmigration, with 49 percent of Medicare and 43 percent of Medicaid patients leaving the service area for inpatient care.

**Service Area Total Discharges, 2015**

<table>
<thead>
<tr>
<th>Hospital</th>
<th>Discharges</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>All Other</td>
<td>14,605</td>
<td>10%</td>
</tr>
<tr>
<td>Study Hospitals</td>
<td>44,255</td>
<td>31%</td>
</tr>
<tr>
<td>H+H Kings County</td>
<td>18,999</td>
<td>13%</td>
</tr>
<tr>
<td>Wyckoff</td>
<td>10,031</td>
<td>7%</td>
</tr>
<tr>
<td>Kingsbrook</td>
<td>6,020</td>
<td>4%</td>
</tr>
<tr>
<td>Interfaith</td>
<td>6,265</td>
<td>5%</td>
</tr>
<tr>
<td>Brookdale</td>
<td>11,622</td>
<td>8%</td>
</tr>
<tr>
<td>Other Manhattan Hospitals</td>
<td>10,419</td>
<td>7%</td>
</tr>
<tr>
<td>Other Brooklyn Hospitals</td>
<td>32,696</td>
<td>23%</td>
</tr>
<tr>
<td>H+H Woodhull</td>
<td>7,824</td>
<td>6%</td>
</tr>
<tr>
<td>NYPH-Weill</td>
<td>2,765</td>
<td>2%</td>
</tr>
<tr>
<td>Mount Sinai</td>
<td>2,713</td>
<td>2%</td>
</tr>
<tr>
<td>Mount Sinai-Beth Israel</td>
<td>3,886</td>
<td>3%</td>
</tr>
<tr>
<td>H+H Bellevue</td>
<td>3,949</td>
<td>3%</td>
</tr>
<tr>
<td>Health + Hospitals</td>
<td>26,823</td>
<td>19%</td>
</tr>
</tbody>
</table>

**Note:** Excludes newborns.  
**Source:** SPARCSver2016.05.27adj
Percentages alone underrepresent the significance of the Medicaid outmigration, as Medicaid has the greatest number of patients (almost 28,000), more than Medicare (21,000) and commercial (19,000), who leave the service area for inpatient care.

The overall inpatient market share for each major service appears in Figure 21, Service Area Inpatient Share by Major Service, 2015. The figure indicates that, with one exception, service area residents are not dependent on any one hospital. The exception is rehabilitation, with a 48 percent share, which exceeds the overall service area market share of 31 percent.

The average daily census of the hospitals appears in Figure 22, Inpatient Average Daily Census, 2015. When deconstructed into major service lines it is possible to develop a better understanding of the challenges these hospitals confront and the importance of focusing resources to develop programs needed in the service area.

Note: Case Mix Index based on Medicare; CMI applied to all payers.
Source: SPARCSver2016.05.27adj
In almost every service currently offered by the study hospitals, we believe there are opportunities and benefits to be found in regionalizing and restructuring the clinical services. A few examples, surgical, women and children’s and behavioral health services, are discussed below.

**Surgical Services**

Surgery is a good example of a service line that should be provided on a systemwide basis. The ADC of inpatient surgery for the four study hospitals is 137 beds; with University Hospital, the surgical ADC would be 184 beds. Combined, the total number of surgical cases performed at the hospitals was almost 23,000 cases in 2015. Almost 15,000 cases, or 66 percent of total surgeries, were performed on an outpatient basis. (See Figure 23, Surgery Capacity and Case Volume, 2015.) Regionalization of inpatient surgical services illustrates the opportunities if the hospitals work together. Currently, they are duplicating their resources and expenses as they compete with each other to recruit surgeons onto their medical staffs or employ those surgeons either full time or as fractional part-time or sessional staff in order to provide adequate coverage. They also compete with each other for surgical and post-surgical intensive care nurses and other support staff.

Moreover, the surgical suite is arguably the most expensive area within the hospital. Each hospital has to staff, equip, clean and maintain an operating suite and recovery area, have an after-hours call schedule, purchase and

![Figure 21 Service Area Inpatient Share by Major Service, 2015](attachment:Figure_21_Service_Area_Inpatient_Share_by_Major_Service,_2015.png)
Figure 22
Inpatient Average Daily Census, 2015

Note: Excludes normal newborns.
Source: Study hospitals internal statistics.

Figure 23
Surgery Capacity and Case Volume, 2015

Note: Operating room cases only.
Source: Study hospitals internal statistics.
sterilize instrumentation, maintain inventory of needed supplies and make available related services to provide a safe environment in which to render care. If these small, fragmented surgical programs were organized differently and inpatient surgery were regionalized, capital and operating subsidy could be focused on developing state-of-the-art surgical and support facilities, which in turn would enhance efforts to recruit surgeons and support development of programs and services that residents disproportionately outmigrate for.

Of the three central Brooklyn hospitals (Brookdale, Interfaith and Kingsbrook), Brookdale is a prime location to invest capital to provide sufficient capacity to regionalize high-risk and low-volume surgical services. As Figure 23 shows, Brookdale, with 12 operating rooms, can accommodate the inpatient surgery cases of Kingsbrook and the complex, low-volume surgery of Interfaith. As a community hospital, Interfaith would continue to provide access to surgical care but would refer specified high-risk procedures to a regional program. It would also continue to provide ambulatory surgery to residents of the surrounding communities. Kingsbrook would continue to provide ambulatory surgical services as a dedicated ambulatory surgery center. Wyckoff has the second highest number of surgical cases, almost 6,000; with a modest facility investment, it can be strengthened to serve as a platform for growth of surgical services in the northeastern region. These hospitals will also require a tertiary partner to provide access to some surgical services that will not be available at the community hospitals (e.g., cardiac surgery). Creating a referral pathway to University Hospital for tertiary care can also establish bridges to partner with Downstate to support access to subspecialist care.

As with the surgery illustration, both hospitals have to provide staff and invest in facilities to offer a safe environment and be prepared to accommodate the inevitable peaks and valleys of volume. Particularly with obstetrics, the argument can be made that a single higher-volume program not only would provide economies of scale but also would potentially enhance quality and outcomes. For example, a higher-volume program can support high-risk maternal and neonatal care. A newly renovated patient-centric facility with single patient rooms and other patient amenities can provide a vital community service and provide incentives to enhance collaboration among the study hospitals by creating a comprehensive women and children’s service in central Brooklyn. As noted above, obstetrics is one of the high-volume opportunities for the study hospitals to attract patients who currently outmigrate from the service area.

**Behavioral Health Services**

Utilization of behavioral health services is extraordinarily high in the service area; some communities have the highest rate of psychiatric hospitalizations per 100,000 population in New York City. (See Figure 25, Inpatient Psychiatric Discharges per 100,000 Population, 2015.) The population utilizing behavioral health services is characterized as experiencing enormous psychosocial distress, with high rates of unemployment, substance abuse and violence. Furthermore, within the service area there are a relatively large number of adult homes, homeless shelters and long-term residential care facilities. (See Figure 26, Housing and Homeless Resources and Medicaid Beneficiaries.)

**Women and Children’s Services**

Obstetrics and pediatrics are also service lines that could be regionalized in central Brooklyn. The two programs with a low number of births are operated by Brookdale and University Hospital. In 2015, University Hospital reported 1,258 deliveries and Brookdale 1,053 deliveries. Expressed another way, on average there were slightly more than three babies born at University Hospital and almost three at Brookdale each day. Pediatrics had the same number of discharges at University Hospital, occupying 3.9 beds per day, and at Brookdale, with an average daily census of 2.8 beds. A combined women’s and children’s program could strengthen the service lines and provide a patient population to support more robust specialty programs. (See Figure 24, Obstetric and Pediatric Discharges, 2013-2015.)
Another promising high-need opportunity that highlights the benefits of clinical integration is creating a regional behavioral health service line. Brookdale, Interfaith and Kingsbrook all provide behavioral health services, operate inpatient units and, to varying degrees, operate large ambulatory care programs. (See Figure 27, Behavioral Health Statistics, 2015.)

Brookdale operates a licensed comprehensive psychiatric emergency program (CPEP) with approximately 1,000 visits per year. The CPEP is associated with a mobile crisis service that is deemed the “superglue” of their program in terms of tracking patients who have missed follow-up appointments and linking patients back to outpatient engagement. Brookdale’s department of psychiatry operates what they call a linkage office, which helps facilitate connections to community-based mental health programs. Discharge from the CPEP is associated with about a one-in-10 chance of the patient engaging in an outpatient appointment; this increases to a 50 percent chance if the linkage office is mobilized.

Kingsbrook’s adult inpatient unit was developed when Interfaith closed an adult inpatient unit and there was concern that if Interfaith did not emerge from bankruptcy, the service area would experience a behavioral bed need crisis. Thus, the DOH approved an additional adult general psychiatry unit at Kingsbrook, which leveraged its expertise in operating a geriatric psychiatry unit. As a consequence of its closed unit, Interfaith has additional capacity to expand its inpatient behavioral programs.

Interfaith also provides a more comprehensive continuum of behavioral health services, which includes both inpatient and outpatient substance abuse programs as well as more intensive “day hospital” ambulatory services.
Figure 25
Inpatient Psychiatric Discharges Per 100,000 Population, 2015

![Bar chart showing inpatient psychiatric discharges per 100,000 population for Bronx, Service Area, Remaining Brooklyn, and NYC 5 Boroughs.]

Source: SPARCS ver206.05.27adj
American Community Survey 2014 projected to 2015 based on Truven projected growth. See Appendix for Psychiatric definition.

Figure 26
Housing and Homeless Resources and Medicaid Beneficiaries

![Map showing various housing and homeless resources and Medicaid beneficiaries across Brooklyn.]

Interfaith operates a 20-bed inpatient polysubstance withdrawal (detox) unit that serves adults 18 and over, primarily admitted through the ED, who require detoxification. The demand for the unit is greater than its capacity, and so patients are referred elsewhere regularly. Interfaith also operates a 20-bed substance abuse rehabilitation unit licensed by the state Office of Alcohol and Substance Abuse Services (OASAS), which provides short-term residential stays to maintain abstinence. The residential program operates at high occupancy with a 28-day length of stay.

With respect to housing for mentally ill patients, Interfaith has a 44-bed licensed Level II supportive apartment treatment program, operating scattered apartments in the Bedford-Stuyvesant, Crown Heights and East New York sections of Brooklyn. These beds stay full, for up to two years’ duration; however, at times it is very difficult to move patients to alternative settings, indicating the significant need for step-down housing in the community. This illustrates how the development of a substantial amount of permanent supportive housing will expand the continuum of care in central and northeastern Brooklyn.

Along with its recently approved psychiatry residency program and its participation in a number of clinical research studies, Interfaith is meeting critical community needs and provides a strong foundation upon which to build a clinically integrated, regional behavioral health service line. (See Figure 28, Behavioral Health Service Line Programs.)

Valuable behavioral health programs have been developed at each institution. However, they all share the challenge of recruitment; they have developed a variety of approaches to maintain adequate staffing levels. There is frustration with their inability to have sufficient housing available to support their patients over time. The lack of supportive housing contributes to the “revolving door” nature of the service.

Considerable strengths exist throughout the region, including geriatric psychiatry and electroconvulsive therapy (ECT) at Kingsbrook; child/adolescent services at Brookdale; a CPEP at Brookdale with associated holding beds, mobile crisis team and community linkage program; inpatient/outpatient substance abuse services at Interfaith; and educational/training/academic interest and commitment at both Brookdale and Interfaith. As noted above, the geriatric psychiatry program and adult psychiatry program can

<table>
<thead>
<tr>
<th>Behavioral Health</th>
<th>Brookdale</th>
<th>Interfaith</th>
<th>Kingsbrook</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Licensed Beds¹</td>
<td>61</td>
<td>160</td>
<td>55</td>
<td>276</td>
</tr>
<tr>
<td>Staffed Beds²</td>
<td>61</td>
<td>130</td>
<td>55</td>
<td>246</td>
</tr>
<tr>
<td>Discharges²</td>
<td>2,079</td>
<td>3,623</td>
<td>1,038</td>
<td>6,740</td>
</tr>
<tr>
<td>Length of Stay²</td>
<td>7.3</td>
<td>10.9</td>
<td>14.6</td>
<td>10.4</td>
</tr>
<tr>
<td>Average Daily Census</td>
<td>41</td>
<td>108</td>
<td>41</td>
<td>191</td>
</tr>
<tr>
<td>% Occupancy of Staffed Beds</td>
<td>68.0%</td>
<td>83.4%</td>
<td>75.4%</td>
<td>77.8%</td>
</tr>
<tr>
<td>Behavioral Health Ambulatory Care Visits²</td>
<td>37,514</td>
<td>67,279</td>
<td>2,610</td>
<td>107,403</td>
</tr>
<tr>
<td>Methadone Maintenance Treatment²</td>
<td>–</td>
<td>21,876</td>
<td>–</td>
<td>21,876</td>
</tr>
</tbody>
</table>

Source:
1. NYS DOH Hospital Profiles
2. Study hospitals internal statistics

Figure 27
Behavioral Health Statistics, 2015
be accommodated at Interfaith. The CPEP could similarly be relocated to Interfaith and operated regionally to serve all the facilities as part of an emergency department expansion project at Interfaith. Residency training could be consolidated in a joint Brookdale/Interfaith program, thereby creating operational efficiencies and providing exposure to the most heterogeneous and comprehensive clinical populations.

**Post-Acute Care**

Two of the study hospitals, Brookdale and Kingsbrook, operate residential healthcare facilities (RHCFs), and Brookdale operates an assisted living facility across the street from its main hospital campus. Brookdale’s Schulman and Schachne Institute (SSI) for Nursing and Rehabilitation contains 448 beds that provide specialized post-acute services: HIV (120 beds); ventilator-dependent unit (28 beds); pulmonary care (40 beds); sub-acute rehabilitation (88 beds); Alzheimer’s/dementia care (44 beds); and complex long-term care (128 beds). SSI has received a CMS five-star facility rating for the past five years, was twice named a “Top National Nursing Home” by U.S. News & World Report and received the 2014 Baldrige National Bronze Quality Award in 2014 and the Silver Award in 2015. The Rutland Nursing Home, on the Kingsbrook campus, is a 466-bed long- and short-term care facility. It operates a specialized 30-bed unit for ventilator-dependent patients and a 32-bed pediatric long-term care unit for children with severe developmental or metabolic disorders. According to data provided by the DOH, both facilities report, as of June 2016, high occupancy rates, Rutland at 94.8 percent and SSI at 96.7 percent. By comparison, the occupancy rate of RHCFs in Kings County was 96 percent and for New York City it was at 95 percent as of June 2016.

Post-acute care is an essential component of the care continuum in order to effectively manage the health of populations. In a value-based reimbursement environment, health systems that successfully develop effective clinical linkages with post-acute providers will be able to transition patients into more cost-effective settings to receive continuing care. This is particularly important for certain clinical conditions, such as joint replacement, where payments are bundled for an entire episode of care that spans inpatient, rehabilitation and home care. An episode would start three days prior to an acute hospitalization, include the hospital stay and cover the first 30 days following discharge from acute care.
Availability of post-acute services also provides an opportunity for greater integration with community-based organizations for better management of chronic conditions, including age-related frailty. The post-acute care continuum will need to be aligned with programs addressing social determinants of health; this approach should particularly benefit those residents insured by Medicare and Medicaid programs.

Each year more than 40 percent of Medicare beneficiaries discharged from hospitals receive post-acute care services in rehabilitation, skilled nursing or home care. According to 2015 data provided by the hospitals, 27 percent of Brookdale’s patients and 28 percent of Kingsbrook’s patients are discharged to an RHCF following an inpatient stay.

Just as the hospital industry is experiencing transformative changes, so too are skilled nursing facilities. New medications and life-saving treatments and interventions have changed many previously lethal diseases into chronic ones. This has contributed to the growth of the aging population. As noted in Figure 14, 11 percent of the service area population is over 65 years of age. By 2025 this age cohort is expected to grow by 45 percent, from 130,000 to 189,000 persons. The frail elderly population, over 85 years of age, is projected to grow by 28 percent, from 13,200 in 2015 to 16,939 by 2025.

Nursing homes primarily serve two distinct populations: short-stay patients (less than 90 days) and long-stay patients (greater than 90 days). One of the most striking changes RHCF facilities have experienced in the last decade is a decline in length of stay. Facilities are treating more patients for a shorter duration, with treatment primarily focused on rehabilitation. There are a number of policy initiatives underway in New York that may impact RHCF utilization, such as:

- Care Management for All, which will shift virtually all Medicaid enrollees into managed care by April 2018 and will improve benefit coordination, quality of care and patient outcomes underway for the nursing home population.
- Under the five-year DSRIP Program, which began April 1, 2015, Performing Provider Systems (PPSs) are collaborating on projects to achieve system reform in order to reduce avoidable inpatient and emergency department admissions through improved discharge planning and decreased service fragmentation. Among the projects some PPSs have selected is Project INTERACT, which stands for INTERventions to Reduce Acute Care Transfers, a quality improvement program that focuses on inpatient transfer avoidance from skilled nursing facilities (SNFs); the management of acute changes in a resident’s condition to stabilize the patient and avoid transfer to an acute care facility.
- Innovations in payment, such as payment bundling and value-based purchasing (80 to 90 percent of Medicaid payments to providers are expected to be value based by 2020), are likely to impact planning for long-term care services.

As a consequence of demographic and care delivery trends, current post-acute care health policy is focused on increasing reliance on community-based services and limiting growth in the number of available RHCF beds. However, it is too soon to predict the local impact on community need for the health system’s post-acute programs. Therefore, we recommend that there should be no changes in the number of RHCF beds operated by the new health system until the clinical services are restructured; then this issue should be revisited in the context of current trends and policies. Given a growing aging population coupled with a service area reporting high rates of chronic illness, compounded by a variety of social and sociodemographic factors, it would not be prudent to reduce access to RHCF facilities that are currently operating near full capacity.

Just as there are opportunities to restructure clinical programs and create shared services among the hospitals, so are there opportunities in the post-acute care continuum. Post-acute care should be developed as an integrated service line with a standardized approach to monitoring of quality, provision of care and operations.
management. The community may benefit from an expansion of post-acute services, particularly for palliative hospice and end-of-life programs, as well as the development of disease/condition discrete units that are responsive to identified service area health needs. In addition, the health system’s RHCFs should become aligned in the care continuum that will include housing and other community-based options that will more effectively serve chronically ill and medically frail residents.

**Projecting Future Inpatient Acute Care Capacity**

As noted earlier, the financial challenges that the hospitals face are in part due to low volumes, high fixed costs and lack of adequate program infrastructure to support centers of excellence. An important aspect of planning for this study is to project and recommend restructuring of the bed capacity to align with service area needs and to provide community access to those beds in the most efficient service configuration. As noted above, the inpatient services are particularly small and fragmented; there are opportunities to regionalize those services, create clinically integrated service lines and develop centers of excellence.

To accommodate different bed configurations and develop recommendations to restructure inpatient services, a population-based utilization model was used. Projected changes in aging of the service area and population growth through 2020 as well as changes in insurance coverage were taken from a variety of sources, (e.g., U.S. Census, the Centers for Medicare and Medicaid Services (CMS), Medicaid Information Service of New York, Salient Healthcare, Truven Health Analytics). Inpatient use rates for the service area were developed using Statewide Planning and Research Cooperative System (SPARCS) data at the diagnosis related group (DRG) level placed in cohorts by payer and age for 2015 and applied to the 2020 projected population. The bed projections included several assumptions regarding future utilization in the marketplace, such as reduction in readmissions, elimination of short stays, alignment with DSRIP goals and increased use of outpatient services. These assumptions include the following:

- By 2020, 95 percent of Medicaid recipients will be enrolled in Medicaid managed care programs, which report a utilization rate that is 42 percent lower than Medicaid FFS patients.
- Psychiatric Medicaid FFS utilization was held constant and average length of stay (ALOS) was reduced from 17.4 days to 13.3, which reflects the Medicaid managed care ALOS.
- Obstetric Medicaid FFS utilization was held constant and ALOS was reduced to the Medicaid ALOS of 3.2 days from 3.5 days.
- Prevention quality indicators (PQI) developed by the Agency for Healthcare Research and Quality (AHRQ) were reduced by 25 percent to reflect attainment of DSRIP Program goals.
- To address continued pressure by payers to eliminate short-stay admissions; one- and two-day stays for only medical DRGs were reduced by 25 percent.
- Readmissions were reduced by 25 percent using the CMS definition applied to all payers and ages.
- Hospitals are required to participate in a CMS joint replacement bundle. Therefore, single side hip or knee replacement discharges from acute inpatient rehabilitation units were reduced by 50 percent.
- All hospital market shares were held constant at the 2015 level.
- The percent in-migration to the hospitals from outside the service area was held constant at the 2015 level both at the payer and the DRG level.
- Kingsbrook Medicare medical admissions were reduced by 33 percent due to the relatively high percentage of patients that are admitted from Rutland Nursing Home to the hospital.
It is important to note that this methodology maintains the 2015 hospital service area inpatient market share and the in-migration rate from outside the service area throughout the projection period. We did not consider the impact of market share changes due to the increased attractiveness of the hospitals within the service area because it will take several years for the foundational investments in facilities, technology, programs and services to be made and then reflected in a rise in market share. However, when the health system undertakes a master facility planning process, the ability of facilities to accommodate potential future bed expansion should be a planning consideration.

Based on the foregoing, the projected total average daily census (ADC) for the four study hospitals is expected to decline by 132 beds from the current ADC of 997 to an ADC of 865 by 2020. However, when the changes in ADC are displayed by major clinical bed category, the most significant decline is projected to occur in the behavioral health service line, with a 36 percent decrease in substance use beds and a 15 percent decline in psychiatry beds, primarily driven by length of stay decline as well as achievement of the DSRIP Program goal to reduce preventable admissions by 25 percent. (See Figure 29, Inpatient Average Daily Census by Major Service, 2015 and Projected 2020.)

The most significant projected decline in ADC, using the methodology describe above, occurs at Interfaith, because of a preponderance of behavioral health beds. However, based upon more detailed discussions with the behavioral health clinical leaders at Interfaith, Brookdale and Kingsbrook, we believe it would be inadvisable to reduce the availability of behavioral beds; significant negative social determinants of health, such as poverty and homelessness, are prevalent in the service area population and attenuate a methodology-driven decline in utilization. For example, Interfaith reported that over 50 percent of the behavioral health patients admitted to the hospital are homeless. It would be very shortsighted in the formative years of the health system to provide a behavioral bed capacity that would be inadequate to meet the needs of the service area. However, as the behavioral service line evolves and ambulatory care capacity increases, it is quite likely that either fewer behavioral beds will be needed or the service line will decrease length of stay and be able to accommodate more patients in the same number of beds.

### Table 29

<table>
<thead>
<tr>
<th>Major Service</th>
<th>2015</th>
<th>Projected 2020</th>
<th>Projected Change</th>
<th>Recommended</th>
<th>Difference from 2015</th>
</tr>
</thead>
<tbody>
<tr>
<td>Medicine</td>
<td>449</td>
<td>381</td>
<td>(68)</td>
<td>381</td>
<td>(68)</td>
</tr>
<tr>
<td>Surgery</td>
<td>184</td>
<td>157</td>
<td>(27)</td>
<td>157</td>
<td>(27)</td>
</tr>
<tr>
<td>Psychiatry</td>
<td>183</td>
<td>155</td>
<td>(28)</td>
<td>183</td>
<td>0</td>
</tr>
<tr>
<td>Obstetrics</td>
<td>48</td>
<td>45</td>
<td>(3)</td>
<td>45</td>
<td>(3)</td>
</tr>
<tr>
<td>Neonatology</td>
<td>34</td>
<td>33</td>
<td>(1)</td>
<td>33</td>
<td>(1)</td>
</tr>
<tr>
<td>Rehabilitation</td>
<td>38</td>
<td>48</td>
<td>10</td>
<td>48</td>
<td>10</td>
</tr>
<tr>
<td>Pediatrics</td>
<td>28</td>
<td>25</td>
<td>(3)</td>
<td>25</td>
<td>(3)</td>
</tr>
<tr>
<td>Substance Abuse</td>
<td>33</td>
<td>21</td>
<td>(12)</td>
<td>21</td>
<td>(12)</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>997</td>
<td>865</td>
<td>(132)</td>
<td>893</td>
<td>(104)</td>
</tr>
</tbody>
</table>

**Source:** Study hospitals internal statistics; SPARCSver2016.06.25adj, census; Salient and Truven; excludes normal newborns. See Appendix for Bed Category definitions.
Based on the foregoing, a significant opportunity for bed consolidation and reconfiguration exists. We would agree with previous efforts to consolidate Kingsbrook’s inpatient services at the Brookdale campus. Brookdale appears to have the greatest capacity for expansion in terms of land and facilities. Originally built to accommodate over 500 beds, it now has an operating capacity of 340 beds. In order to facilitate the movement of services among the hospitals, the new health system will need to undertake an integrated master facility development process and plan to make the necessary changes at each campus. We believe Brookdale can accommodate Kingsbrook’s current medical/surgical volume and Interfaith has sufficient space to accommodate Kingsbrook’s behavioral bed units. Kingsbrook’s acute rehabilitation unit should remain on the Kingsbrook campus and be integrated with other post-acute services in and around the Rutland Nursing Home. This transition would occur over two to three years, allowing for a smooth transition of patients and personnel. From the standpoint of availability of services, it should be noted that Kingsbrook would maintain an emergency department and serve as a location for ambulatory care programs.

Additionally, once the hospitals are unified under a common governance, management and clinical structure, there should be multiple opportunities to attain operating efficiencies through reducing length of stay, consolidating services in a phased fashion and diverting avoidable inpatient utilization into an ambulatory setting. We note that approximately 21 percent of Kingsbrook’s medicine admissions originate in its nursing home, and DSRIP-supported initiatives, such as transition of care, are focused on reducing hospital admissions from nursing homes by 25 percent.

The consolidation of the major services at each hospital results in accommodating an average daily census of: 37 rehabilitation ADC at Kingsbrook (in the Rutland Nursing Home); 181 ADC at Interfaith; 336 ADC at Brookdale; 141 ADC at Wyckoff; and 198 ADC at University Hospital. (See Figure 30, Inpatient Average Daily Census by Hospital, 2015 and Projected 2020; Figure 31, Inpatient Average Daily Census by Major Service, Projected 2020.) A summary of the recommended major service components for each of the hospitals appears in Figure 32, Recommended Hospital Services.

<table>
<thead>
<tr>
<th>Hospital</th>
<th>2015</th>
<th>Projected 2020</th>
<th>Projected Change</th>
<th>Recommended</th>
<th>Difference from 2015</th>
</tr>
</thead>
<tbody>
<tr>
<td>Brookdale</td>
<td>260</td>
<td>216</td>
<td>(44)</td>
<td>336</td>
<td>76</td>
</tr>
<tr>
<td>Interfaith</td>
<td>191</td>
<td>138</td>
<td>(53)</td>
<td>181</td>
<td>(10)</td>
</tr>
<tr>
<td>Kingsbrook</td>
<td>188</td>
<td>172</td>
<td>(16)</td>
<td>37</td>
<td>(151)</td>
</tr>
<tr>
<td>Subtotal</td>
<td>639</td>
<td>526</td>
<td>(113)</td>
<td>554</td>
<td>(85)</td>
</tr>
<tr>
<td>Wyckoff</td>
<td>149</td>
<td>141</td>
<td>(8)</td>
<td>141</td>
<td>(8)</td>
</tr>
<tr>
<td>University Hospital</td>
<td>209</td>
<td>198</td>
<td>(11)</td>
<td>198</td>
<td>(11)</td>
</tr>
<tr>
<td>Total</td>
<td>997</td>
<td>865</td>
<td>(132)</td>
<td>893</td>
<td>(104)</td>
</tr>
</tbody>
</table>

Note: Excludes normal newborns
Source: Study hospitals internal statistics; SPARCSver2016.06.25adj, census; Salient and Truven
Figure 31
Inpatient Average Daily Census by Major Service, Projected 2020

Figure 32
Recommended Hospital Services

<table>
<thead>
<tr>
<th>Service</th>
<th>Brookdale</th>
<th>Interfaith</th>
<th>Kingsbrook</th>
<th>Wyckoff</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Inpatient</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Medicine</td>
<td>X</td>
<td>X</td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>Surgery</td>
<td>X</td>
<td>X</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Rehabilitation</td>
<td></td>
<td></td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>Psychiatry</td>
<td>X</td>
<td>X</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Substance Abuse</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Obstetrics</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pediatrics/Neonatology</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Inpatient Surgery</td>
<td>X</td>
<td>X</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Outpatient</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ambulatory Surgery</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Emergency Department</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Trauma Designation</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>CPEP</td>
<td></td>
<td></td>
<td></td>
<td>X</td>
</tr>
<tr>
<td><strong>Other</strong></td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cardiac PCI</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SNF/Subacute</td>
<td>X</td>
<td>X</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Primary Care</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>Specialty Care</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td></td>
</tr>
</tbody>
</table>

Note: Excludes normal newborns
Source: Internal statistics; SPARCSver2016.06.25adj/ja
Recommendation #6 – Pursue clinical integration through a service line approach.

The provision of inpatient and ambulatory clinical services should be organized by service line, and uniform clinical policies and standards should be established by systemwide medical leadership. A clinically integrated health system focuses on and is responsive to identified health needs. Using a team approach, it ascertains that essential healthcare services are accessible throughout its service area and creates, through consolidation, regional centers of excellence focused on those services or programs that are low volume or high risk or require specialized facilities, equipment or resources. This approach typically better aligns resources with the health needs of the community.

It is important to define the term clinically integrated. In a clinically integrated health system, there is a single standard of quality; uniform measures of quality are used to determine how a service performs in relation to the standard; and there is a standardized approach to the governance, collection and analysis of data with respect to the uniform measures. Standards are developed and approved by system leadership; once adopted, they are rolled out across the region and integrated into all quality improvement activities. Quality improvement efforts must be not only sustained and monitored by clinical and management leadership but also reported and discussed at every board meeting.

Inpatient and ambulatory clinical programs should be coordinated in a service line model across the health system. These service lines cross traditional departmental boundaries and may include behavioral health, children’s health services, continuing care (which includes home care, hospice, sub-acute rehabilitation and skilled nursing), diagnostic imaging services, emergency services, head and neck, laboratory services/anatomic pathology, physical medicine and rehabilitation, radiation oncology, orthopedics, urology and women’s health services. Clinical leaders assume primary responsibility for implementing systemwide policies along with medical board leadership and developing local programs responsive to community needs consistent with the service line strategy.

We know of no health system that has achieved clinical integration when physicians and management leadership operate independently of one another, do not share data and are not accountable for systemwide performance. The health system should evolve its clinical model into clinical service and product lines under the leadership of experienced clinical leaders who oversee the coordination and standardization of care. An important objective is to reduce unnecessary or unexpected variation in clinical practices or outcomes. The service line leader would also be responsible for coordinating the development of a strategy for the service line across the health system enterprise. All clinical leaders, both voluntary and employed, will need to work together to align with the strategic goals established for the health system and at the individual hospital level.

Systemwide physician groups should adopt and develop standards in a consensus-driven process and decide how to best shape and implement their own initiatives to reach quality and efficiency goals. In all instances, execution occurs at the hospital level in concert with management and clinical leadership.
Recommendation #7 – Regionalize clinical programs and restructure inpatient services.

The inpatient programs should be restructured to more effectively respond to identified community health needs and future demand; they should be organized to foster an operationally efficient regional care delivery model. In a phased approach, based upon the DOH’s commitment to ongoing operating support and capital investment, the hospitals should begin the process of transforming the inpatient assets of the new health system.

The movement of services must be carefully planned and implemented. Some opportunities will require capital investment, while others will require a high degree of communication and coordination. It has been our experience that progress is more easily achieved when clinical leaders are appointed who are committed to the objectives of clinical integration and regionalization of services.

Recommendation #8 – Provide a safe environment in which to render care.

Investments must be made in each hospital to provide a safe environment to support the provision of quality care through the transformation period. These investments will be described in greater detail in Section H, Facility Investments. Suffice it to say that it is extraordinarily difficult to provide quality care if the major building systems are unreliable and if diagnostic and medical equipment cannot meet modern standards of care.

Recommendation #9 – Continue to operate Brookdale, Interfaith and Wyckoff as community hospitals.

Brookdale, Interfaith and Wyckoff should serve as the locus for specialized inpatient care and should be strengthened as community hospitals in their respective regions. Brookdale must be rebuilt so as to accommodate medical/surgical volume from Kingsbrook and complex, high-risk, low-volume surgical cases from Interfaith, as well as continuing to serve as a regional trauma center. Interfaith will be able to reopen its closed behavioral health unit and continue to meet the emergency, medical, routine surgery, behavioral and specialty ambulatory care needs of the service area in expanded and new facilities.

Interfaith’s behavioral health and substance abuse services will be organized by subspecialty programs, and it will operate the CPEP relocated from Brookdale. Investments must be made at Wyckoff to support clinical program development and ambulatory surgical growth, particularly in cardiac, orthopedic and maternity services.

At the end of the transformation period, Brookdale, Interfaith and Wyckoff will continue to provide regional access to a wide range of medical/surgical, behavioral and other specialized inpatient services. The inpatient programs of these hospitals are to be clinically integrated with a significantly expanded regional primary and ambulatory care network.
**Recommendation #10 – Evolve Kingsbrook into a regional campus for post-acute, specialized ambulatory care and programs addressing social determinants of health.**

Investments will be made at Kingsbrook so that it may evolve into a regional center of excellence focusing on post-acute, long-term care and rehabilitation with specialized ambulatory care programs focused on chronic care, geriatrics and management of chronic care and advanced illness. The campus will be repurposed to cohort programs and facilities that address social determinants of health such as supportive housing for at-risk, medically fragile residents.

We suggest consideration of a managed long-term care program that helps people stay in their homes and communities who are chronically ill or disabled and who need services such as home care and adult day care. Medicaid-managed long-term care plans arrange and pay for a large selection of health and social services, and provide choice and flexibility in obtaining needed services from one place.

There are two basic models of managed long-term care in New York State that offer all-inclusive care for the elderly: the Program of Long-Term Care for the Elderly (PACE) and managed long-term care plans. Of these, PACE can provide comprehensive medical and social services to certain frail, community-dwelling elderly individuals, most of whom are dually eligible for Medicare and Medicaid benefits. An interdisciplinary team of health professionals provides PACE participants with coordinated care. For most participants, the comprehensive service package enables them to remain in the community rather than receiving care in a nursing home. Financing for the program is capitated, which allows providers the flexibility to deliver all services participants need rather than only those reimbursable under Medicare and Medicaid fee-for-service plans.

An example of the type of development that could be contemplated for the Kingsbrook campus is the recently announced plan to convert the Sea View Hospital campus on Staten Island to create a mixed-use development that focuses on chronic disease treatment and prevention. The proposed project includes housing for seniors with disabilities, a wellness center providing a range of ambulatory rehabilitation programs, primary care and access to social services and other agencies, which will reside on the campus.

Kingsbrook will continue to provide access to emergency care but will no longer provide inpatient medical/surgical or behavioral care. The Transformation Plan will require Kingsbrook to relocate its medical/surgical volume to Brookdale and its behavioral health patients to Interfaith once investments are made in those facilities to ready them to accept these programs.
Recommendation #11 – Consolidate Article 28 licenses within the central region.

The three hospitals that comprise the central region should ultimately merge under a single operating certificate. Kingsbrook’s operating certificate would be consolidated with Brookdale’s, and it would operate as a division of the hospital. Interfaith would similarly restructure its license with Brookdale to avoid a potential institute for mental disease (IMD) penalty, due to the fact that a large proportion of its beds provide behavioral health services.

Physician Alignment and Engagement

Physician alignment is the cornerstone of the development of an integrated healthcare system. Health reform requires a high degree of physician/hospital alignment as the environment transitions to value-based care. The alignment platform must offer a spectrum of relationships to enable physicians to remain part of the fabric of the community as well as to create multiple, coordinated entry points throughout the service area. Physician partnership models can range from loose affiliations that include hospital privileges to part- and full-time employment or joint venture relationships. Implementing a variety of physician alignment approaches is integral to improving access to care and health outcomes. Physician alignment is critical to achieving clinical integration and strengthening and expanding relationships with both voluntary and employed physicians. To accomplish this, the health system will need to address disparate cultures as well as information technology platforms and financial incentives. As with governance transformation, physician alignment across a health system must occur in a thoughtful, measured fashion. It is important to build consensus within the clinical leadership and create effective lines of communication between physicians and hospitals. The practical aspects of strategy execution must be accommodated in such a manner as to mitigate any possible negative consequences.

Recommendation #12 – Create a continuum of physician alignment programs to engage both voluntary and employed medical staff.

The physician alignment continuum offers a multitude of options to create an integrated physician network with both voluntary and employed physicians. Loose affiliation options include medical staff privileges at hospitals as well as clinical or administrative services contracts. Tighter integration options include center of excellence membership, independent practice association (IPA) and management services organization (MSO) participation and joint venture development and employment.

Participation in a clinical center of excellence provides the opportunity for physicians to collaborate to meet or exceed industry standards by adopting and adhering to best practices. The center of excellence structure aims to elevate the coordination and quality of care as well as the patient experience. This approach provides a platform of visibility and identity through a branded program known for clinical excellence.
IPA membership creates an alternative integrated network of providers for the communities served. Participation provides access to value-based commercial and government payer contracts as well as economic benefits to enrollees including care coordination fees, an annual quality bonus and shared savings. Additionally, providers are given access to resources to manage high-risk patients, and the administrative burden on reporting requirements for commercial and government value-based programs is significantly reduced.

MSO membership grants physicians access to a wide array of clinical and administrative services. Examples of services include revenue cycle, practice management (HR, IT, etc.), finance and business operations (legal, marketing, etc.), quality, care management and patient access services (call center, etc.).

Joint venture arrangements can focus on developing specialized satellite programs, such as dialysis and ambulatory surgery centers, throughout the service area. Physicians partnering in a joint venture can obtain ownership interest. Joint ventures expand ambulatory care capacity consistent with strategic growth objectives while supporting high-quality care in a cost-effective setting. The joint venture programs can benefit from enhanced brand recognition through alignment with physician partners and strategic operational/capital partners.

Full employment provides physicians with the opportunity to be fully integrated into the health system. Care coordination across all medical and surgical specialties is an essential benefit to employed physicians. Additional benefits to the full employment model include rate enhancements, reduced burden of clinical and administrative oversight, cost efficiencies and access to vast support resources. Physicians are aligned through a multitude of quality programs consistent with their area of clinical practice.

It is critical to have a centralized physician relationship management program to support the entire physician alignment continuum by establishing and fostering relationships with employed and community-based providers. Field-based outreach workers can fill clinical and service gaps across service lines by conducting thorough reviews of physicians/practices identified through extensive business analytics and making recommendations to the clinical and administrative leadership teams for an alignment approach. In addition, the team can strengthen and expand physician relationships through referral development activities that connect employed and voluntary physicians and raise awareness of clinical programs and services in the community.
The hospitals currently have a small ambulatory footprint within the community. (See Figure 33, Locations of Current Ambulatory Care Sites by Hospital, 2016.) These facilities collectively provide approximately 300,000 primary and ambulatory visits annually (excluding methadone and dialysis visits) and vary in size, location, capabilities and age. (See Figure 34, Community-Based Primary Care and Ambulatory Visit Volume by Hospital, 2015.) For example, Interfaith operates highly regarded dental and methadone programs while Brookdale and Wyckoff recently developed new primary care programs and University Hospital has extended its reach to Bay Ridge.

Only University Hospital’s medical staff model is built exclusively on full-time geographic faculty, its physicians are employed and their clinical income organized through an institutional practice plan that supports a portion of their compensation and is used to further mission-related objectives. The other four hospitals employ full-time, part-time and sessional physicians. Some physicians are part of an institutional captive professional or limited liability corporation, and there may be limitations on their practice, while those not working full time typically maintain a private practice outside of the walls of the hospital.
<table>
<thead>
<tr>
<th>Hospital</th>
<th>Location</th>
<th>Visit Volume</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Brookdale</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Family Care Center: Bristol</td>
<td>1235 Linden Boulevard</td>
<td>25,713</td>
</tr>
<tr>
<td>Urgent Care Center</td>
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<td>17,698</td>
</tr>
<tr>
<td>Family Care Center: Linden</td>
<td>2554 Linden Boulevard</td>
<td>15,405</td>
</tr>
<tr>
<td>Family Care Center: New Lots</td>
<td>463-469 New Lots Avenue</td>
<td>14,983</td>
</tr>
<tr>
<td>Family Care Center: Flatbush</td>
<td>1095 Flatbush Avenue</td>
<td>12,107</td>
</tr>
<tr>
<td>Family Care Center: Urban Strategies / Eastern Parkway</td>
<td>1873-1883 Eastern Parkway</td>
<td>12,046</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td>108,674</td>
</tr>
<tr>
<td><strong>Interfaith</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bishop Walker Health Center</td>
<td>528 Prospect Place</td>
<td>31,643</td>
</tr>
<tr>
<td>Bedford Dental</td>
<td>1536 Bedford Avenue</td>
<td>9,513</td>
</tr>
<tr>
<td>Behavioral Health Program (BHP)-Adult</td>
<td>1038 Broadway</td>
<td>5,940</td>
</tr>
<tr>
<td>Primary Care/HIV</td>
<td>880 Bergen Street</td>
<td>2,462</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td>49,558</td>
</tr>
<tr>
<td><strong>Kingsbrook</strong></td>
<td></td>
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</tr>
<tr>
<td>Pierre Toussaint Family Health Center</td>
<td>1110 Eastern Parkway</td>
<td>12,794</td>
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<tr>
<td>Total</td>
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<td>12,794</td>
</tr>
<tr>
<td><strong>Wyckoff</strong></td>
<td></td>
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</tr>
<tr>
<td>Women’s Health Center</td>
<td>10 Wyckoff Avenue</td>
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</tr>
<tr>
<td>Pediatric Center</td>
<td>1411 Myrtle Avenue</td>
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<td>Doctors at Myrtle</td>
<td>1419 Myrtle Avenue</td>
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</tr>
<tr>
<td>Medical Arts Building</td>
<td>1610 DeKalb Avenue</td>
<td>7,000</td>
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<tr>
<td>Bariatric Center</td>
<td>95 Wyckoff Avenue</td>
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</tr>
<tr>
<td>Family Health Center of Middle Village</td>
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<tr>
<td>Total</td>
<td></td>
<td>69,000</td>
</tr>
<tr>
<td><strong>University Hospital</strong></td>
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<td>Center for Health Services - Midwood</td>
<td>2171 Nostrand Avenue</td>
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<tr>
<td>School Based Health Program - PS 293</td>
<td>284 Baltic Street</td>
<td>4,055</td>
</tr>
<tr>
<td>School Based Health Program - PS 142</td>
<td>610 Henry Street</td>
<td>3,119</td>
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<td>School Based Health Program - PS 38</td>
<td>450 Pacific Street</td>
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<td>School Based Health Program - MS 51</td>
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<td>2,194</td>
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<tr>
<td>Total</td>
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<td>55,759</td>
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<tr>
<td><strong>Grand Total</strong></td>
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<td>295,785</td>
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</tbody>
</table>

**Note:**
1. Interfaith excludes MMTP program with 21,876 visits.
2. Wyckoff visit volume is estimated for 2016 visits.
3. University Hospital excludes offsite dialysis center with 25,325 visits.

**Source:** Study hospitals internal statistics
The development of a geographically dispersed and clinically comprehensive ambulatory care network within the service area is foundational to the transformation strategy. It is clear that the development of an ambulatory care network is also dependent on the recruitment of primary care and specialty physicians. A clinically integrated and operationally efficient primary care network is essential to reduce inappropriate utilization of emergency departments and hospital admissions for preventable health conditions; this can lead to improvements in community health status. Increasing primary care access in collaboration with other community providers is also critical to successfully managing the health of the population and transitioning to value-based reimbursement, which can support an effective care management infrastructure.

Increase Supply of Primary Care Physicians

Previous studies estimated that decreasing service area reliance on emergency departments as a source of primary care will require a significant (in some communities over 50 percent) increase in primary care providers. To better illustrate the challenge the health system will have in recruiting physicians to staff its ambulatory care network, the current availability of primary care physicians in the service area was compared to that in the rest of Brooklyn, other New York counties and nationally.

Source: Advisory Board Physician Demand Estimator Tool, accessed on 6/3/2016
Using models developed by the Advisory Board, the service area primary care density at 58 primary care physicians per 100,000 population, was determined to be at the fifth percentile nationally relative to other health referral regions in the country. (See Figure 35, Percentile Ranking of Service Area Primary Care Physicians per 100,000 Population, 2015.) This is significantly less when compared to the rest of Brooklyn which has 88 primary care physicians per 100,000 population at the 48th percentile. By contrast, Queens and Staten Island are at the 30th and 35th percentiles respectively, while the Bronx is at the 64th percentile and, not surprisingly, Manhattan is at the 100th percentile. (See Figure 36, Comparison of Primary Care Physician Density for Service Area and NYC Counties per 100,000 Population, 2015.) The data certainly supports the frequent comments we heard at the community engagement meetings; more than one speaker described parts of the service area as a “healthcare desert.”

It is beyond the ability of any one organization to recruit sufficient providers to fill the projected need for primary care physicians in central and northeastern Brooklyn. This is not only a capital and operating problem but also a people problem. To demonstrate the magnitude of this challenge, the health system would need to recruit 335 additional primary care providers in order to increase the availability of primary care providers within the service area from the fifth percentile to the 48th to reflect PCP availability in the rest of Brooklyn. Clearly, this is a daunting task for any healthcare organization, and much more so for one that is poorly capitalized, dependent on payers that reimburse below cost and reliant on government to subsidize operating losses. Funding the recruitment of 300 primary care physicians, would require the commitment of a significant proportion of the health system’s available capital, and a substantially increased operating subsidy that could, in the best of circumstances, only be partially mitigated, not eliminated, under value-based purchasing.
In an attempt to develop realistic goals as part of the transformation plan, the collective inpatient market share of 24 percent was applied against the need for 335 PCPs to establish a challenging but achievable goal, to recruit approximately 120 providers over the next three to five years; 80 primary care and 40 specialty providers who would support referrals from the primary care providers for specialized diagnosis, treatment and management of cardiac, endocrine, pulmonary and oncology conditions prevalent in the community.

A significant investment of resources over a number of years will be required to recruit new primary care providers, expand or develop facilities in which they will practice and conduct an extensive community educational awareness campaign to alter the community’s decades-old emergency department primary care utilization pattern. We would also note that improved primary care access not only may result in a reduction of avoidable hospitalizations but also can be offset by an increase in the number of inpatient discharges due to case finding for a larger population of attributed patients. As the health system treats more patients, a proportion of those patients will require hospitalization and other services. Therefore, even when a market exhibits declining inpatient utilization, individual providers will experience an increase in utilization if they have expanded their ambulatory care presence because they are treating more individuals.

A significant amount of effort is needed to rethink the current ambulatory clinical model and develop one that would improve coordination, increase patient satisfaction and permit the health system to effectively manage population health and participate in value-based purchasing arrangements. The need to integrate primary and behavioral care and provide a more holistic approach was mentioned as a high priority throughout the community engagement process.

The ambulatory care models recommended for development include:

- Integrated primary care (IPC), including behavioral health primary care, effective management of chronic disease, medication management, community-based prevention activities and clear alignments with community-based, home and social services agencies (patient centered medical home [PCMH]/advanced primary care [APC] models). This type of care is continuous in nature, strongly population focused, based in the community, culturally sensitive and oriented toward primary and secondary prevention; it aims to act as the primary source of care for the majority of everyday needs. In this model, urgent care centers provide convenient after-hours nonemergent access and serve as an extension of the primary care practice.

- Episodic care services utilized for finite periods of time when people require more specialized services or have a specific health problem or condition. Within the Medicaid population, maternity care may be the best example; for elderly patients, hip and knee replacement episodes are the most prevalent. These services, which may involve any one or a combination of services across the continuum of care, should be tightly integrated, with multidisciplinary teams working with evidence-based care pathways, organized around these patients’ specific needs, resources (including community resources) and cultural sensitivities.

- Specialized continuous care for those individuals who require ongoing, dedicated, specialized interdisciplinary services for their health problem(s) or condition(s). This can involve both evidence-based specialty care for individual conditions (hemophilia,
advanced kidney disease, serious mental health and/or substance use disorders) as well as care for severely comorbid and/or special needs populations (e.g., the Health and Recovery Plan [HARP] and managed long-term care Fully Integrated Duals Advantage [FIDA] Program populations, Medicaid and Medicare beneficiaries with significant developmental disabilities and beneficiaries with HIV/AIDS). For the latter groups of patients, personalized goal setting and intensive care coordination become more dominant than disease management per se. In both, maximizing a patient’s capabilities for self-management and personal autonomy in the most integrated setting appropriate to a person’s needs (i.e., home and community) is central.

The proposed ambulatory care development plan is based upon Northwell’s extensive experience employing 3,900 physicians providing a continuum of care and services at over 450 ambulatory locations. It calls for grouping primary care offices around an urgent care center that provides extended-hours coverage linked to community-based specialty services and centers for specialized diagnostic and treatment services.

The health system must organize all currently employed non-hospital-based physicians into a community medical group in advance of recruiting new providers and building new access points throughout the service area. This will facilitate the combining of the existing ambulatory assets of each hospital into one unified ambulatory care network. Investments will be required in the existing facilities to maximize treatment capacity, operational efficiency and patient experience.

The network must be supported by dedicated infrastructure to manage population health and perform under value-based payment models. Capital will be required to acquire and install a unified clinical information platform and operating systems throughout the network. In addition, network development will need to have dedicated, expert staff in a variety of disciplines.

Day-to-day management of the network of ambulatory locations should be performed through a managed service organization (MSO), whose responsibility is to ensure efficiency, ease of access and service with the goal of becoming a high-performing quality network. The objective is to provide consistency throughout the ambulatory sites in terms of quality, patient satisfaction, electronic medical record (EMR) system utilization, coding, billing and facility appearance. The MSO will need to provide the following services:

- Accounting and finance
- Analytical and reporting services
- Billing and collections
- Compliance
- Regulatory requirements and certifications
- Credentialing and privileging
- Electronic medical records
- Information technology
- Managed care negotiation
- Risk management and malpractice insurance
- Human resources and payroll
- Benefits administration
- Marketing services

We propose the health system consider the development of the following types and numbers of facilities as part of its ambulatory care network:

- Seven urgent care centers should be developed throughout the region. They may be free-standing (about 2,500 square feet), co-located with physician primary care practice facilities or embedded in larger regional diagnostic and treatment facilities. These urgent care centers would provide unscheduled walk-in care, not only to redirect non-emergent visits away from hospital emergency departments but also to serve as an extension of primary care practices and other community providers after hours. In the case of small stand-alone facilities the preference would be to lease.
• In order to maximize the number of locations and more easily integrate them into the community, the primary care practices should be of two sizes: either four to six providers each or eight to ten providers. Some of the practices should be organized to qualify as National Committee on Quality Assurance (NCQA) Level 3 PCMHs. In order to maximize the available capital investment, these facilities may be developed in leased space with renovation and fit-out costs amortized in a capitalized lease.

• Two larger regional diagnostic and treatment facilities (15,000 to 25,000-plus square feet) should be developed around hubs of employed or contracted physicians practicing in primary care offices, to provide specialty care and ancillary services such as cancer treatment, ambulatory surgery and diagnostic imaging. Specialty centers should be strategically organized to provide disease-centered services in response to identified community health needs (e.g., cardiac care, fetal diagnosis, cancer). Given the capital-intensive nature of these investments, a preference would be to own the land and buildings.

• An independent practice association (IPA) should be created to include health system’s employed medical group, independent physicians practicing in the service area, federally qualified health centers (FQHCs) or other IPAs to provide contracted services to managed care organizations under modified fee-for-service or value-based purchasing models of reimbursement.
In contrast to the current localized ambulatory footprint, once the ambulatory care network has been fully developed the health system will have an extensive network of interconnected and coordinated primary care and ambulatory access points throughout the service area that will be clinically integrated with a regional care continuum. (See Figure 37, Current and Proposed Health Care Delivery System Network.)

The locations of the facilities will need to be coordinated with the three existing FQHCs and other providers so as to maximize primary care access in the service area. The specialized ambulatory care programs may also be structured to support specialty referrals from the FQHCs and be aligned with their strategic needs. In the future it may be beneficial for a portion of the health system’s primary care assets to be restructured to qualify for FQHC funding.

In order to address the challenges described above, the new health system should have a dedicated ambulatory care division accountable to the CEO and board to build and manage all the current and new ambulatory care assets of the constituent hospitals.

Recommendation #13 – Dedicate staff to guide the building and operations of the ambulatory care network operating division.

All of the current non-hospital-based ambulatory care assets should be consolidated into a division of ambulatory care and network development accountable to systemwide leadership. It is particularly important to recruit strong physician executive leadership and appoint a team with experience in building physician networks and driving improved clinical performance. This division should have dedicated staff who are responsible for executing the ambulatory care strategy, building new facilities, recruiting physicians into the health system’s medical group and attaining quality and operating performance standards.

The ambulatory care division will manage the planning, construction and operation of the substantial new investments that will be made to develop the network through a combination of direct ownership, physician joint venture and contractual IPA-type relationships. These services will be organized and operated in such a manner as to provide integrated primary, episodic and specialized care to service area residents consistent with the objectives of DSRIP and the State Roadmap for Medicaid Payment Reform.

Recommendation #14 – Recruit 120 primary care and other providers to develop and operate the regional ambulatory care network throughout the service area.

The ambulatory care network should be composed of urgent care centers, primary and specialty physician offices of varying sizes and specialty ambulatory care facilities for cancer, diagnostic imaging and ambulatory surgery. These programs must be coordinated, linked and aligned with the few other providers in the service area, most notably the three FQHCs and community health centers operated by Health + Hospitals.
A detailed ambulatory strategy must be developed to select the sites and services to create a geographically dispersed network within both central and northeastern regions of the service area. The health system will need to recruit an additional 120 primary, specialty and other providers over the next five years to shift the focus of care to community-based ambulatory care venues. In order to build effective bridges with Downstate, all physicians recruited to the ambulatory care network should be board eligible or board certified and qualify for appointment to the faculty of the SUNY Downstate College of Medicine.
F.4. Academic Programs

The four study hospitals currently sponsor approximately 500 graduate medical education (GME) residents and fellows in over a dozen accredited allopathic, osteopathic and dental residency and fellowship programs. Each hospital has a senior physician who chairs the institutional GME committee to ensure that the hospital meets the essential requirements of the Accreditation Council for Graduate Medical Education (ACGME) and other regulatory bodies, and provides support to each GME program director to meet the more detailed accreditation requirements for each residency review committee program specialty.

The strategy for restructuring the GME programs is intertwined with the health system’s clinical service line strategy. Strong GME programs can only be built upon strong clinical services; they require a critical mass of board-certified teaching faculty, adequate supervision and infrastructure support.

GME positions are allocated and funded on a site-specific basis, and there is a limit as to how many positions are approved for federal funding at each site. Two of the hospitals are operating at or near their limit on the number of GME positions they currently offer, and two are below their limit. The hospitals currently collectively receive approximately $60 million in funding for direct and indirect medical education costs. It is important for the health system to continue to support its GME programs and, over time, restructure those programs to align with the clinical program strategy. For example, the development of an ambulatory network will provide significant opportunities to increase both the number and type of community-based teaching experiences and shift the locus of learning experiences to where the majority of physicians will practice medicine after they complete their residency training.

The rules that guide GME funding are complex and rigid. The decision on whether or not to integrate, expand or contract programs is also dependent on the governance structure of the hospitals and whether or not the operating certificates have been merged or share a common parent. An analysis has to be performed to determine the financial consequences prior to implementation of any action. However, the final choice has to be the option that strengthens the clinical services and the educational experience and minimizes any adverse financial impact.

It is important for the health system to continue to support its GME programs and, over time, restructure those programs to align with the clinical program strategy.

Even when a restructuring plan is developed, GME transformation must be done carefully and deliberately. All training commitments to current residents and fellows must be honored. There are clear requirements for notification and approval before any actions can be taken as well as for the involvement of the Committee of Interns and Residents, which represents many of the residents. As a consequence, restructuring of GME programs must be coordinated with clinical transformation activities and occur in a phased fashion. It is likely that the health system will decide that it is in its long-term interests to establish a systemwide GME consortium to create the most optimal training experience and better manage and support resources dedicated to systemwide GME programs.
The study hospitals also provide access to a large number of medical students from for-profit medical schools, located primarily in the Caribbean. The schools pay the hospital between $400 and $600 per week, per student, to provide a third- and fourth-year clinical clerkship experience. In 2015, the four voluntary hospitals received approximately $13 million in payments from for-profit medical schools against which they paid for associated teaching costs incurred to support the students. In this respect, undergraduate medical education is a revenue center for the hospitals, and all the hospitals have become dependent upon receipt of these funds as part of their financial planning and budgeting activities. Some of the hospitals have relied on the schools for working capital and have had to ask for advances from them to meet their operating obligations. One hospital has received a loan to do likewise.

**Recommendation #15 – Establish an office of academic affairs and appoint a chief academic officer to oversee restructuring of GME programs.**

The health system should organize support for its GME and continuing medical education (CME) activities much in the same fashion as proposed for shared support services, with a centralized office of academic affairs led by an experienced clinical educator.

The health system should appoint a chief academic officer (CAO) who will also chair the health system’s GME committee, which oversees compliance with ACGME requirements, residency review committee activities and accreditation review of various specialties.

The CAO will work with the chief medical officer, clinical service line leaders and program directors to oversee the quality of residency programs and to develop services and programs for faculty and resident development. In this role the CAO should also serve as the primary academic representative to Downstate in order to coordinate the development and use of the health system to achieve greater levels of programmatic and academic integration.

The CAO should also participate in the restructuring of the clinical services, rebuilding of the facilities and development of the ambulatory care network to ensure that students, residents and fellows are provided with an optimal learning environment and can gain the proficiency required to prepare for their board certification exams.

**Recommendation #16 – Decrease health system reliance on foreign medical school revenue from student clerkships to accommodate medical students from Downstate.**

There are many perspectives as to the appropriateness of paid clerkships and the potential displacement of New York medical school students by foreign for-profit school students. The public policy and financial implications are significant, particularly for a health system that will be supported by sizable capital investment and operating subsidy by New York State. Additionally,
reliance on these schools as a secure source of funding is precarious and can change at the end of a contract period. These and other issues will have to be confronted if a long-term objective is for the health system to play a role in supporting the academic mission of Downstate’s College of Medicine and GME programs. As the health system becomes more attractive to the medical school as a teaching site it will begin to attract board-certified physicians who qualify for a Downstate faculty appointment.

Given the level of New York State subsidy and investment in the health system and Downstate, it is in the interests of New York State for the health system to be weaned off its dependence on foreign medical school revenue to make room for the Downstate students. This initiative will require replacement of a source of revenue that the hospitals have become dependent upon. However, it will also strengthen the relationship between the health system and Downstate and can serve as a bridge to develop other productive collaborations.

**Recommendation #17 – Structure the ambulatory care network programs to support the health system’s GME training and the academic mission of Downstate.**

When fully formed, the health system’s ambulatory care network will be a valued resource to support teaching and training. The health system should design and designate portions as teaching sites for the health system’s GME programs as well as developing primary care/family medicine residency programs. The ambulatory care network can also serve to build more significant bridges with Downstate to support its academic mission. It is for these reasons that it will be important to recruit physicians and other providers to the health system who can qualify for faculty appointment to the Downstate College of Medicine.
In general, the hospitals are currently staffed at efficient levels. The current combined workforce of the four hospitals is approximately 7,700 persons. The overwhelming majority are dedicated to supporting the inpatient programs.

We note that these hospitals are major employers in the service area, providing career ladders for upward economic mobility, and their economic impact is of critical importance to a variety of small businesses throughout the region. The Healthcare Association of New York State (HANYS) has estimated that based on a collective payroll of $1.5 billion and non-salary spending of $760 million, the economic impact to the region is $2.9 billion. Hospital jobs are important to the community, as the level of unemployment is an important underlying social determinant of community health status.

A significant investment in ambulatory care program growth will result in the need to employ 800 additional full-time equivalents (FTEs) in a variety of new clinical, technical and administrative and staff support positions. This investment in new jobs will offset workforce reductions resulting from the hospital restructuring and the development of a systemwide shared service infrastructure. Once the ambulatory care development plan is fully implemented and the restructuring of inpatient care and shared services has been completed, it is projected that the health system will employ slightly more than the four hospitals currently employ collectively.

It is expected that the new health system will begin to realize efficiencies as inpatient clinical services are regionalized. Individuals who are reassigned as a consequence of clinical service line integration will be needed to support a significantly expanded ambulatory network as new primary care, specialty care, urgent care and specialized ambulatory treatment facilities are built across the service area. Additionally, in response to value-based purchasing there will be an increased need for staff with new skills in care management, care coordination and community health.

**Recommendation #18 – Maintain employment for the current unionized workforce throughout the transformation period.**

It will be important to carefully plan and manage the restructuring of the inpatient services and the development of the shared services infrastructure and the ambulatory care network to maintain employment for the current workforce. The addition of new ambulatory jobs will offset the inpatient job reductions, and the health system’s turnover rate of approximately 5 percent can also mitigate the impact of the transformation on a portion of the current unionized workforce.

This does not mean the workforce will be insulated from change. The restructuring and regionalization of clinical programs will require the support, flexibility and close coordination with the unions representing the workforce. We are not underestimating the challenges that must be overcome, but we believe a joint desire to make these hospitals more viable and to improve the health of the service area communities is a strong foundation upon which to establish a new partnership.
At its core, patient care is about people—not just the patients, but also the people who care for them. Whether a frontline caregiver, environmental staff member or shared services professional, every employee of a healthcare organization is an important link to ensuring excellent outcomes and patient satisfaction. Therefore, recruiting and developing talent are essential elements in building a high-quality workforce, but equally important is building upon that foundation by investing in high-impact programs to build engagement and foster collaboration among staff at all levels.

We recommend that the health system adopt an organizational learning approach to educating, developing and inspiring employees in ways that extend far beyond traditional definitions of training. Northwell was among the first health providers in the nation to pioneer this concept, which focuses on what skills and competencies must be acquired to become a world-class organization. This strategy was implemented and continues to evolve through our Center for Learning and Innovation, the largest corporate university in the country. There will be a need to develop employees at all levels.

It should be an organizational priority to work diligently and collaboratively with union members, delegates and leadership throughout the health system to develop and retrain the workforce. The overall goal is to have a partnership with our unions to create a patient-centric model of care and improve efficiency, productivity and quality within the workplace.

It will also be important to recognize the challenges of providing healthcare primarily dependent on government payers and the differences in job responsibilities, titles and total compensation in community-based care delivery settings as compared to inpatient settings. Significant efforts must be undertaken in partnership with the unions representing the workforce to discuss all major aspects and phases of the Transformation Plan with respect to its impact on the workforce.

**Recommendation #19 – Partner with the unions to retrain staff to provide care in ambulatory settings.**

In conjunction with union partners, the health system must develop training programs for staff affected by implementation of the Transformation Plan to permit them to acquire new skills required to provide care in the ambulatory setting under value-based purchasing. Some of the planning for this eventuality is already under way as part of CCB’s DSRIP transformation efforts.

**Recommendation #20 – Partner with the unions to support necessary changes in the health system’s clinical and operating structures.**

The sustainability of the new health system is dependent on the recognition of market forces requiring it to transform its hospital-centric business and clinical model to one that is patient-centric and ambulatory based. It is important that the workforce and their representatives fully understand the implications of the new reimbursement models and market dynamics if their support for the Transformation Plan is to be won.
The payroll and benefit costs of the four study hospitals represents 67 percent of total expenses. The percentage is high relative to other providers but it also may be a function of a smaller denominator that reflects underinvestment in non-salary expenses, facilities and equipment. The Transformation Plan assumes all current employees’ compensation and fringe benefit levels shall be maintained. However, the health system will need to gain the ongoing support of the unions and their recognition of the impact of market forces and changes in reimbursement on health system operations.
Dr. Rosner’s observations provide a thoughtful departure point to think about how the health system can recapture its historic mission, which has eroded under the contemporary political, regulatory and funding frameworks that have made it difficult to address both the health and the social needs of communities.

The need to address social determinants of healthcare has been discussed by the Berger Commission, the Medicaid Redesign Team (MRT) Brooklyn Workgroup report and more extensively in the Coalition to Transform Interfaith Report, *Caring for Today, Planning for Tomorrow*. These studies recognized the need for capabilities and expertise to address social determinants of health and integrate them with the provision of medical care. It has been estimated that approximately 10 percent of an individual’s health can be attributed to the clinical care received, while 40 percent has been attributed to social and economic factors, 30 percent to personal choices and health behaviors and 10 percent each to factors present in the environment and a patient’s genetic composition.

A focus on the non-clinical factors is of critical importance for the communities of central and northeastern Brooklyn if they are to realize a return on the proposed significant health system delivery transformation investment in terms of improved health status. As the healthcare delivery system adapts to a clinical care and business model based on value rather than volume, its future success is more aligned with improvements in the health of populations, which ultimately would lead to bending the cost curve and reducing per capita costs of health. This means that organizations whose financial health is tied to population health metrics must move both upstream and downstream in improving healthcare delivery, quality and patient outcomes; it must focus on the underlying social and community determinants of poor health status.

There is greater recognition that a well-funded, coordinated social services and housing safety net is directly related to a country’s health status. As the passage of the Affordable Care Act (ACA) was debated, many proponents focused on the fact that the United States leads the world in per capita healthcare spending but ranks low on health status outcome measures. Critics of the U.S. healthcare system pointed out that our citizens receive too little value for this level of spending, suggesting that the more we spend the healthier our country should be. Of course, much of this spending supported an inefficient system that was unable to provide insurance to over 40 million of its citizens. The result is that since the passage of the ACA, the country has entered a new transformative phase of healthcare delivery, based on seeking value and recognizing the need to focus on the underlying social determinants to create value and improve health outcomes.

“Our modern hospital has greatly improved the quality of medical care, but in the process the hospital has lost part of its role as a community institution responsive to broader social needs that are locally identified.”

– David Rosner
The majority of these upstream and downstream non-medical factors are currently beyond the capabilities or authority of many health providers. However, given the magnitude of long-term investment in operational transformation and facility rebuilding envisioned in the recommendations of this study, it seems this is also a unique opportunity to innovatively and dramatically transform New York State’s and New York City’s significant investment in the social and community services safety net (e.g., public health education, homelessness, housing, food insecurity, aging services, school health, transportation, maternal health, early childhood education). The health system should serve as a public policy laboratory to develop and integrate a new community-wide infrastructure that would leverage investments in healthcare delivery with those for social service agencies, public health initiatives, educational facilities and community-based organizations.

Addressing the social determinants of healthcare is among the objectives of DSRIP, and there are already some very promising initiatives underway. Notably, the DSRIP-funded CCB is creating infrastructure and pursuing initiatives focused on reducing preventable hospital and emergency department use. Early successes reported by the 25 DSRIP-designated PPSs throughout New York State suggest that closer integration and coordination of care management/population health management functions with social and community-based organizations may provide long-term improvements in health status and reduction of avoidable utilization, which ultimately will result in lower healthcare costs. Additionally, the New York State Prevention Agenda 2013-2017 is requiring closer collaboration between hospitals and local health departments to align community service plans to embrace Prevention Agenda priorities and to mitigate the impact of health disparities. However, even if the new performing provider systems are successful in achieving their DSRIP objectives, these entities may not be sustainable beyond the demonstration period.

The health system has the opportunity to build on DSRIP initiatives and begin what will be a long-term process to create a structure to more effectively transform both the organization and the provision of all government-funded social services and community-building safety net services provided within the service area. Taking a page from economic development programs, we suggest there may be merit in developing a demonstration program to designate the service area as a “Health Enterprise Zone” to provide infrastructure and resources to better integrate clinical care with a coordinated continuum of programs addressing the social determinants of health. A Health Enterprise Zone would support and facilitate alignment of policies, funding opportunities, programs, services and incentives in the following areas:

- Personal behaviors (nutrition, physical activity, lifestyle)
- Built environment
- Housing
- Education
- Crime and violence
- Employment
- Poverty and safety net services
- Food insecurity

The proposed level of New York State investment in supporting the health system’s Transformation Plan and the importance of success for the residents of the City of New York provides an opportunity to create a new and innovative aligned public-private partnership model. The health system should forge a new type of partnership, working with community residents, patient advocates,
community-based organizations and government. This new structure will require leadership at the highest level of government working with and across all agencies in state and city government that provide funding for services that impact social determinants of health. The long-term objective of such a relationship is to determine how policies, rules, regulations and funding priorities can be changed or more effectively aligned to positively impact selected population health metrics tied to health disparities, community health status and overall population health.

Additionally, the establishment of a Health Enterprise Zone can create a new framework to mandate intra-agency and interagency cooperation and alignment. Consider the programmatic opportunities that could be pursued if the $245 million investment in the development of a geographically distributed network of ambulatory care facilities proposed as part of the Transformation Plan could be aligned with the New York State and New York City housing funding priorities and objectives. What if projects being developed for supportive housing received other incentives to incorporate street-level space to support the primary care initiatives of the ambulatory care development strategy? What if senior housing or residential units for the frail elderly were built with embedded technology, sensors and communication to support tele-health monitoring and treatment, and thought were given to how the housing could better support residents’ connections to other social and health services?

One can argue that these can be done as one-off programs within agencies, but we believe the truly innovative, creative solutions will evolve from a complete transformation of these services, which would hasten the pace of change and permit government to partner with community members and national thought leaders to rethink, reinvigorate and reinvent how critical programs can not only meet their mandated funding objectives, but also be aligned and leveraged to improve the health status of the service area communities.

There is precedent for such an approach; we can look at how government has reorganized to provide better coordination for job creation and community economic development.

The health system should forge a new type of partnership, working with community residents, patient advocates, community-based organizations and government.

Economic development zones have been established to leverage funding and facilitate approvals across multiple regulatory and oversight agencies. Aligned programs such as these permit a designated area to experience the benefits of residential, commercial or industrial development, cutting red tape for zoning and construction projects, developing innovative labor arrangements, providing direct capital access or offering tax incentives to get businesses to expand or relocate into the zone.

Addressing the social determinants of health is an important long-term, strategic goal of the health system; it can only be effectively pursued once the health system comes together under a common governance and management structure. They say that every journey begins with a single step. The health system will initially need to build upon and organize all its current programs and services and leverage the relationships that each of the constituent partners has already developed into a new division of community health and engagement. The new division will be able to avail itself of those new services that have accompanied the development and growth of the CCB. A conceptual framework for this division appears in Figure 38, Conceptual Framework to Address Social Determinants of Health.
The agenda for the division of community health and engagement contains many items. There are many examples of how health systems have built community partnerships to reduce health disparities and address some of the underlying determinants of health. As a consequence there are many resources and case studies that the health system can draw upon as it develops its strategy.

Community Health Is Related to Community Economic Security

The health system must undertake deliberate actions that will leverage New York State’s capital and operating investments for the long-term economic benefit of service area residents. As noted previously, the hospitals serve as an economic engine in their neighborhoods. According to the New York State Department of Labor, the healthcare and social assistance sector is the dominant employer in Brooklyn, accounting for approximately one-third of all private sector jobs. Many institutions have focused on leveraging their economic power, and the health system can learn from their strategies and adopt them for use in the service area communities.

A program undertaken by University Hospital of Cleveland (UHC) was brought to our attention by Phil Thompson of the MIT Learning Lab, who has supported the efforts of the Coalition to Transform Interfaith Hospital. UHC closely anchored its mission to and intertwined it with the communities it served to advance their financial health. The UHC experience provides a unique and powerful model that when consciously applied can leverage the health system’s economic power along with its human and intellectual resources for the long-term benefit of its service area.

The foundational efforts of UHC’s commitment were to:

- Include as many local minority- and female- owned businesses as possible.
- Achieve an economic multiplier effect by directing spending to Cleveland and the region.
- Establish a new standard of social responsibility for large institutions and businesses and how they should perform.
UHC created a strategic plan to build community economic security through policies and practices concerning procurement, hiring, real estate development, construction and community development. The commitment of future operating subsidy, the availability of $700 million and the possibility of subsequent capital investment provide a unique opportunity for the new health system to assume a prominent and focused role in becoming an economic anchor in its community and leveraging the funding and investments provided by New York State to build community wealth, which, in turn, will lead to improvements in community health.

Recommendation #21 – Develop a comprehensive program to position the health system as an economic engine for the long-term benefit of the service area communities.

The health system, in concert with community leaders, local business representatives and content experts, should develop a comprehensive strategy and model policies and procedures to leverage the economic power of the institution for the betterment of the communities it serves.

This will require new business processes and procedures and accountability for their outcomes. These efforts should be focused on:

- Recruiting and prequalifying minority- and women-owned business enterprises (MWBEs) and building their capacity with the State to provide bonding and working capital programs.
- Including contractual provisions to permit a greater number of small firms to participate in the project (when contractor firm size is specified in RFP’s).
- Structuring contracts into smaller components that could be performed by local companies.
- Funding training programs for service area residents to enable them to move into construction-related careers.

Housing

Housing is perhaps the most critical social determinant of health. There are numerous examples of how homelessness impacts an individual’s ability to achieve an optimal clinical outcome, particularly in the area of behavioral health. Having expert staff dedicated to focusing on homelessness and housing insecurity, and also developing strong relationships with community-based housing providers and State and local housing entities, will be very important. It will also be important to address housing needs that are influenced by family dynamics, for example, where grandparents assume responsibility for raising their grandchildren, which may preclude them from living in senior-designated housing developments.

There is a need to empower individuals to maintain their independence as long as practical in community-based housing, not relying on institutional housing unless that is their preference. The health system must provide additional services to help maintain tenancy once housing is secured. Programs will be needed to connect individuals to community resources that will enhance interactions among neighbors, prevent eviction and help tenants acquire basic money management and financial literacy.
Additionally, the health system should encourage and if possible participate in the development of affordable housing both for community members and for employees. Affordable housing makes more household income available to pay for healthcare and healthy food, limits exposure to environmental toxins and reduces financial stress, which may enhance mental health status. As the neighborhoods surrounding the hospital gentrify, there is concern that the hospital workforce will not be able to live in the communities they serve. It is important to recruit and maintain a skilled workforce, and there must be options for them to live in the service area, not only today but into the future.

**Transportation**

Transportation has also been identified as high need in the service area. Although individuals acknowledge the benefits of Access-A-Ride, it is available to only a small portion of the patient population most of whom have chronic illnesses and related disabilities. A 2013 analysis of a large number of patient access studies found that anywhere between 10 and 51 percent of patients reported that inadequate access to reliable transportation was a barrier to accessing healthcare.

Other health systems have partnered with ride-sharing services that link appointment reminders to transportation scheduling; these are integrated with technology platforms operated by Uber and Lyft. Fewer such drivers may be available in the service area, but with creative assistance the health system may be able to develop its own private-label transport service.

**Documenting the Impact of Social Determinants of Health**

Foundational to this effort are investments in community-wide health information technology, development of appropriate databases and acquisition of robust analytic capabilities. These resources will need to be integrated into electronic medical records, to collect data across disparate technology platforms and the provider care network. This would permit uniform measurement of medical and social determinants and reporting of a standard set of outcome measures to effectively gauge the success of interventions undertaken by the health system and its community partners is addressing social determinants of healthcare and its impact on community health status.

The conversion from the International Classification System of Diseases and Related Health Problems ICD9 to the new ICD10 provides a unique opportunity for the health system to pioneer the collection of actionable data to better understand the interaction of social determinants and clinical outcomes. The new ICD10 datasets include codes for housing and homelessness as well as health literacy, poverty, lifestyle and social environment characteristics. This will permit the health system to assemble a more accurate picture of service area need for housing, the impact of poverty and other factors and to understand how this deficit impacts the health status of the community.
Recommendation #22 – Focus resources on addressing social determinants of health.

The health system should dedicate personnel and resources to develop a division of community health and community engagement. In the short term it must continue to work through the CCB to create new programs that are able to effectively align government funding for social services, safety net and housing programs to enhance the clinical effectiveness of health system programs and address underlying social determinants of healthcare utilization and community health status. This can also serve as an opportunity to invite the participation of former board members and community leadership in creating an engaged organizational structure to focus on addressing social determinants of health.

In the long term, the investment of substantial resources by the State provides a unique opportunity to rethink how to best support health providers serving a community whose poor health status is inextricably linked to social factors beyond the direct control of those providers. The health system should provide leadership and seek the support of government and other partners to undertake a planning process on how to best achieve this goal. Pioneering the ability to integrate clinical care solutions that address the social determinants of health can become a defining characteristic of the health system.

Recommendation #23 – Develop a Health Enterprise Zone through a public-private partnership to more effectively address social determinants of health.

Consideration should be given to designating the service area communities a Health Enterprise Zone. The coordination of available government-supported community resources in the service area can produce a better alignment of all resources, with the objective of reducing mortality/morbidity and improving the overall health status of the population.

As New York State begins to think about the next Medicaid waiver amendment to define DSRIP 2.0, consideration should also be given to funding the infrastructure investments that are essential to developing a Health Enterprise Zone and achieving more effective approaches to managing the health of populations.

Recommendation #24 – Provide housing developers with incentives to align with the health system’s ambulatory care network development strategy.

New York State and New York City should provide developers with incentives to work with the health system and its housing partners to increase the number of housing units available for supportive housing and to provide specialized programs to better support medically frail and chronically ill residents. Recruiting and retaining a growing workforce will also benefit if there are housing options within the service area.
Additional incentives should be provided for housing developers to make available street-level space to the health system to support its ambulatory care development strategy and to increase the number of and access to primary care providers throughout the service area.

**Recommendation #25 – Provide economic incentives to enhance recruitment of primary care providers.**

Economic incentives should be provided to recruit primary care physicians and other providers to work and live in the service area. The ambulatory care network development plan requires the recruitment of 120 new physicians. Based upon the tax-free work zones that were designated through Start-Up NY to employees of new businesses established on select SUNY campuses, it is recommended that employed physicians who are recruited to work within the Health Enterprise Zone be given the opportunity to exempt a portion of their income from State taxes for a limited period of time. Voluntary physicians who establish offices within the zone, serve on the medical staff and are integrated into systemwide population health initiatives should be eligible to receive similar incentives.

The service area would benefit if these new doctors lived in the communities they served. Therefore, similar incentives should be provided to include exemption from city taxes for a limited period of time for those primary care physicians and providers, regardless of whether they are employed or voluntary members of the medical staff, if they also establish a primary residence in the service area.

**Recommendation #26 – Provide loan forgiveness programs for primary care physician recruitment.**

Doctors graduating from Brooklyn residency programs should be given loan forgiveness incentives to remain in Brooklyn. On average, over 100 residents in primary care specialties graduate each year from service area hospitals. The health system should be given priority access to current State-funded programs such as Doctors Across NY and Primary Care Services Corporation to provide additional economic incentives to graduating residents and other primary care recruits through educational loan forgiveness programs scaled to a multi-year commitment of employment within the health system.

**Recommendation #27 – Provide housing support for primary care provider recruitment.**

There was a time when physicians lived in the communities in which they practiced. There was a “doctors row” in Bedford Stuyvesant and one on President Street in Crown Heights. Dr. David Rosner, in his 1982 book, *A Once Charitable Enterprise*, discussed the benefit of physicians living within the communities they worked. He noted, “...his involvement in the life of the community strengthened the bonds of trust between him and his patients. The relationship between patient and physician was soon to become more professional and distant. The doctor became an outsider whose authority was
based upon his scientific expertise, not upon his status as a trusted member of the community. Though patients gained much from his increased scientific knowledge, they stood to lose a great deal as a result of the doctor’s physical and emotional distance from them.”

Therefore, special consideration should be given to providing housing support or stipends for both renters and owners as part of a package of incentives to recruit primary care physicians to live and work in the communities they serve.

**Recommendation #28 – Designate the health system and service area to receive priority in awarding government-funded grant programs and contracts addressing social determinants of health.**

Until the Health Enterprise Zone can be defined and formalized, consideration should be given for New York State and New York City to establish pilot programs that designate the communities of central and northeastern Brooklyn priority communities to receive funding in requests for applications/requests for proposals (RFAs/RFPs) issued by government agencies. Respondents that provide evidence of effective linkages to health providers in the service area should receive additional points in the evaluation and ranking process to decide which projects should be funded. In addition to priority designation of the service area, this special consideration could also occur through discrete appropriations or identification of a subset of funds in a larger appropriation to be designated for the Health Enterprise Zone.
A significant number of initiatives have been proposed in this document that can have positive results in transforming four failing hospitals and providing greater value to the communities of central and northeastern Brooklyn. It will take strong governance and effective management, and a number of years, to create new facilities and achieve operational efficiency and higher levels of patient satisfaction. This transformation will include the creation of an ambulatory care network that will provide over 500,000 primary and specialty care visits a year.

Once substantive progress is achieved and performance demonstrated, there may be benefit to celebrating that achievement with a new identity for the constituent members of the health system. Additionally, the path to the future cannot be traveled without the support of an engaged community and its leadership. The need for the health system to effectively communicate during the transformation period cannot be overemphasized.

**Recommendation #29 – Rebrand the health system and its hospitals.**

The board should develop a plan to address the branding of the new health system and its facilities in a way that not only honors the legacy and commitment of 100-plus years of service, but also recognizes a renewed commitment to and investment in the health of the service area residents. However, the rebranding efforts should not be launched until the health system has made visible and substantive progress.

**Recommendation #30 – Create an effective community engagement and communication plan to inform stakeholders about transformation initiatives and progress.**

The community engagement meetings demonstrated the commitment, support and passion that service area residents, community leaders, staff and community physicians have for the hospitals. It is clear that they want them to succeed in improving access to safe, effective, quality care. The meetings also reflected the stronger relationships and bridges that the management teams have developed with the community and other healthcare partners. It is critical to build on this foundation, developing a myriad communication and engagement strategies to keep the community and other stakeholders informed, explaining the importance of key transformation initiatives and continually soliciting their feedback on progress.
The scope of this study includes SUNY Downstate and University Hospital (collectively Downstate). For a variety of reasons, however, few of the recommendations apply to them directly. First, the complex governance and operating structure of Downstate as part of the State University of New York (SUNY) system make it impossible to directly integrate its operations into a non-government-sponsored governance model such as the one proposed for the other study hospitals. It is possible, however, for Downstate to collaborate with the proposed system in providing clinical care, accessing shared support services where appropriate and strengthening its College of Medicine.

The unique tripartite mission of SUNY Downstate which combines medical education, the training of other health professionals, and innovative and critical biomedical research with advanced clinical care provided through University Hospital forms Brooklyn’s sole Academic Health Center (AHC). SUNY Downstate and University Hospital are governed by the SUNY Board of Trustees, which has delegated certain governance powers to a Health Care Board Oversight Committee and a single individual, the president of Downstate. Its operations and contracting activities must conform to New York State policies and procedures. The hospital’s workforce is represented by public employee unions, primarily United University Professionals (UUP), the Public Employment Federation (PEF), the Civil Service Employees Association (CSEA) and the Agency Police Services Unit (APSU) of the New York State Law Enforcement Officers Union. Contracts for its workforce are negotiated not locally but through the Governor’s Office of Employee Relations. Unlike the other study hospitals, University Hospital receives appropriations directly from the State, subject to SUNY board and legislative approval. In addition, SUNY Downstate College of Medicine receives an appropriation of $50 million from New York State, which is also subject to SUNY Board and legislative approval.

The SUNY system itself is beginning to implement a process to enhance the efficiency, effectiveness, coordination, and reach of its academic health programs, for example by appointing a system-wide Chief Officer for Academic Health & Hospital Affairs, who will, among other initiatives, enhance coordination and synergy among SUNY’s health science center campuses. SUNY Downstate is also exploring ways to evolve and transform itself in its role as one of New York State’s three public health science universities, as it searches for a new university president and as it undertakes a focused financial analysis with the assistance of external experts. However, it is also clear that for SUNY Downstate, like for many other public academic health centers serving a high proportion of patients insured by government payers, successful implementation of initiatives will require ongoing support from the State to fulfill its academic mission. This support and additional steps will form the basis for a new long-term strategic plan to be developed by the new president of Downstate when he or she is appointed. As part of that planning process, we expect that Downstate and the SUNY Board of Trustees will take into account the steps described in this study to improve healthcare in the region and make strategic decisions about the best way for Downstate to fulfill its academic mission.
The strategic plan will have to take into account the economics of operating a stand-alone hospital in the service area. Even one with a more complex case mix that commands higher reimbursement rates may not be able to overcome the combination of declining inpatient admissions, unfavorable payer mix, stand-alone hospital rates and a costly operating structure. State support is provided through a combination of direct state appropriation, a separate appropriation for medical malpractice expenses and State provision of the local share of Disproportionate Share Hospital (DSH) payments. The DSH payments now being received by Downstate will be inflated in SFY 2017 and SFY 2018 by non-recurring payments associated with Downstate's involvement with Long Island College Hospital (LICH) in the two years prior to its closure. When DSH payments decline to normalized levels in SFY 2019, Downstate and SUNY management estimate that Downstate will face a significant operating deficit if they are unable to successfully undertake management actions to reduce the operating deficit as compared to their current baseline projections.

The role of University Hospital within the Downstate Medical Center has evolved over the years as Downstate has pursued a number of strategies to strengthen its ability to recruit and retain qualified faculty and serve as the academic teaching referral center for Brooklyn patients with complex tertiary care needs.

Downstate's academic programs and financial support for its faculty are also dependent on its historic relationship with the 600-plus-bed Kings County Hospital Center, one of New York’s largest public hospitals.

Downstate operates an integrated residency program between the two hospitals where approximately 1,000 residents are able to benefit from responsibilities of managing a large and diverse patient base at Kings County and exposure to tertiary care programs at University Hospital. The residency program is among the 20 largest GME programs in the nation. Downstate also has a long-term relationship with the Brooklyn VA Hospital to provide additional exposure to clinical services; it receives financial support from the VA hospital for its faculty.

Downstate serves as an economic engine in Brooklyn, provides career mobility and plays an important role in providing access to service area residents requiring tertiary level care. It prepares a large number of students for careers in medicine, nursing and allied health professions. The medical school is intertwined with the history of healthcare delivery in Brooklyn, having been established as the Long Island College of Medicine in 1860 and then merging in 1950 with the creation of SUNY Downstate. There are more physicians practicing in New York City and New York State who graduated from Downstate than from any other medical school.

University Hospital must be taken into account when developing a healthcare transformation plan for central and northeastern Brooklyn. University Hospital shares the service area with the other hospitals, and over the past years Downstate has had clinical relationships with one or more of the hospitals, primarily Kingsbrook and Brookdale, which are 0.9 and 1.2 miles, respectively, to the east of the Downstate campus.

As our understanding developed of the challenges accompanying the transformation of the other four hospitals, it became clear that in the near term Downstate must continue its reliance on University Hospital to provide for the education and training of students and residents. Essentially, it is a question of timing. Downstate leadership expressed a valid concern that it could not plan to restructure its medical school curriculum and GME training programs without dependence on University Hospital until such time as there is concrete evidence that the new health system has come together, developed an ambulatory care network, rebuilt its inpatient facilities and created opportunities for Downstate to augment financial support for clinical faculty that today is provided through University Hospital.
The long-term strategy for SUNY and Downstate leadership should recognize the growing challenge of maintaining an inpatient-centric model of training and care delivery and the need to create a more sustainable clinical model to fulfill the academic mission of the medical center. Chief among these challenges are:

- Reductions in DSH support.
- A declining inpatient revenue stream.
- Increased competition from other health systems and providers.
- Pressure on the Downstate faculty practice plan as declining physician payments shift from specialty to primary care physicians and there is increased bundling of physician and hospital payments.
- Underinvestment in an aging physical plant that probably needs to be entirely rebuilt.
- Cross subsidization of GME and University research funding from clinical activities.
- The financial legacy of the failed LICH hospital acquisition.
- An organizational and statutory structure that creates layers of decision making and prevents University Hospital from acting quickly.
- Labor and generous New York State pension and benefit costs that account for over 70 percent of total operating expenses.

To add to these challenges, Downstate’s neighboring affiliate in providing medical training is Kings County, a hospital operated by Health + Hospitals; this system itself is looking to close a projected operating deficit in excess of $1 billion. In response to this projected deficit, a 2016 report (One New York; Health Care for Our Neighborhoods, Transforming Health + Hospitals) recognized the shrinking inpatient market and the need to restructure its hospitals. Although the report does not make specific recommendations concerning Kings County, one can only infer that it will place greater pressure to attain operating efficiencies and may adversely affect the Downstate relationship to the extent that Kings County chooses to perform more services itself to maximize reimbursement revenue. Nevertheless, the pressures both institutions experience may provide a basis for them to come together in a new type of relationship.

We acknowledge the critical importance of continuing to make Downstate, as an academic health center, competitive and attractive to recruit and support faculty. There are many challenges, such as faculty compensation, supplements earned through private practice and institutional support, funding to develop clinical programs and the ability to conduct research in an environment aligned with their professional vision and aspirations. The Downstate model incorporates a hospital that is absolutely owned and controlled in every dimension. The pressing question, however, is whether this model can be sustainable without extraordinary State and federal financial support.

We acknowledge the critical importance of continuing to make Downstate, as an academic health center, competitive and attractive to recruit and support faculty.

A practical departure point to reorient SUNY’s thinking may be found in the June 2013 document prepared by Downstate entitled, A Call to Action, Sustainability Plan for SUNY Downstate Medical Center. The plan requested legislative and executive actions, support and long-term financial and other commitments to spin out University Hospital from under SUNY into a public benefit corporation that would support the formation of a new healthcare network in Brooklyn. The belief at the time was that this new entity would create a critical mass of providers around University Hospital and would ultimately result in a financial turnaround permitting University Hospital to approach or achieve sustainability.
In crafting its Sustainability Plan, the authors were guided by a quote credited to Albert Einstein: “The world we have created today as a result of our thinking thus far has problems which cannot be solved by thinking the way we thought when we created them.” The plan identified several thoughtful criteria to guide decision making, which have relevance to the current challenges. The authors asked: Does the plan:

- Support the vital education mission of Downstate?
- Protect and commit resources to the College of Medicine, GME programs and other healthcare professional schools?
- Consider the important role of Downstate in driving quality of care and the supply of medical and health professionals?
- Support research, particularly as it relates to reducing health disparities in the community?
- Remove barriers to permit urgent action at University Hospital to reduce losses and improve efficiency?
- Maximize cost-saving activities?
- Support operating models that offer potential for long-term sustainability?
- Address community health needs and improve individual health, including metrics to track progress?
- Expand primary care and prevention strategies?
- Position healthcare in Brooklyn for federal health reform?
- Include clinically integrated providers in the market to impact care delivery, the cost structure and health status?
- Drive long-term economic revitalization in Brooklyn?

These criteria still have relevance and can be useful in identifying additional options that can support the academic mission of Downstate. We believe there are recommendations that can strengthen University Hospital in the short term while SUNY and Downstate leadership craft a long-term plan to guide the evolution of University Hospital in the new Brooklyn ecosystem. Such a solution may permit fulfillment of Downstate’s academic mission in partnership with its neighboring academic affiliate, Kings County Hospital Center, the four other study hospitals and potential new affiliations.
Recommendation #31 – Downstate should be encouraged to engage in the development of the new health system, strengthen its relationship with Kings County and support its explorations of new relationships with other partners.

The State should continue to support SUNY Downstate in its academic health center role for Brooklyn and work with SUNY to identify innovative strategies and funding mechanisms to transform, improve and support its operations. Given the changes occurring in the service area, it is recommended that, in the near term, University Hospital focus on streamlining its current operations in order to improve service quality and reduce its reliance on extraordinary State subsidies. Over the long term, Downstate should focus on developing a strategy to transform its academic and clinical programs to align its long-term interests with those of its affiliate partners and the new health system proposed by the study. We believe a new partnership can effectively respond to all criteria identified as critical to its mission and future. Thus, Downstate should develop a strategy that is built around the following actions:

• Strengthening the clinical relationship with Kings County and the Brooklyn VA.
• Partnering in the development of clinical programs, academic programs, tertiary access pathways and ambulatory care networks with the new health system.
• Reestablishing its academic and clinical relationships with its historical affiliates such as Lutheran, Maimonides, Methodist and Staten Island University Hospitals.
• Exploring relationships with other providers in Brooklyn, throughout the metropolitan region and beyond.

We recognize the challenges of our University Hospital colleagues, the limitations on their decision-making powers and the complexity of interactions at both the campus and the SUNY central level in order to implement the necessary actions once decisions are made. Once new leadership is appointed at Downstate, consideration should be given to developing a streamlined process at both the campus and SUNY central level to consider the future role of University Hospital and the nature of the commitment for Downstate to participate in the development of the new health system and explore additional relationships as described above.

In the interim, there are significant steps that University Hospital could take that would permit it to realize increased operating efficiencies by accessing the shared services infrastructure of the new health system. For example, University Hospital could participate in the development of a shared core regional laboratory, and there would be significant benefit if University Hospital and Downstate’s physician practices were able to access revenue cycle services and participate in the development of a regional ambulatory care network. As the new health system develops its shared services infrastructure, University Hospital leadership should be invited to join in the planning to determine which areas of collaboration may provide value to SUNY Downstate, and vice versa, how SUNY Downstate may bring value to the new health system, in terms of clinical expertise, academic training and innovative clinical research. In this regard, University Hospital and the new system should collaborate closely on decisions about the development of clinical services serving residents of central and northeastern Brooklyn.
The health system will have to confront many facility, infrastructure and technology challenges over the next decade and require significant capital investments to successfully address these challenges.

These investments can be primarily classified into one of four categories:

1. Ambulatory care network development
2. Hospital infrastructure and safety
3. Restructuring of inpatient clinical services and program growth
4. Enterprise-wide information technology

New York State has provided an extraordinary authorization for the investment of $700 million to help transform healthcare in central and northeastern Brooklyn. However, it will be necessary for the proposed regional health system recommended by this study, as it is for all healthcare systems, to carefully plan, prioritize and allocate capital funds as part of its strategic planning and annual budget development and approval processes.

A detailed assessment of current facilities and cost estimates to address facility and building systems deficiencies was beyond the scope of the current study. However, for new investments in ambulatory care and information technology, Northwell was able to provide a range of cost estimates based on recent project experiences. With respect to facility and infrastructure investments we have illustrated the type of projects required and estimated the magnitude of investments that the new health system will have to undertake over the next decade.

There should be no misunderstanding that the amount of capital required to support the goals of the transformation plan beyond the next five years will significantly exceed the State’s $700 million investment. We expect the State will continue to provide the health system access to capital, as it has done previously, through a variety of capital grant, capital matching or financing guarantee programs.

For example, Wyckoff Hospital was recently awarded $58 million to fund its current health center and ambulatory care services program as part of Governor Cuomo’s $1.2 billion statewide investment through the Capital Restructuring Financing Program.

**Ambulatory Care Network Development**

The objective of this study is to develop a plan to transform the organization and delivery of health services for the communities of central and northeastern Brooklyn. The most important transformational element of this plan is the development of a comprehensive ambulatory care network to significantly expand the availability of primary care services to service area residents. This investment is integral to the health system’s strategy to adapt its business model to value-based reimbursement and to improve the health of the communities it serves.

The proposed ambulatory care development plan recommends the development of a coordinated network of 36 new facilities. This network includes urgent care, primary care and specialty services organized around community-based diagnostic and treatment care facilities. We have estimated the capital cost of these facilities to be approximately $226 million, based upon Northwell’s experience with projects of similar types over the previous three to five years.
Facilities similar to those being recommended for inclusion in the plan are or are about to become operational and can be visited by clinical and management leadership to gain a better understanding of how they function as part of an integrated ambulatory care network. (See Figure 39, Ambulatory Care Development Plan – Preliminary Capital Cost Estimates.)

It is important to note that the capital estimates appearing in Figure 39 are preliminary in nature. Northwell has not had the opportunity to conduct due diligence on all the underlying assumptions inherent in the ambulatory care development plan. Therefore, the facility cost estimates are accompanied by the following caveats:

- Unit project costs for development of ambulatory care facilities are based upon actual costs incurred in development of similar facilities constructed in the last five years throughout the Northwell service area.
- Land acquisition costs are excluded from the estimate.
- All construction project costs are based upon a union workforce at prevailing wage rates.
- The urgent care, primary care and specialty practice facilities would be operated as physician practices and may not be built to Article 28 standards. Building these facilities to Article 28 standards will add 20 to 30 percent to the project cost.
- A final determination will need to be made regarding Article 28 license once the relative size of the managed Medicaid population is compared to the remaining Medicaid fee-for-service population and if any changes will be made to Medicare’s site-neutrality rules, which reduce reimbursement for hospital-sponsored ambulatory care facilities located off site from the main hospital campus. The ambulatory surgery, cancer and imaging centers will be constructed to Article 28 standards.

### Figure 39
Ambulatory Care Development Plan – Preliminary Capital Cost Estimates

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<tr>
<th>Facility Type</th>
<th>Project Cost $/sq. ft.</th>
<th>Size (sq. ft.)</th>
<th>Unit Cost (millions)</th>
<th>Total Number of Practice Sites</th>
<th>Total Program Cost (millions)</th>
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<td></td>
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<td><strong>$226.1</strong></td>
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• Estimates do not include escalation for inflation, which would typically be projected to the midpoint of construction.
• Preliminary assumption is to develop facilities to recruit approximately an additional 120 primary care and specialty physicians/providers over the next five years.

In addition to the development of new ambulatory facilities, it is expected that one or more of the current ambulatory care facilities may require capital investment in order to expand capacity, improve operating efficiency or enhance the customer experience. However, detailed estimates for these facilities were beyond the scope of the current study. Therefore, based upon discussions with management, we have included a placeholder capital requirement of $20 million for this aspect of the ambulatory care network development plan, bringing the total to approximately $245 million.

In order to move to a community-centric healthcare delivery system, we recommend that approximately $245 million of the $700 million available be dedicated to the development of an ambulatory care network in the service area. The remaining $455 million has to be prioritized for facility infrastructure stabilization, phased restructuring of clinical services and the development of an information technology platform throughout the enterprise. The other high-priority initiatives that the health system will have to accomplish with the balance of the capital to implement the recommendations in this study are identified below.

Create a Safe Environment to Provide Health Care

An assessment of current hospital facilities was not conducted as part of this study and thus, we are unable to definitively estimate the total amount of capital required to support the rebuilding of the hospital campuses to accommodate the restructuring of clinical services. However, based upon review of information provided by senior management, interviews and site visits, we have concluded that the inability to access capital combined with minimal preventive maintenance has by necessity resulted in a “fix-when-fail” approach to facilities and equipment. As a consequence there is a need to make significant infrastructure investments to provide a stable foundation upon which to rebuild the hospitals in a prioritized manner over the next decade.

The most important transformational element of this plan is the development of a comprehensive ambulatory care network to significantly expand the availability of primary care services to service area residents.

There are significant infrastructure issues that must be addressed at each facility in order to facilitate and support the clinical program restructuring and the ongoing operations. Many of these investments will never be visible to the public as they address a variety of mission-critical but hidden elements that include environmental, emergency generation, mechanical, electrical and plumbing systems at each facility. Many of these issues are summarized in each facility’s Statement of Conditions, a self-assessment conducted prior to an accreditation survey. The most problematic areas in the hospitals have been cited by the DOH or The Joint Commission and require capital for remediation. Additionally, given the overall age of the facilities, any capital improvements and/or repairs are complicated by the presence of lead paint and asbestos on fireproofing, pipe wrapping and floor tiles.

The most comprehensive facility analysis was conducted of Brookdale in 2012 as part of a proposed consolidation with Kingsbrook. This plan, with many caveats, assumptions and exclusions, projected that Brookdale alone would require approximately $300 million to address its infrastructure issues over the 10-year period 2013-2022. Included among the infrastructure investments the Brookdale management team proposed was
development of a distributed generation power plant that would not only generate energy to support a fully rebuilt Brookdale but could also generate a surplus that could be sold back to the energy grid or provide electrical credits for the other health system facilities. A number of health systems are working with New York State’s energy agencies to explore distributed generation and micro-grid projects, and these options should be fully explored for all of the study hospitals. We have been told that experts estimate a positive return on investment on these energy-related projects as they typically result in a reduction in operating expenses.

Interfaith’s air-conditioning system has failed, and it is using temporary chillers and power-generation equipment stationed in its parking lot. Interfaith’s current electrical systems, including the availability of emergency power and separation of electrical distribution branches, need to be improved to meet current code. A similar issue was identified at Kingsbrook in 2016, and their consultants estimated the cost of a solution at approximately $40 million to meet current DOH code requirements. Some of the infrastructure projects, for chillers, boilers, fire alarm systems, etc., require significant capital, in the range of $5 to $10 million; many are smaller, under $1 million to up to $3 million. The point is that as part of a comprehensive master facility assessment and planning initiative the mission-critical infrastructure needs must be inventoried, planned for and phased to support implementation of the clinical transformation efforts.

In this regard, Brookdale’s and Interfaith’s physical plants need to be stabilized and improved first to accommodate the programmatic restructuring with Kingsbrook. Wyckoff has a number of similar infrastructure needs, but there is no major system failure as with Brookdale and Interfaith and their HVAC systems. With respect to Kingsbrook, given that the recommendation is to consolidate its acute services into the other facilities over time, it will also require investments to support operations of the Rutland Nursing Home, the emergency department and ambulatory services on its campus.

Based on the foregoing, the collective need for infrastructure investments can easily consume a significant portion of the $700 million if the work is performed as a series of stand-alone projects. As a practical matter, we would assume that many of these projects would be incorporated into larger projects that would accompany the rebuilding of the clinical facilities as part of a facility master plan to restructure inpatient services among the hospital campuses. Not all of these projects could be completed over the next five years with available funding, but they should be funded within six to 10 years if not earlier.

**Restructure Inpatient Programs and Rebuild Facilities**

In order to transform healthcare delivery and restructure the inpatient bed capacity, there are several projects that are critical. The majority of the investment will occur at Brookdale and Interfaith, although there are significant program investments to be made at Wyckoff and Kingsbrook. Additionally, capital will be required to support the development of a shared services infrastructure.

At one time in its history, Brookdale possessed the infrastructure to support the operation of a 500-bed facility. However, as the demand for inpatient care declined, some of the bed space was used to support expansion of clinical programs and management functions. The majority of its current patient rooms do not meet modern-day codes; furthermore, any significant renovations of the existing units (beyond aesthetics) would most likely trigger a code compliance action by the DOH that would mean significant capital investment, a loss of beds and increased operating costs. As a consequence, the major project proposed for Brookdale will be the construction of a new tower to contain an expanded emergency department, a new surgical suite and recovery area, intensive care units and space to replace medical/surgical units. Interfaith and Wyckoff will require rebuilding of patient care units as well as expansion and modernization of their emergency departments.
Examples of major projects appears in Figure 40, **Examples of Major Facility Projects**. This is not an exhaustive list; it is provided to illustrate the type of projects required to rebuild the hospitals over the next decade. Although we were unable to provide precise project cost estimates, we have estimated the magnitude and range of some major facility projects based upon Northwell's experience across its 21 hospital facilities. (See Appendix E). These projects will require a substantial portion of available capital funds and underscores the need for the health system to continue to be able to access capital beyond the current $700 million to complete its transformation.

### Create an Enterprisewide Information Technology Platform

The health system will need to make critical infrastructure investments in technology, applications and equipment to provide a strong foundation for clinical and operational integration, program growth and the readying of the health system to thrive in the new world of payment reform and population health. In particular, there will be a need to establish a common information technology platform to effectively support clinical decision making, improve quality and patient care outcomes, develop effective care management capabilities, attain operating efficiencies through the shared services infrastructure and optimize revenue cycle activities.

While there have been recent investments in an electronic medical records system (Brookdale has implemented EPIC) and cloud-based IT applications, the underlying network infrastructure, equipment, security and application requirements have to be either upgraded or completely replaced at other facilities. The health system has to undertake a process similar to that for facilities to plan, acquire, integrate and operate information technology applications across the enterprise. These activities will require a significant initial capital expenditure to get to an acceptable operational baseline as well as an annual capital investment to adequately maintain the infrastructure, acquire system upgrades and support the growth of the health system. It is projected that the health system will require between $140 and $190 million to repair, upgrade or acquire infrastructure, standardize applications throughout the hospitals, permit shared services consolidation and integrate those activities with a new ambulatory electronic medical record. As the IT platform is being developed the health system will also need to acquire and integrate advanced telehealth and digitally enabled capabilities to enhance access to care management as well as promoting health literacy and patient/community empowerment of self-management.

Although this investment in health IT is indispensable for achieving the goal of better health outcomes, there will be little opportunity to realize direct IT operational savings associated with these investments, as additional staff, will be required to support

<table>
<thead>
<tr>
<th>Major Facility Projects</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Brookdale</strong></td>
</tr>
<tr>
<td>- Emergency department expansion</td>
</tr>
<tr>
<td>- Surgical suite renovation and expansion</td>
</tr>
<tr>
<td>- Intensive care units (CCU and ICU)</td>
</tr>
<tr>
<td>- Patient unit upgrades</td>
</tr>
<tr>
<td>- HVAC systems and infrastructure</td>
</tr>
<tr>
<td>- Power plant/co-generation</td>
</tr>
<tr>
<td><strong>Interfaith</strong></td>
</tr>
<tr>
<td>- Emergency department expansion</td>
</tr>
<tr>
<td>- Patient unit upgrades</td>
</tr>
<tr>
<td>- CPEP Unit Relocation</td>
</tr>
<tr>
<td>- Geriatric Psychiatry Unit</td>
</tr>
<tr>
<td>- HVAC systems/chiller</td>
</tr>
<tr>
<td><strong>Wyckoff</strong></td>
</tr>
<tr>
<td>- Emergency department expansion</td>
</tr>
<tr>
<td>- Cardiac PCI program</td>
</tr>
<tr>
<td>- Patient unit upgrades</td>
</tr>
<tr>
<td>- HVAC systems and infrastructure</td>
</tr>
<tr>
<td><strong>Kingsbrook</strong></td>
</tr>
<tr>
<td>- Rehabilitation unit</td>
</tr>
<tr>
<td>- Ambulatory imaging/MRI upgrades</td>
</tr>
<tr>
<td>- RHCF infrastructure</td>
</tr>
</tbody>
</table>
state-of-the-art commercial applications at an increased number of community locations. The incremental expense to staff and maintain the systems will increase the IT operating budget by a minimum of $8 to $10 million annually over the projection period.

Projected Capital Investments Exceed Available Capital Funding

It should be clear that the capital investment necessary to meet the needs of the proposed system beyond the next five years will significantly exceed the $700 million allocated for this purpose. There will be an immediate need for the health system and State to create a long-term plan for capital access from both public and private sources during the transformation period to continue implementation of the Transformation Plan. Once the health system is formed, it must immediately begin the development of a 10-year master facility and technology plan to prioritize the capital projects and determine how to best allocate available capital for information technology, hospital infrastructure and clinical service restructuring projects. Ambulatory care development is the highest priority, followed by the rebuilding of the Brookdale and Interfaith campuses. The investment in these campuses is critical to achieving the operating savings generated by the restructuring of the inpatient capacity from Kingsbrook and to supporting the expansion of primary care capacity. Additionally, if the hospitals are to win back the trust of the community they must provide a safe, modern, patient-centric environment in which to render care.

Identifying and securing additional capital has to commence when the health system leadership has demonstrated to the community, its elected representatives and the DOH that they have been responsible stewards of the initial $700 million investment, begun the build-out of the ambulatory care network, restructured clinical services among the campuses and demonstrated that these efforts have improved the quality of care and level of patient satisfaction. Fortunately, New York State has a recent history of developing programs to provide capital grants to healthcare facilities for the purpose of transforming New York’s aged healthcare infrastructure. We assume this policy will continue beyond the transformation period, particularly for facilities that are highly dependent on Medicaid and unable to access capital markets.

The health system will need to make critical infrastructure investments in technology, applications and equipment to provide a strong foundation for clinical and operational integration, program growth and the readying of the health system to thrive in the new world of payment reform and population health.
I. Operating and Capital Commitments

The level of support required through State operating funds and federal Medicaid reimbursement by the four hospitals for SFY 2017 is expected to be over $300 million. Leadership and management may impact the amplitude of the problem but they did not cause it. A critical problem is a disproportionate dependence on governmental payers who do not always reimburse or recognize the full cost of providing care, with the resultant inability to generate a surplus the health system could put back into the organization to build and maintain facilities, grow programs and support its workforce.

As these hospitals failed to adapt to shifts in service area payer mix and changes supporting a patient-centric rather than hospital-centric care delivery model, they found themselves unable to invest in people, programs and facilities. This in turn decreased the hospital’s attractiveness to voluntary physicians and commercially insured patients, which led to increased operating losses and fueled a cycle of continuous decline. These factors, along with the historically low number of residents in their service areas with commercial insurance, have resulted in a government-dependent and self-pay payer mix approaching 90 percent of inpatient discharges. In today’s reimbursement environment, viable hospitals have between 20 and 30 percent of their payer mix attributed to commercially insured patients, which permits a break even or a small operating surplus. This dynamic is absent from the operating profiles of the hospitals.

It should also be noted that a differential in the Medicaid payment rate is not the issue. During the community engagement meetings several persons voiced their belief that the hospitals receive lower Medicaid rates than other hospitals. The fact is that when the Medicaid rates are adjusted for case mix index and wage equalization factors, the capital add-on (this amount reimburses a facility for a portion of the capital it has invested in facilities and equipment) and the GME add-on (this amount recognizes costs associated with education) are removed, Medicaid rates of the study hospitals are comparable to those of other community hospitals. (See Figure 41, Medicaid Rates for Select Brooklyn and Manhattan Hospitals, 2015.)

Until such time as the hospitals are rebuilt, able to invest in the development of an ambulatory care network, recruit physicians and other providers, build quality clinical programs and attract those commercially insured service area patients who now go elsewhere, the hospitals will continue to be dependent on subsidies to supplement their operations for the foreseeable future.

A move to value-based purchasing may provide the ability to earn greater revenue when compared to fee-for-service reimbursement methodologies. As more Medicaid beneficiaries move from Medicaid FFS to Medicaid Managed Care programs, there will be limited ability of the hospitals to financially benefit from the shift to value-based purchasing unless the health system is able to negotiate and receive fair prices for the services it provides. At this point it is difficult to project how successful the new health system would be in its managed care
negotiations. Therefore, given the need to transform the clinical and management operations to participate in value-based reimbursement methodologies, it will be particularly important for the health system to acquire through partnership or directly develop capabilities in managing risk and population health and to participate in contracting networks, which may provide additional value. In doing so, medical management will require both physician leadership and a “boots on the ground” approach to case management.

There must be an organizational entity designated by the health system to be responsible for enhancing care delivery performance for all of its risk-based reimbursement programs. This entity should be focused on restructuring the clinical model of care so as to reduce avoidable costs through improved patient management and engagement, removing barriers to appropriate care, eliminating unnecessary or unwanted care and migrating from episodic care to a continuum of care.

**Recommendation #32 – Develop a comprehensive payer strategy aligned with the value-based payment roadmap.**

The health system must execute a comprehensive strategy to serve its core market while it attempts to build programs that permit it to diversify its payer mix away from government payers. Although there is a significant commitment by the State to provide operating subsidies, it is expected that such subsidies can be reduced once major elements of the Transformation Plan have been fully implemented. Therefore, the health system must begin to develop programs with both government and commercial payers that permit it to receive fair payment rates that recognize appropriate costs of providing services and allow the health system to invest in its people, services, facilities and equipment.

The health system will be challenged to participate in value-based reimbursement programs as well as exploring opportunities that accompany demonstration programs such as the Innovators Payment Program. The ability of the health system to effectively assume and manage risk will be limited during the transformation years. If the health system enters into value-based purchasing contracts that contain PCMH Level 3 downside risk before it is ready to successfully manage that risk, the State will need to increase its operating support to cover any financial losses incurred.
Recommendation #33 – Develop a managed care contracting entity.

The health system must develop a managed care contracting entity that would be responsible for joint fee-for-service and value-based contracting for the hospitals and its independent practice association (IPA). There may be opportunities to collaborate with University Hospital, CCB partners and a network of community-based providers such as the FQHCs. This contracting vehicle can stimulate the development of important partnership opportunities to better meet the healthcare needs of the service area communities. As part of its transformation, the health system must position itself to accept and manage value-based contracts.

This is where continuing its relationship with Maimonides and Community Care of Brooklyn (CCB), the Maimonides-led PPS of which Interfaith, Kingsbrook and Wyckoff are members, may provide great value. In a post-DSRIP environment, the CCB can support essential services, both as a potential contracting vehicle and as a care management entity, to provide needed infrastructure for the health system to participate in value-based programs.

The health system should also explore contracting opportunities during the transformation period outside of its CCB relationship, with IPAs it develops or other provider networks it may join.

Recommendation #34 – Provide support for enhanced Medicaid rates.

To the degree Medicaid FFS continues to be prevalent in the service area, it will be beneficial for the DOH to maximize its reimbursement rates to the extent permitted by law and regulation.

The health system should qualify to receive enhanced Medicaid rates under the DOH’s Value Based Payment Quality Improvement Program (VBP-QIP) due to its transformation efforts. When the hospitals in central Brooklyn begin to consolidate under a single Article 28 license, an analysis will be required to assess which entity should serve as the successor entity or whether there is benefit to establishing a new entity with a new rate calculation.

As the DOH begins to think about its next Medicaid waiver, which provides CMS the authority to approve demonstration projects, consideration should be given to establishing a unique funding stream that recognizes the Medicaid-dependent, safety net mission of the new health system and others like it. There is a need to treat them differently, establish a different funding arrangement that relieves them from dependence on extraordinary State subsidies and, in return, expect higher levels of efficiency and accountability.
Recommendation #35 – Fund working capital to provide 30 days’ cash.

As part of the long-term Transformation Plan, a portion of the operating subsidy must be funded in such a way that the hospitals are provided sufficient working capital to allow the management team to act on the complex challenges that accompany implementation. We have often heard stated that too much senior management time is spent just barely managing cash flow, waiting for a check from a managed care organization or justifying a funds transfer from New York State. It is vital that capital funds can be accessed to manage cash flow requirements, the policies and monitoring requirements that will accompany the funding of capital notwithstanding.

A target threshold would be 50 days, or $207 million, but, recognizing the significant continued support the State provides to the four study hospitals, we recommend a minimum threshold to be 30 days, or $124 million. Thus, there will be a need to separately fund days of cash on hand as part of the ongoing operating support the health system will receive.

Recommendation #36 – Protect capital dedicated to supporting ambulatory care development.

The capital entrusted to the health system must be isolated from operations and only used for its intended purpose. That is why it is critical that there be a separate suballocation dedicated to and monitored for ambulatory care development, as the projected inpatient and core infrastructure capital needs on the four campuses could easily consume an amount of capital that would make it impossible to fully fund ambulatory care.

Capital funds must be balanced between the community-based and inpatient healthcare delivery system transformation priorities. Service area residents currently have access to emergency and inpatient care, but community members in every previous study and survey identified primary and ambulatory care development as among the highest investment priorities. Successfully responding to this glaring community deficit will have a profound impact on enhancing access and improving community health status. It is for this reason that the capital allocated to support ambulatory care development must be protected and carefully invested.

Recommendation #37 – Provide capital access beyond the initial $700 million appropriation in later years.

The potential availability of $700 million in capital support provides an extraordinary opportunity to begin to address facility infrastructure issues, invest in information technology and replace and upgrade aging clinical equipment so as to provide contemporary inpatient facilities, right-sized for future need, as well as to build a major ambulatory care regional presence within the service area. However, as large and generous as this amount is, it will not fully support the longer-term capital needs of the transformed health system. In the near term, the health system will not be able to independently
access the capital markets and will be dependent on New York State to continue
to fund capital investments and program growth. Over the past decade, New
York State has authorized a number of capital grant programs to support the
modernization and transformation of its aging healthcare system. There is
an expectation that there will be a continuation of this practice, and that the
proposed health system will be successful in accessing such funds.

If additional funds are not available throughout the transformation period,
there is a great risk that the facilities may begin to deteriorate and revert
back to being unsafe. Maintaining a safe environment requires the funding of
general maintenance, equipment and technology upgrades and replacement,
and the ability to respond to the inevitable act of nature or unexpected
crisis expenditure. It is critical for New York State to continue to develop
opportunities to provide capital to protect the facility and program investments
that will lead to gains in quality and operating performance the health system
hopes to achieve.
A financial model of the Transformation Plan was developed with the assistance of Kaufman Hall & Associates, LLC. This firm was retained by Northwell as a member of the project team on the basis of its prior work with the One Brooklyn Project, work on behalf of Interfaith, Kingsbrook and Wyckoff and support to the Maimonides CCB.

A baseline financial projection was prepared based upon detailed revenue and expense data provided by the hospitals. This projection depicted a multi-year status quo run-out of each organization’s performance on an individual and consolidated basis for all operating entities. The starting point for the projection is their actual performance validated through the hospital’s 2015 audited financial statements and expected 2016 performance provided by either unaudited annualized year-to-date financial statements or management’s year-end projections as of September, 2016.

The baseline projections were developed for the period January 1, 2017, through December 31, 2021, utilizing assumptions (volumes, revenue and expense inflation, capital, working capital, debt service) derived from Kaufman Hall’s prior work efforts. To establish a true baseline run-rate for modeling purposes, existing State support payments provided through the Value Based Quality Improvement Program (VAPAP), the Interim Access Insurance Fund (IAAF) and VBP QIP payment programs in 2015 were not included in revenue after 2015. (See Figure 42, Supplemental State Support Payments, 2014-2015).

A summary of key volume and revenue expense assumptions appears in Figure 43, Key Financial Projection Assumptions – Volumes and Inflation. As part of the baseline assumptions, an amount to fund capital expenditures for maintenance was not included above current levels and no provision was made for funding major infrastructure or facility investments beyond the $700 million provided through the Kings County Health Care Facility Transformation Program. The baseline projections do not reflect implementation of independent management strategies, performance improvement initiatives, additional support payments by the State, changes in payment methodologies, competitive marketing factors or restructuring of current liabilities. The hospitals have approximately $308 million in non-union pension and workers compensation liabilities and other long-term liabilities of $174 million. The assumption is that payment of these and current liabilities will be included in the new health system’s annual operating budget, which will continue to be partially supported by the State to offset the losses. However,

\[
\begin{array}{|c|c|c|}
\hline
\text{Hospitals} & \text{2014} & \text{2015} \\
\hline
\text{Brookdale} & $142.4 & $75.9 \\
\text{Interfaith} & $46.0 & $48.2 \\
\text{Kingsbrook} & $16.2 & $42.5 \\
\text{Wyckoff} & $7.3 & $33.2 \\
\hline
\text{Total} & $211.9 & $199.8 \\
\hline
\end{array}
\]

Figure 42

Note:
1. Support payments include above the line operating and below the line non operating state appropriations.

Source: Audited and Internal Hospital Financial Statements
approximately $170 million of Brookdale's long-term debt liabilities (including the current portion) associated with the hospital’s obligations under the DASNY Secured Hospital Bond and Health Facility Restructuring Pool programs are expected to be discharged in return for a transfer of real estate and other secured assets to DASNY, which will be leased back to Brookdale.

The outstanding debt at Kingsbrook and Wyckoff will continue to be serviced by the new health system and will be included as well in the annual operating budget supported by the State.

A summary of the baseline operating projection for the period 2017 through 2021 appears in Figure 44, Independent Baseline Projections for Each Organization ($ millions). The projected operating performances of the four hospitals have been consolidated separately from that of University Hospital.

The annual funding gap that is composed of projected operating losses for the four hospitals is projected to be $326 million in 2017, increasing to $405 million by 2021.

The impact of the Transformation Plan was modeled based upon the following factors:

- Capital required to create a shared services infrastructure and a new information technology platform.
- Expense reductions realized through shared service efficiencies.
- Phasing of capital investment to develop an ambulatory care network and facilities and infrastructure improvements to restructure clinical services within the health system.
- Operational impact of a reduction of 773 FTEs associated with restructuring inpatient services, use of the 5 percent vacancy factor due to staff turnover and retirements and the addition of 844 FTEs to be employed in the ambulatory care network.
Figure 44
Independent Baseline Projections for Each Organization ($ millions)

<table>
<thead>
<tr>
<th>Organization</th>
<th>Expected 2016</th>
<th>Projections ($ Millions)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>2017</td>
<td>2018</td>
</tr>
<tr>
<td>Brookdale</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total Operating Revenue</td>
<td>$450</td>
<td>$458</td>
</tr>
<tr>
<td>Total Operating Expense</td>
<td>$589</td>
<td>$604</td>
</tr>
<tr>
<td>Operating Income (Loss)</td>
<td>(140)</td>
<td>(146)</td>
</tr>
<tr>
<td>Kingsbrook</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total Operating Revenue</td>
<td>$230</td>
<td>$235</td>
</tr>
<tr>
<td>Total Operating Expense</td>
<td>$287</td>
<td>$295</td>
</tr>
<tr>
<td>Operating Income (Loss)</td>
<td>(56)</td>
<td>(60)</td>
</tr>
<tr>
<td>Interfaith</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total Operating Revenue</td>
<td>$166</td>
<td>$164</td>
</tr>
<tr>
<td>Total Operating Expense</td>
<td>$220</td>
<td>$223</td>
</tr>
<tr>
<td>Operating Income (Loss)</td>
<td>(54)</td>
<td>(60)</td>
</tr>
<tr>
<td>Wyckoff</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total Operating Revenue</td>
<td>$267</td>
<td>$273</td>
</tr>
<tr>
<td>Total Operating Expense</td>
<td>$324</td>
<td>$332</td>
</tr>
<tr>
<td>Operating Income (Loss)</td>
<td>(57)</td>
<td>(60)</td>
</tr>
</tbody>
</table>

Source: Kaufman Hall & Associates, LLC Analysis

- Achieving a modest LOS reduction at each hospital ranging between 0.1 and 0.5 days.
- Change in payer mix over the projections period that moves from the current 90 percent/10 percent government/commercial payer mix in 2015 to an 80 percent/20 percent mix by 2021.
- Funding a minimum of 30 days of cash for each organization to provide ongoing funds for working capital and other short-term liabilities.

As was noted in the discussion of facility investments, the projected capital needs for the health system are in excess of the available $700 million appropriation. As a practical matter it will take up to 18 months or more to assess the facilities, create a master facility plan, develop construction documents for the major projects and secure all the necessary approvals to commence construction. Therefore, although the model assumes the $700 million would be spent in the next five years, it is highly likely that it will be committed but not fully expended during that time period. For the purposes of creating the model, the high-priority projects were selected that would facilitate the restructuring of the clinical services between the campuses and address critical path infrastructure issues. In doing so, the model includes $290 million for the facility and infrastructure projects, $245 million for ambulatory care development and $165 million for information technology. A summary of the phasing of the capital investment for the four study hospitals appears in Figure 45, Summary of Capital Requirements Over Five Years.

Therefore, when the operating and capital requirements for the four voluntary hospitals are compared to the baseline projections, the cumulative total operating deficit over the five-year period declines by $267 million, from $1.823 billion to $1.556 billion. (See Figure 46, Future State Model: Five-Year Operating Projections Comparison, 2017-2021.)
In essence, the run-rate of State support required to operate the hospitals will decline by $117 million a year by 2021 from the expected baseline growth level and the balance will be used to support a transformed healthcare delivery system. However, these savings are dependent on consolidation of shared services, investments in information technology and infrastructure for ambulatory care expansion as the inpatient facilities are restructured. Once these investments are made, the savings realized through shared services and clinical restructuring will offset the increase in losses incurred from an expanded ambulatory care network and deployment of an enterprisewide information technology system. The balance of savings will support improvements in quality, the organization of clinical services, the attainment of operational efficiencies and the provision of care in new or improved facilities, all of which should result in higher levels of patient satisfaction. Most importantly, there will be a significant investment in the creation of an ambulatory care network that will shift the locus of care into the service area communities, providing more than 500,000 additional primary and ambulatory care visits yearly.

Figure 45
Summary of Capital Requirements Over Five Years

<table>
<thead>
<tr>
<th>$ Millions</th>
<th>2017</th>
<th>2018</th>
<th>2019</th>
<th>2020</th>
<th>2021</th>
<th>Total 5-Years</th>
</tr>
</thead>
<tbody>
<tr>
<td>Deployment of $700M</td>
<td></td>
<td></td>
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<td></td>
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<tr>
<td>Ambulatory</td>
<td>($12)</td>
<td>($59)</td>
<td>($71)</td>
<td>($57)</td>
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<td>($245)</td>
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<td>Information Technology</td>
<td>($2)</td>
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<td>($20)</td>
<td>($20)</td>
<td>($21)</td>
<td>($165)</td>
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<td>Facilities Infrastructure</td>
<td>-</td>
<td>($43)</td>
<td>($25)</td>
<td>-</td>
<td>-</td>
<td>($68)</td>
</tr>
<tr>
<td>Clinical Program Development</td>
<td>-</td>
<td>($94)</td>
<td>($79)</td>
<td>($36)</td>
<td>($13)</td>
<td>($222)</td>
</tr>
<tr>
<td>Total Annual Requirements</td>
<td>($64)</td>
<td>($248)</td>
<td>($195)</td>
<td>($113)</td>
<td>($80)</td>
<td>($700)</td>
</tr>
</tbody>
</table>

Source: Kaufman Hall & Associates, LLC Analysis

Figure 46
Future State Model: Five-Year Operating Projections Comparison, 2017-2021

<table>
<thead>
<tr>
<th>$ Millions</th>
<th>2017</th>
<th>2018</th>
<th>2019</th>
<th>2020</th>
<th>2021</th>
<th>Total 5-Years</th>
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<tr>
<td>Baseline Operating Income</td>
<td>($325)</td>
<td>($344)</td>
<td>($364)</td>
<td>($384)</td>
<td>($405)</td>
<td>($1,823)</td>
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<td>Operating Model Impacts</td>
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<tr>
<td>System Synergy</td>
<td>8</td>
<td>30</td>
<td>45</td>
<td>48</td>
<td>49</td>
<td>180</td>
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<tr>
<td>Information Technology</td>
<td>-</td>
<td>(9)</td>
<td>(9)</td>
<td>(9)</td>
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<td>Resulting Operating Income</td>
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Source: Kaufman Hall & Associates, LLC Analysis
K. Major Milestones and Timing

It will be challenging to bring four hospitals together that have experienced a decade or more of organizational and financial trauma. The institutions have survived due to a strong commitment and financial resources from the State and the passionate support of their elected leaders, stakeholder groups and community members. But much of senior management’s time is spent struggling for solvency and trying to improve care and service with minimal resources. There is limited financial ability to expand current services and even less to move away from a hospital-centric model of care and invest in additional staff, programs and facilities to provide the primary and ambulatory care the service area desperately needs.

The study hospitals have tried to survive independent of one another. With the availability of up to $700 million for capital investment and continued operating support from New York State, the hospitals’ leadership have a unique opportunity to come together and undertake a series of transformative actions in furtherance of their collective mission: to improve the health of the communities they serve.

This study provides a roadmap for the journey that the hospitals may wish to take together. It outlines a number of major actions that should be considered in forming a new health system and investing available funds in transforming healthcare for the communities of central and northeastern Brooklyn. There is more work to be done, however, to evaluate options and identify the optimal course of action.

We understand the need to move decisively and quickly. However, the current governance, management and clinical leadership, front-line staff and labor representatives, elected and community leaders, patients, their families and community members, as well as New York State, need time to digest the contents of this report. It will be important to appreciate the nature of the changes be proposed and build consensus within and between the hospital constituencies to support the need for those changes. There is benefit in proceeding slowly in the beginning in order to move more swiftly later on.

The timing of events is also critical. There must be a restructuring of the governance, recruitment of new board members and appointment of the management team. The new board will need time to get to know one another and appreciate the unique perspective, skills and experiences that each brings to the boardroom.

A systemwide CEO will need to be appointed, and he or she will need to form a management team, drawing upon the talents and skills resident in the hospitals across the health system as well as recruiting new leadership and skill sets from without. A significant portion of the CEO’s time must be spent establishing relationships with the new board, providing information and insights as to the challenges that lie ahead and creating a vision on how to move forward. There will be a need to do likewise with many stakeholders and constituency groups to keep them informed of progress and respond to their concerns.
The organization will also need to retain outside assistance to help guide the creation of the new shared services infrastructure, particularly for finance, quality improvement, information technology and facility development, all of which are foundational activities required to build the new health system.

With the availability of up to $700 million for capital investment and continued operating support from New York State, the hospitals’ leadership have a unique opportunity to come together and undertake a series of transformative actions in furtherance of their collective mission: to improve the health of the communities they serve.

Similarly, significant efforts must be expended in meeting with clinical leadership and the medical staff, with particular attention being paid to voluntary members. Kingsbrook appears to have the most voluntary physicians, and the restructuring of the clinical services on their campus will be disruptive to those relationships. Therefore, it will be important to include the medical staff in the planning of all the clinical restructuring among the campuses and to decisively but carefully move forward to execute the strategy.

Implementation of the Transformation Plan will be challenging for staff at all levels of the organization. Facts wrapped in rumors will fly through the organization and community at incredible velocity. The health system will have to use a variety of communication channels to keep the workforce and their representatives informed of decisions, actions and progress. These will include town hall meetings, department meetings, evening, night and weekend meetings, newsletters, email, web chats and the development of a website where all the relevant information and communication can be accessible to both the workforce and the community across multiple digital platforms.

Although the plan maintains most of the existing current balance sheet liabilities of the hospitals with an intent to discharge them through current operations, consideration should be given to restructuring those liabilities to better permit the health system to access capital markets at some point in the future. Additional discussion should be had with the State and DASNY to explore what options, if any, may be available.

Upon formation, the health system should begin the process of developing its shared services infrastructure and initiating the master facility planning process to identify the key facility improvements necessary to accommodate the restructuring of the inpatient clinical programs and the infrastructure investments necessary to support those improvements. On a parallel track, and managed by a separate team reporting to systemwide leadership, the health system must finalize plans for development of the primary and ambulatory care network.

We believe that once the strategic site plan for the ambulatory facilities is established, the seven urgent care centers can be opened every eight to 12 weeks, followed shortly by the primary care centers. Much of the ambulatory care development schedule is dependent on recruitment, which, in turn, should be aligned with when physicians graduate from their residency programs.

By contrast, the hospital master facility planning process requires more time because of the need to plan and develop the clinical and space programs to right-size future capacity and to minimally impact current operations during the construction process. The process must determine site and current conditions and limitations, identify options and phasing concerns and develop a more precise budget. The leadership must then make its recommendations to the board and prioritize the projects so the health system can pursue the best course of action to invest the available capital funds. At that point the architecture and engineering team needs to be authorized to proceed with the preparation and construction documents, the filing of
a certificate of need application and the securing of all State and local approvals. The hospital can then commence construction, which, for the major projects recommended in the report, is estimated to take between 18 and 30 months to complete, inclusive of interim moves and phasing. Therefore, the major projects would be completed toward the end of 2019 and into 2020.

This doesn’t mean that the clinical restructuring has to wait until the paint is dry on the first construction project. In fact, there is a great danger to the health system if it doesn’t begin to develop its clinical service lines and immediately focus on improving quality and attaining clinical efficiencies. The market continues to change rapidly, and the competition to attract patients will only intensify. The Transformation Plan can begin to identify certain clinical services that can be restructured and provided on a regional basis at a single location. This is particularly true for complex high-risk, low-volume surgery procedures whose accommodation may require minor modification or facility improvement.

Foundational to success are improving quality, attaining management and clinical operating efficiencies and increasing transparency, all of which require new information technology platforms. The health system needs to develop a strategy that will initially integrate data from disparate systems and ultimately build systemwide infrastructure to standardize measurement and reporting of all quality, financial and management activities. The development and implementation of an information technology strategy must align with clinical restructuring activities and precede implementation of the ambulatory care plan.

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Figure 47 Timing of Major Milestones
It is anticipated that the new health system will be sustainably supported by the DOH with both capital and operating resources through the transformation process by a combination of methods. During the initial five-year transformation phase, continued support is needed to fund working capital, restructure balance sheet liabilities, prevent further deterioration of the physical plant and equipment, provide capital to build the ambulatory network and transform the acute inpatient care capacity and facilities.

An estimate of the timing of the major milestones\events appears in Figure 47, Timing of Major Milestones, and a summary appears below:

- Build consensus among current governance, elected leaders, stakeholder groups and community.
- Restructure the governance to create a new parent board for the hospitals and recruit new members.
- Appoint senior management and clinical leadership teams.
- Receive RFA from the DOH to apply for the $700 million to transform healthcare delivery in Kings County.
- Prepare and submit response from the newly established health system.
- Receive Kings County Transformation Project funds from the DOH.
- Develop a shared services infrastructure.
- Develop a master facilities plan (MFP) to guide facility investments and restructuring of clinical programs.
- Develop the health information technology master plan.
- Develop an implementation plan for the ambulatory care network.
- Implement the ambulatory care development plan.

The health system’s governance and management leadership also has accountability to the State agencies involved in the funding, support and oversight of the health system. In order to ensure that the process stays on track and provides a venue for addressing inevitable problems, crises and resultant mid-course corrections, an implementation coordinating group should be formed, composed of health system and multi-agency representatives, to ensure alignment with objectives of the approved Transformation Plan funded through the RFA process.

The coordinating group should meet quarterly to review progress and provide accountability and transparency for use of the funds awarded to the health system to transform healthcare for the communities of central and northeastern Brooklyn.
Appendices
Appendix A

DOH Announcement of Brooklyn Feasibility Study
Central and Northeastern Brooklyn Healthcare Services Feasibility and Sustainability Study
Objectives and Deliverables

The New York State Department of Health (DOH) has requested that Northwell Health develop and assess the feasibility of a Plan for the restructuring of the organization, management and provision of healthcare services for the communities of central and northeastern Brooklyn. These communities are currently served primarily by the following hospitals: Brookdale Medical Center (Brookdale), Kingsbrook Jewish Medical Center (KJMC), Interfaith Medical Center (Interfaith), Wyckoff Heights Hospital (Wyckoff) and University Hospital Brooklyn (UHB). Plan development would proceed with the agreement and support from the leadership of the five hospitals, their Boards of Trustees and in consultation with key stakeholders.

The challenges confronting the provider community of central and northeastern Brooklyn have been well-documented. Previous studies and community needs assessments share a common view of the marketplace characteristics and forces which have destabilized and prevented these hospitals from generating sufficient margins to become financially sustainable and consistently provide high-quality care to their community.

There are real human consequences to the status quo. Compared to the rest of Brooklyn, New York City and the State as a whole, the communities in central and northeastern Brooklyn have measurably higher rates of obesity, diabetes, high blood pressure, congestive heart failure, infant mortality, and alcohol and drug dependence. The five hospitals have poor or average measures for hospital acquired infections, patient satisfaction, and timeliness of care. In addition primary care access by community residents is overly dependent on high utilization of emergency departments. Medicaid beneficiaries in central and northeastern Brooklyn account for the highest number of potentially preventable emergency department visits, with between 65 percent and 85 percent of all emergency visits considered potentially preventable.

Previous studies have also noted that the financial condition of the most troubled institutions is, to a large extent, a product of an inefficient expense structure, revenue challenges associated with a patient mix that approaches 90 percent public payers and charity care, and overwhelming liabilities (including debt issued long ago for physical plant improvements that, in some cases, are obsolete). The result of these financial forces is that the five “focus” hospitals have staggering operating deficits and little or no access to capital. In State Fiscal Year (SFY) 2017, it is projected that Brookdale, Interfaith, Kingsbrook and Wyckoff will require nearly $300 million in direct State operating assistance to remain open. Absent significant restructuring efforts targeted at reducing costs and increasing revenue, the need for State support will continue to grow at an average rate of about 7 percent per year to $380 million in SFY 2021. The cumulative State cost of these baseline gaps through SFY 2021 is projected to be nearly $1.7 billion. These State subsidy estimates do not include the cost to support UHB, which is facing large and growing annual shortfalls between expenses and patient revenue that could approach a cumulative value of $1 billion over the next five years.

A confluence of factors have forced these hospitals to confront an economic reality where new payment methodologies demand quality, efficiency and value. Further, due to advances in medicine, many healthcare services that were once the exclusive domain of hospitals are now delivered as effectively and often more efficiently outside the walls of the hospital or at home. All other hospitals in Brooklyn are now partners with larger health care systems which are helping them evolve clinically and operationally to adapt and grow in this new health care
environment. However, the five focus hospitals in central and northeastern Brooklyn continue to stand alone without the resources, expertise and scale to successfully adapt.

Consistent with State statute authorizing extraordinary capital investment to transform the delivery of healthcare services in Brooklyn and the terms of State operating subsidies being provided to the hospitals, the Plan for restructuring health care services in central and northeastern Brooklyn should provide a detailed blueprint for strengthening and protecting continued access to health care in these communities and identify specific capital and operational projects in support of the Plan with the goal of creating a high quality and financially sustainable system of care. To this end, the Plan should:

• Provide a strategic framework for a regional planning and operating structure(s) that are responsive to community needs, right sizes inpatient capacity, and expands access to ambulatory care.

• Identify opportunities for efficiencies to reduce reliance on extraordinary State operating subsidies, with the goal of a financially sustainable system of care.

• Recommend the manner in which the restructured system would support the educational mission of SUNY Downstate Medical Center.

• Outline necessary actions and resources required to execute the Plan.

• Identify a time frame and implementation strategy that minimizes the adverse impacts on the affected workforce and other communities of interest that might otherwise result from the recommended restructuring.

In developing this Plan, Northwell should review all previous studies conducted individually and collectively by the facilities and community groups, as well as recent community needs assessments conducted as part of the DSRIP planning process. Based upon past analysis, DOH believes there are a number of principles and strategic objectives that should guide the development of proposed operating structure and analysis. These include:

• The restructured system must be responsive to the unique health care needs of the diverse communities that comprise the identified service area.

• Wherever practicable, residents of the service area should have the opportunity to receive needed healthcare in their home communities.

• Ambulatory care services should be expanded and improved to the extent necessary to avoid unnecessary reliance on emergency room services and inpatient hospital utilization.

• The restructured system should embrace principles of population health management, placing community interests ahead of institutional interests.

• The area’s current offering of essential community-based clinical and support services should be valued.

• Access to emergency health care services of high quality must be assured.

• Access to health care services for uninsured area residents must be improved.

• Identify new programs, services or partners that can reduce healthcare disparities and address the impact of social determinants of health.

• Increase the availability of primary care and specialty physicians, nurse practitioners, physician assistants and community health workers who live and work in the community.

• Align incentives within the restructured health system and its physicians and other partners to maximize the quality, efficiency and effectiveness of care provided.
• To the greatest extent possible, retain the existing workforce and offer training opportunities to assure that culturally competent care is available to the community in a patient centric, coordinated care model promoting health and wellness.

• Support an integrated care management and community health infrastructures to help chronically ill and high cost patients more effectively manage their health and access to services.

• Identify and recommend critical infrastructure investments in technology, equipment and facilities to provide a strong foundation for program growth and enabling the new health system to obtain the benefits of Medicaid and Medicare payment reform.

• Quantify the amount of State operating support that will be provided throughout the transformation period and the capital investment that will be required to consolidate programs and facilities, rebuild needed facilities as well as to build an ambulatory care network.

• Assist SUNY Downstate Medical Center to maintain and enhance its educational mission to train the next generation of health professionals.

The study should be conducted with the support and participation of the management and boards of trustees of the identified hospitals. It should also reflect the input of the healthcare professionals and other workers and their designated representatives, and community stakeholders. The study should address the following work products as part of the study deliverables:

• Propose governance structures and organizational models that will ensure integration of care among the area’s hospitals and other providers through a service agreement with one or more healthcare systems which have the ability to coordinate strategy, assure program quality, and achieve financial sustainability and accountability. Describe the process of transition to the recommended model(s).

• Outline a strategy to expand and/or rationalize certain healthcare services based upon demand projections for the market and an analysis of existing facilities, including inpatient bed need, ambulatory care network capacity, and workforce capacity.

• Identify assumptions informing the estimates of market demand, clinical service line growth, operating cost structure, reimbursement, and other high-impact factors.

• To the extent permitted by law, assess opportunities to achieve efficiencies or acquire capabilities and competencies through an operational due diligence on critical clinical and management infrastructure. Northwell will not have direct access to managed care agreements and negotiated rates in connection with this study. Areas for such due diligence should include, but not be limited to, the following:

   1. Quality
   2. Clinical support
   3. Graduate medical education
   4. Information technology
   5. Human resources
   6. Risk management
   7. Physical assets and real estate
   8. Procurement and supply chain
   9. Corporate compliance
   10. Management operations
   11. Finance and revenue cycle
   12. Legal

• Identify investments necessary to transform clinical and business models of care to align with the goals of population health and value based reimbursements focused on improving quality, reducing health disparities and addressing the impact of social determinants of health.

• Identify measures of quality improvement that can be expected from these investments, process changes and greater integration of care.
• Identify opportunities, required investments and approaches to achieve efficiencies that result in a decrease in operating expenses and achieve enhancements to revenue.

• Using the baseline financial projection or run-rates, integrate the impacts of proposed initiatives and develop high level projections of operating financial impact to the hospitals, incorporating the impact of the newly designed system, achievement of efficiencies, projected growth, and other key variables to performance.

• Describe and project capital needs associated with redesigned delivery system and funds flow model that identifies the sources and uses of funding in the future-State model.

• Create consolidated financial projections (with a comparison to current run rates) for all hospitals net of funding from VAPAP, VBP-QIP, CFR, DSRIP funding, and other State-administered operating or capital support.

• Project shortfalls that would need to be supported by the State during a multi-year implementation period necessary to achieve sustainability objectives at a system-wide level. Include estimates of both capital and operating funding requirements.

• Provide a preliminary estimate of the necessary funding required to support transition activities including estimates of a management services agreement and other expertise or support.
Appendix B

Public Health Law §2825-A Health Care Facility Transformation: Kings County Project

2014 New York Laws
Article 28 - (2800 - 2826) HOSPITALS
2825-A - Health care facility transformation: Kings county project.

Universal Citation: NY Pub Health L § 2825-A (2014)

2825-a. Health care facility transformation program: Kings county project. 1. A Kings county health care facility transformation program is hereby established under the joint administration of the commissioner and the president of the dormitory authority of the State of New York for the purpose of strengthening and protecting continued access to health care services in communities. The program shall provide capital funding in support of projects that replace inefficient and outdated facilities as part of a merger, consolidation, acquisition or other significant corporate restructuring activity intended to create a financially sustainable system of care. The issuance of any bonds or notes hereunder shall be subject to the approval of the director of the division of the budget, and any projects funded through the issuance of bonds or notes hereunder shall be approved by the New York State public authorities control board, as required under section fifty-one of the public authorities law.

2. The commissioner and the president of the authority shall enter into an agreement, subject to approval by the director of the budget, and subject to section sixteen hundred eighty-r of the public authorities law, for the purposes of awarding, distributing, and administering the funds made available pursuant to this section. Such funds may be distributed by the commissioner and the president of the authority for capital grants to general hospitals, residential health care facilities, diagnostic and treatment centers, primary care providers, and home care providers, certified or licensed pursuant to article thirty-six of this chapter, for capital non-operational works or purposes that support the purposes set forth in this section. A copy of such agreement, and any amendments thereto, shall be provided to the chair of the senate finance committee, the chair of the assembly ways and means committee, and the director of the division of budget no later than thirty days prior to the release of a request for applications for funding under this program. Projects awarded under section twenty-eight hundred twenty-five of this article shall not be eligible for grants or awards made available under this section.

3. Notwithstanding section one hundred sixty-three of the State finance law or any inconsistent provision of law to the contrary, up to seven hundred million dollars of the funds appropriated for this program shall be awarded without a competitive bid or request for proposal process for capital grants to health care providers (hereafter “applicants”) located in the county of Kings.

(a) Eligible applicants shall serve communities whose residents are experiencing significant levels of health care disparities and health care needs compared to other communities within the county of Kings as evidenced by:

(i) a high number of Medicaid enrollees and uninsured individuals;

(ii) elevated blood lead level rates among children, high rates of diabetes, high blood pressure, asthma, obesity, infant death or premature birth, heart failure, behavioral health conditions, substance abuse;
(iii) low levels of income, high rates of unemployment, distressed housing conditions, and poor nutritional status;

(iv) other risk factors as determined by the commissioner and the president of the authority; and

(b) Such eligible applicant shall:

(i) (A) have a loss from operations for each of the three consecutive preceding years as evidenced by audited financial statements;

(B) have a negative fund balance or negative equity position in each of the three preceding years as evidenced by audited financial statements; and

(C) have a current ratio of less than 1:1 for each of three consecutive preceding years; or

(ii) be deemed by the commissioner and president of the authority to be a provider that fulfills or will fulfill an unmet health care need for acute inpatient, outpatient, primary or residential health care services in a community.

4. In determining awards for eligible applicants under this section, the commissioner and the president of the authority shall consider criteria including, but not limited to:

(a) the extent to which the proposed capital project will contribute to the long term sustainability of the applicant or preservation of essential health services in the community or communities served by the applicant;

(b) the extent to which the proposed project or purpose is aligned with delivery system reform incentive payment ("DSRIP") program goals and objectives;

(c) the relationship between the proposed capital project and identified community need;

(d) the extent that the proposed capital project furthers the development of primary care and other outpatient services;

(e) the extent to which the proposed capital project benefits Medicaid enrollees and uninsured individuals;

(f) the extent to which the applicant has engaged the community affected by the proposed capital project and the manner in which community engagement has shaped such capital project; and

(g) the extent to which the proposed capital project addresses potential risk to patient safety and welfare.

5. The department shall provide a report on a quarterly basis to the chairs of the senate finance, assembly ways and means, senate health and assembly health committees. Such reports shall be submitted no later than sixty days after the close of the quarter, and shall conform to the reporting requirements of subdivision twenty of section twenty-eight hundred seven of this article, as applicable.
Appendix C  Examples of Shared Services Consolidation Opportunities

Quality of Care
As part of the quality assessment process, each hospital provided access to their Joint Commission Surveys, quality improvement plans and information provided to DOH through NYPORTS, including serious adverse events and patient complaints. We were also able to review publicly available mortality, readmission, complication, patient safety, healthcare-associated infections, process of care measures and patient satisfaction data provided through Medicare Hospital Compare for inpatient discharges for the period Q3 2011 through Q2 2014. A summary of the comparative quality data appears in Appendix D. On balance, the performance of the four hospitals were not too different than the U.S. national benchmark and there were a few measures where performance was better and some where it was worse. However, there are many opportunities for improvement particularly with respect to emergency department throughput and waiting times, infection control, clinical processes and patient satisfaction.

Every entity in the health system, depending on the scope of care services delivered, must be required to consistently assess and improve performance and patient safety using quality metrics. This permits the health system to evaluate and improve processes and outcomes associated with access to care, assessment and treatment, preventative services, health promotion programs and patient experience.

It is important that senior clinical leadership own this process at the outset of the formation of the health system. A systemwide quality improvement department should be established to oversee the enhancement and support of site quality activities. In addition, a systemwide Performance Improvement Coordinating Group (PICG) composed of clinical leadership should be formed to:

• Prioritize and set the standards for quality and performance improvement initiatives
• Assign responsibility for enacting all performance improvement recommendations
• Monitor results
• Oversee the approval of administrative policies and procedures

Over time, as the hospitals begin to consolidate clinical programs and restructure their Article 28 licenses, programs will be able to share best practices and lessons learned, monitor outcomes, benchmark performance and engage in focused performance improvement projects.

Risk Management
A more effective, systemwide approach to quantifying and mitigating risk can produce significant long-term operational savings. A systemwide risk management department is needed to begin the overall analysis and review of risk appetite, development of mitigation strategies, and administration of the insurance portfolio and claims management. This department should guide the purchase of insurance and related services to obtain best terms for the organization. It must also acquire and maintain an in-house data management system to create, maintain, aggregate and analyze key data. The savings from improved outcomes on claims administration and more efficient insurance buying would be expected to contribute to the cost of developing a systemwide risk management department.
Human Resources
As the workforce evolves and transitions into different care settings, the operational elements of human resources management can become pain points that increase in frequency and complexity. It is critical that the new health system possess a depth of talent and expertise who understand the intricacies of managing multiple employee populations and programs and the balance required to respect the unique culture and history of each partner. A major challenge will be the need to invest in workforce training programs to support the shift in jobs from the inpatient to ambulatory care settings.

A proposed model to centralize human resources services appears below. This model provides a systemwide infrastructure to support the recruitment of the workforce, creates centers of excellence and ensures that workforce development is aligned with strategy and provides a consulting resource to line management in support of operating objectives. The centralized structure can also offer tangible benefits to both the health system and its employees in terms of accessibility, communication, flexibility, expertise and reduced operating costs.

Centralized Human Resources Model

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<td>• Talent management</td>
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<td>• Total rewards</td>
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Other major opportunities include centralization of non-union benefits, payroll and employee health, as well as a reduction in temporary staffing agency use by bringing the function in-house and achieving economies of scale for vendor management with respect to background checks, sourcing and advertising. In order to realize these benefits, there will be a need to replace manual systems and adopt a standardized HR technology platform.

Nursing
Nursing represents the single largest category of the workforce and it is important that staffing levels are matched to support the acuity levels of the patients. It appears that the hospitals have used a combination of overtime and agency use in maintaining staffing levels. Although the hospitals report a nurse turnover rate of between 3 to 15 percent, they have succeeded in maintaining a more narrow range of nursing vacancy of between 7 to 9 percent. Additionally, the hospitals are to be praised for their high BSN rate amongst their nursing staff.

The restructuring and regionalization of inpatient services and significant growth of ambulatory care services should be accompanied by a new structure to recruit, orient, train and manage nursing throughout the enterprise. There will be opportunities to reduce agency costs by deploying Kingsbrook’s captive staffing agency throughout the system, and decreasing reliance on overtime to maintain safe staffing levels. Additionally, low volume in critical areas such
as operating rooms and cardiac catheterization labs may contribute to operating inefficiency relative to required minimum staffing levels, in addition to signifying quality concerns. These represent areas of potential opportunity to improve safety and quality and attain higher levels of productivity.

**Laboratory Services**
Given geographic proximity of the service area hospitals, the health system will realize immediate benefits and cost savings by consolidating the hospital laboratory services and by maintaining rapid response laboratories at each hospital. The laboratories can be consolidated through participation in a laboratory services cooperative. If the cooperative model is implemented, then the health system can also invite University Hospital and other hospital providers in the region to join.

The major opportunities that can be realized through joining a regional core laboratory include:

- A reduction in overall cost per test through operating economies of scale, increased productivity, equipment and reagent standardization and by combining reference testing volumes to drive down send-out costs using a single source vendor.
- The development of a standardized information platform to provide opportunity for advanced data analytics to support regional population health initiatives.
- Improvement in quality and regulatory compliance through central management oversight.

**Financial Services**
The development of a centralized shared financial services operating division can more effectively support consolidation of governance and management activities and will facilitate clinical integration. In order to enhance accountability and transparency there needs to be an enterprise-wide financial and accounting system to facilitate the preparation of a single consolidated set of financial records and provide a uniform method to monitor performance and enhance accountability.

A centralized finance function will also improve the efficiency and effectiveness of core operations such as financial reporting, financial planning and budgeting, reimbursement, performance improvement, cost accounting/productivity, payroll and accounts payable. All of these functions would be organized into a shared services model and, in addition, each site and major operating division would maintain a local financial management presence reporting up to a systemwide CFO.

Revenue cycle is an absolutely critical activity in the lifeblood of the new health system. Given the complexity of the challenges management will have to confront, we believe it is prudent to begin by outsourcing revenue cycle management for both the hospitals and its expanding physician group presence. This will provide an opportunity to improve the current efficiency and performance of billing and revenue collection activities and establish a scalable platform to accommodate the rapid growth that will accompany implementation of the ambulatory care network development strategy.

**Payer Relations/Contracting**
Dedicated staff will be required to negotiate and manage modified fee-for-service and value-based purchasing agreements with payers and managed care organizations who have members in central and northeastern Brooklyn. Some of this functionality may be accessed through CCB and its partners if it is successful in evolving into a contracting vehicle for health providers in a post-DSRIP marketplace. It will be critical for the new health system to negotiate as a single entity and to develop a cohesive contracting strategy.
Care Management
The movement to value-based purchasing will require the health system to acquire the capabilities to manage and enhance care-delivery performance for all risk-based reimbursement programs. The early performance reported by the CCB suggests that it may be able to support this function for the health system but it will still be important to have an internal entity responsible for working with the community in collaboration with the hospitals and post-acute providers to manage high risk patients in commercial and governmental value-based programs.

Procurement and Supply Chain
The hospitals can achieve benefits by pooling their collective purchasing power through their GPO partner, Nexera Management Services (a wholly owned subsidiary of GNYHA). Nexera Management Services currently provides management, access to GPO contracts and supply chain support to each independent hospital in an attempt to identify cost saving opportunities. Alternatively, wherever competitive pricing can be negotiated, procurement from local suppliers should be pursued, so the broader community benefits from this significant investment in healthcare transformation.

But, group purchasing is only one aspect of value-based cost savings that can be realized through consolidation of supply chain activities. There are opportunities to access and acquire infrastructure, technology and personnel to support a sustainable, efficient supply chain. Similarly, centralization of other specialized clinical services such as laboratory, pharmacy and sterile processing also may offer significant opportunities for cost reduction and improved efficiencies that can be achieved as a systemwide shared services model is deployed.

Information Technology
The strategy for information technology must support the critical clinical and financial needs of the health system as well as support its strategic vision to manage the health of a patient and a population across a continuum of providers and care settings over the service area geography.

The information technology plan must be focused on increased integration of technology in support of more efficient hospital operations, financial performance, management of resources, reporting and accountability. To do so effectively, information technology must be considered a mission critical service.

The health system is going to confront a major operational and investment challenge in creating a uniform, contemporary information technology platform across the enterprise. Years of capital constraint have resulted in underinvestment in critical information technology systems leading to:

- Security and privacy risks and vulnerabilities
- Aging infrastructure – many devices are at end-of-life or end-of support
- Inadequate environmental controls in data centers including lack of backup power
- Inability to attract and retain information technology leadership and talent

The health system will need to make critical infrastructure investments in technology, equipment and facilities to provide a strong foundation for program growth and to adapt the health system to thrive in the new world of payment reform and population health. In particular, there will be a need to establish a common information technology platform to effectively support clinical decision making, improving quality, patient care, development of effective care management capabilities, attain operating efficiencies and manage the revenue cycle. Additionally, given the magnitude of the ambulatory care investment, it will be important...
for the health system to utilize advanced telehealth and digitally enabled capabilities to enhance access to care management as well as promote health literacy and patient empowerment for self-management.

The standardization of key systems and technologies is a critical prerequisite for the creation of a centralized shared service IT support organization to manage applications and technologies across the multiple facilities and locations of the enterprise.

A centralized EMR will need to be deployed and other clinical and business activities such as quality and revenue cycle must be capable of providing information sharing across all health system hospitals and ambulatory facilities. When selecting a centralized EMR, behavioral health functionality must be considered given the large volume of mental health services provided.

The EMRs used in hospitals and in ambulatory sites must be fully interoperable across all facilities in the region to support high-quality longitudinal care delivery and avoid redundancies or gaps in care. The Healthix/SHIN-NY RHIO infrastructure can be used to create connectivity and integration with non-owned practices with significant activity within the hospitals.

These are but a few of the activities for which the health system should adopt systemwide shared services models. Other areas include:

- Community engagement
- Facility construction
- Facility management
- Fundraising and development
- Legal and compliance
- Marketing and communications
- Patient access/customer call center
- Strategy development
## Summary of Quality Data

### Outcome of Care Measures

**Medicare Hospital Compare (Q3 2011 – Q2 2014 discharges)**

<table>
<thead>
<tr>
<th>Measure</th>
<th>Brookdale</th>
<th>Interfaith</th>
<th>Kingsbrook</th>
<th>Wyckoff</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Mortality</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>30 day Mortality Rate – COPD</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>30 day Mortality Rate – AMI</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>30 day Mortality Rate – HF</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>30 day Mortality Rate – PN</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>30 day Mortality Rate – STK</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>30 day Mortality Rate – CABG</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td><strong>Readmission</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>30 day Readmission Rate – COPD</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>30 day Readmission Rate – AMI</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>30 day Readmission Rate – HF</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>30 day Readmission Rate – PN</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>30 day Readmission Rate – STK</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>30 day Readmission Rate – CABG</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>30 day Readmission Rate – Elective Total Hip and/or Total Knee Arthroplasty</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>(Q3 2013 – Q2 2014 discharges) 30 day Readmission Rate – Hospital wide</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td><strong>Complication (Q2 2011 – Q1 2014)</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(Q2 2011 – Q1 2014) Elective Total Hip and/or Total Knee Arthroplasty Complication Rate</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td><strong>Patient Safety Indicators (AHRQ) - (Q3 2012 – Q2 2014 discharges)</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(PSI-4) Death among patients with serious treatable complications</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
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<tr>
<td>(PSI-90) Composite</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td><strong>Healthcare Associated Infections (Q3 2014 – Q2 2015 discharges)</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CLABSI in ICUs and Select Wards (Q1 2015 – Q2 2015)</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>CLABSI in ICU only</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>CAUTI in ICUs and Select Wards (Q1 2015 – Q2 2015)</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>CAUTI in ICU only</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>SSI – Colon Surgery</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>SSI – Abdominal Hysterectomy</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>MRSA – Bacteremia</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>C.diff</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
</tr>
</tbody>
</table>

- **No Different than US National Rate/Benchmark**
- **Better than US National Rate/Benchmark**
- **Worse than US National Rate/Benchmark**
- **Number of Cases Too Small to Report**
- **Not Available**
### Complaints
*Source: NYS Hospital Profile (7/12-6/15)*

<table>
<thead>
<tr>
<th>Measure</th>
<th>Statewide</th>
<th>Brookdale</th>
<th>Interfaith</th>
<th>Kingsbrook</th>
<th>Wyckoff</th>
</tr>
</thead>
<tbody>
<tr>
<td>Complaints per 10,000 patient days</td>
<td>0.5</td>
<td>3.1</td>
<td>2.2</td>
<td>2.8</td>
<td>1.3</td>
</tr>
<tr>
<td>Number reviewed resulting in citations per 10,000 patient days</td>
<td>0.1</td>
<td>0.6</td>
<td>0.4</td>
<td>0.2</td>
<td>0.2</td>
</tr>
<tr>
<td>Percentage of allegations made that were substantiated</td>
<td>12.90%</td>
<td>18.10%</td>
<td>20.90%</td>
<td>13.20%</td>
<td>8.70%</td>
</tr>
</tbody>
</table>

### Patient Experience
*Medicare Hospital Compare (Q3 2014 – Q2 2015 discharges)*

<table>
<thead>
<tr>
<th>Measure</th>
<th>NYS Avg</th>
<th>Nat'l Avg</th>
<th>Brookdale</th>
<th>Interfaith</th>
<th>Kingsbrook</th>
<th>Wyckoff</th>
</tr>
</thead>
<tbody>
<tr>
<td>Overall Rating of Hospital 9 or 10 on scale 0-10</td>
<td>64%</td>
<td>71%</td>
<td>45%</td>
<td>55%</td>
<td>56%</td>
<td>51%</td>
</tr>
<tr>
<td>Patients who would definitely recommend the hospital</td>
<td>66%</td>
<td>71%</td>
<td>42%</td>
<td>54%</td>
<td>62%</td>
<td>53%</td>
</tr>
</tbody>
</table>
## Process of Care Measures

*Source: Medicare Hospital Compare (Q3 2014 – Q2 2015 discharges)*

<table>
<thead>
<tr>
<th>Measure</th>
<th>NYS Avg</th>
<th>Nat’l Avg</th>
<th>Brookdale</th>
<th>Interfaith</th>
<th>Kingsbrook</th>
<th>Wyckoff</th>
</tr>
</thead>
<tbody>
<tr>
<td>AMI</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Median time to transfer to another facility for acute coronary intervention</td>
<td>72 min</td>
<td>57 min</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>Median time to ECG</td>
<td>10 min</td>
<td>7 min</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>Fibrinolytic therapy received within 30 minutes of ED arrival</td>
<td>59%</td>
<td>59%</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>Aspirin at arrival</td>
<td>97%</td>
<td>97%</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>100%</td>
</tr>
<tr>
<td>Fibrinolytic therapy received within 30 minutes of hospital arrival</td>
<td>43%</td>
<td>57%</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>Primary percutaneous coronary intervention (PCI) received within 90 minutes of hospital arrival</td>
<td>97%</td>
<td>96%</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>HF</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Evaluation of LVFS function</td>
<td>99%</td>
<td>99%</td>
<td>99%</td>
<td>99%</td>
<td>99%</td>
<td>100%</td>
</tr>
<tr>
<td>STROKE</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Thrombolytic therapy</td>
<td>82%</td>
<td>83%</td>
<td>90%</td>
<td>N/A</td>
<td>N/A</td>
<td>81%</td>
</tr>
<tr>
<td>Antithrombolytic therapy by end of hospital day 2</td>
<td>99%</td>
<td>98%</td>
<td>100%</td>
<td>100%</td>
<td>96%</td>
<td>95%</td>
</tr>
<tr>
<td>VTE prophylaxis</td>
<td>97%</td>
<td>97%</td>
<td>100%</td>
<td>100%</td>
<td>96%</td>
<td>95%</td>
</tr>
<tr>
<td>Anticoagulation therapy for AFIB/Flutter</td>
<td>98%</td>
<td>97%</td>
<td>100%</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>Discharge on antithrombotic therapy</td>
<td>99%</td>
<td>99%</td>
<td>100%</td>
<td>100%</td>
<td>100%</td>
<td>99%</td>
</tr>
<tr>
<td>Discharge on statin</td>
<td>97%</td>
<td>97%</td>
<td>100%</td>
<td>93%</td>
<td>97%</td>
<td>95%</td>
</tr>
<tr>
<td>Stroke education</td>
<td>94%</td>
<td>94%</td>
<td>100%</td>
<td>64%</td>
<td>100%</td>
<td>98%</td>
</tr>
<tr>
<td>Assessed for rehabilitation</td>
<td>98%</td>
<td>98%</td>
<td>100%</td>
<td>85%</td>
<td>98%</td>
<td>96%</td>
</tr>
<tr>
<td>Venous Thromboembolism (VTE)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>VTE prophylaxis</td>
<td>94%</td>
<td>93%</td>
<td>82%</td>
<td>92%</td>
<td>91%</td>
<td>93%</td>
</tr>
<tr>
<td>ICU VTE prophylaxis</td>
<td>96%</td>
<td>97%</td>
<td>88%</td>
<td>97%</td>
<td>95%</td>
<td>98%</td>
</tr>
<tr>
<td>Hospital acquired potentially preventable VTE</td>
<td>4%</td>
<td>4%</td>
<td>3%</td>
<td>N/A</td>
<td>4%</td>
<td>0%</td>
</tr>
<tr>
<td>VTE patients with anticoagulation overlap therapy</td>
<td>94%</td>
<td>95%</td>
<td>83%</td>
<td>100%</td>
<td>94%</td>
<td>88%</td>
</tr>
<tr>
<td>Unfractionated heparin with dosages/platelet count monitoring</td>
<td>96%</td>
<td>99%</td>
<td>90%</td>
<td>N/A</td>
<td>100%</td>
<td>100%</td>
</tr>
<tr>
<td>Warfarin therapy discharge instructions</td>
<td>89%</td>
<td>91%</td>
<td>72%</td>
<td>N/A</td>
<td>100%</td>
<td>77%</td>
</tr>
<tr>
<td>Pneumonia</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Initial antibiotic selection in CAP for immunocompetent patient</td>
<td>96%</td>
<td>95%</td>
<td>100%</td>
<td>89%</td>
<td>100%</td>
<td>98%</td>
</tr>
<tr>
<td>Surgical Care Improvement Project (SCIP)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Prophylactic antibiotic within 1 hour prior to surgical incision</td>
<td>99%</td>
<td>99%</td>
<td>100%</td>
<td>100%</td>
<td>100%</td>
<td>98%</td>
</tr>
<tr>
<td>Prophylactic antibiotic discontinued within 24 hours after surgery end time</td>
<td>98%</td>
<td>98%</td>
<td>85%</td>
<td>82%</td>
<td>100%</td>
<td>100%</td>
</tr>
<tr>
<td>Prophylactic antibiotic within 24 hours prior to surgery to 24 hours after surgery</td>
<td>100%</td>
<td>100%</td>
<td>99%</td>
<td>100%</td>
<td>100%</td>
<td>100%</td>
</tr>
<tr>
<td>Surgery patients on beta-blocker therapy prior to arrival who received beta-blocker during the perioperative period</td>
<td>98%</td>
<td>98%</td>
<td>89%</td>
<td>N/A</td>
<td>98%</td>
<td>93%</td>
</tr>
<tr>
<td>Prophylactic antibiotic selection for surgical patients</td>
<td>98%</td>
<td>99%</td>
<td>93%</td>
<td>77%</td>
<td>96%</td>
<td>92%</td>
</tr>
<tr>
<td>Urinary catheter removed post-op day 1 or day 2</td>
<td>98%</td>
<td>98%</td>
<td>74%</td>
<td>83%</td>
<td>98%</td>
<td>96%</td>
</tr>
</tbody>
</table>
### Process of Care Measures (cont’d)

Source: Medicare Hospital Compare (Q3 2014 – Q2 2015 discharges)

<table>
<thead>
<tr>
<th>Measure</th>
<th>NYS Avg</th>
<th>Nat’l Avg</th>
<th>Brookdale</th>
<th>Interfaith</th>
<th>Kingsbrook</th>
<th>Wyckoff</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Emergency Department (ED)</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Median timeframe to pain medication for long bone fractures</td>
<td>59 min</td>
<td>54 min</td>
<td>88 min</td>
<td>108 min</td>
<td>114 min</td>
<td>132 min</td>
</tr>
<tr>
<td>Patient left without being seen</td>
<td>2%</td>
<td>2%</td>
<td>4%</td>
<td>8%</td>
<td>2%</td>
<td>4%</td>
</tr>
<tr>
<td>Head CT scan results for Stroke within 45 minutes of arrival (N/A = no cases met criteria)</td>
<td>66%</td>
<td>67%</td>
<td>62%</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td><strong>ED Measures</strong></td>
<td>Very High Volume: &gt; 60,000 patients per year</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Median timeframe ED arrival to ED departure for admitted ED patients</td>
<td>492 min</td>
<td>343 min</td>
<td>710 min</td>
<td>—</td>
<td>—</td>
<td>448 min</td>
</tr>
<tr>
<td>Admit decision time to ED departure time for admitted patients</td>
<td>188 min</td>
<td>134 min</td>
<td>296 min</td>
<td>—</td>
<td>—</td>
<td>181 min</td>
</tr>
<tr>
<td>Median timeframe ED arrival to ED departure for discharged ED patients</td>
<td>202 min</td>
<td>173 min</td>
<td>182 min</td>
<td>—</td>
<td>—</td>
<td>172 min</td>
</tr>
<tr>
<td>Door to diagnostic evaluation by a qualified medical professional</td>
<td>47 min</td>
<td>33 min</td>
<td>72 min</td>
<td>—</td>
<td>—</td>
<td>83 min</td>
</tr>
<tr>
<td><strong>ED Measures</strong></td>
<td>High Volume: 40,000 – 59,999 patients per year</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Median timeframe ED arrival to ED departure for admitted ED patients</td>
<td>381 min</td>
<td>299 min</td>
<td>—</td>
<td>404 min</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>Admit decision time to ED departure time for admitted patients</td>
<td>152 min</td>
<td>115 min</td>
<td>—</td>
<td>280 min</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>Median timeframe ED arrival to ED departure for discharged ED patients</td>
<td>170 min</td>
<td>162 min</td>
<td>—</td>
<td>170 min</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>Door to diagnostic evaluation by a qualified medical professional</td>
<td>32 min</td>
<td>29 min</td>
<td>—</td>
<td>51 min</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td><strong>ED Measures</strong></td>
<td>Medium Volume: 20,000 – 39,999 patients per year</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Median timeframe ED arrival to ED departure for admitted ED patients</td>
<td>366 min</td>
<td>262 min</td>
<td>—</td>
<td>—</td>
<td>446 min</td>
<td>—</td>
</tr>
<tr>
<td>Admit decision time to ED departure time for admitted patients</td>
<td>163 min</td>
<td>90 min</td>
<td>—</td>
<td>—</td>
<td>163 min</td>
<td>—</td>
</tr>
<tr>
<td>Median timeframe ED arrival to ED departure for discharged ED patients</td>
<td>160 min</td>
<td>142 min</td>
<td>—</td>
<td>—</td>
<td>165 min</td>
<td>—</td>
</tr>
<tr>
<td>Door to diagnostic evaluation by a qualified medical professional</td>
<td>31 min</td>
<td>25 min</td>
<td>—</td>
<td>—</td>
<td>37 min</td>
<td>—</td>
</tr>
<tr>
<td><strong>Immunization (IMM) Q4 2014 – Q1 2015</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Influenza immunization</td>
<td>91%</td>
<td>94%</td>
<td>56%</td>
<td>71%</td>
<td>85%</td>
<td>98%</td>
</tr>
<tr>
<td>Influenza vaccination coverage among healthcare personnel</td>
<td>84%</td>
<td>84%</td>
<td>69%</td>
<td>52%</td>
<td>86%</td>
<td>80%</td>
</tr>
<tr>
<td><strong>Perinatal Care (PC) Q3 2014 – Q2 2015</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Elective delivery (N/A = no cases met criteria)</td>
<td>2%</td>
<td>3%</td>
<td>2%</td>
<td>N/A</td>
<td>N/A</td>
<td>9%</td>
</tr>
<tr>
<td><strong>Medical Imaging Q3 2013 – Q2 2014</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Outpatients who had a follow-up mammogram, ultrasound, or MRI of the breast within the 45 days following a screening mammogram</td>
<td>14.5%</td>
<td>8.9%</td>
<td>10.6%</td>
<td>N/A</td>
<td>9.8%</td>
<td>7.5%</td>
</tr>
<tr>
<td>Outpatient CT scans of the chest that were “combination” (double) scans</td>
<td>1.0%</td>
<td>2.4%</td>
<td>1.6%</td>
<td>N/A</td>
<td>0.0%</td>
<td>0.0%</td>
</tr>
<tr>
<td>Outpatient CT scans of the abdomen that were “combination” (double) scans</td>
<td>6.8%</td>
<td>9.4%</td>
<td>9.9%</td>
<td>N/A</td>
<td>4.3%</td>
<td>4.5%</td>
</tr>
<tr>
<td>Outpatients with brain CT scans who got a sinus CT scan at the same time</td>
<td>3.8%</td>
<td>2.8%</td>
<td>5.1%</td>
<td>N/A</td>
<td>N/A</td>
<td>6.4%</td>
</tr>
</tbody>
</table>
A detailed facility assessment was beyond the scope of this study, therefore, Northwell was unable to precisely project the total amount of capital required to meet facility aspects of the Study’s recommendations. However, Northwell has provided a range of project cost estimates for similar projects performed in the Health System’s hospital facilities. The range of costs reflect differences in project scope, existing conditions, project phasing and timing.

Therefore, the information appearing below illustrates the magnitude and range of cost estimates for the types of projects proposed in the study to rebuild the hospitals and accommodate elements of the Transformation Plan.

<table>
<thead>
<tr>
<th>Clinical Areas</th>
<th>Project Cost Estimate Range (millions)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cardiac catheterization laboratory (2 labs)</td>
<td>$5 - $10</td>
</tr>
<tr>
<td>Emergency department renovation/expansion</td>
<td>$20 - $60</td>
</tr>
<tr>
<td>Imaging equipment upgrades</td>
<td>$12 - $20</td>
</tr>
<tr>
<td>Surgical suite modernization</td>
<td>$40 - $75</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Patient Care Unit Upgrades</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Medical/surgical</td>
<td>$8 - $15</td>
</tr>
<tr>
<td>Obstetrics</td>
<td>$8 - $20</td>
</tr>
<tr>
<td>Pediatrics</td>
<td>$8 - $15</td>
</tr>
<tr>
<td>Psychiatry</td>
<td>$5 - $10</td>
</tr>
<tr>
<td>Rehabilitation</td>
<td>$8 - $10</td>
</tr>
<tr>
<td>Intensive care (ICU/CCU)</td>
<td>$10 - $25</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Infrastructure</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Co-generation/power plant replacement</td>
<td>$25 - $60</td>
</tr>
<tr>
<td>Emergency generators upgrade</td>
<td>$8 - $12</td>
</tr>
<tr>
<td>Fire alarm upgrade</td>
<td>$1 - $3</td>
</tr>
<tr>
<td>HVAC systems upgrades</td>
<td>$6 - $30</td>
</tr>
<tr>
<td>Separation of electrical branches</td>
<td>$40 - $80</td>
</tr>
</tbody>
</table>
To learn more about Northwell Ventures, visit Northwell.edu/ventures or contact:

Tom Thornton
Senior Vice President
Northwell Ventures
Tthornton1@Northwell.edu