NORTHUMBERLAND HILLS
HOSPITAL

Creating Our Future Together

Strategic Plan

2017/18 - 2020/21

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Message from Board Chair and President and CEO

May 2017

This is an exciting time for Northumberland Hills Hospital (NHH). In recent years, we have undertaken strategic initiatives to enhance our hospital—with our partners, patients and their caregivers—to meet the needs of the community efficiently and with excellence. Our strategic plan for the next four years builds upon what we've learned from extensive inward reflections, external analysis and community consultations. It sets a strong future course for NHH and our communities.

The strategic planning process, *Creating Our Future Together*, has engaged our staff and physicians, our community partners, our funders, and the people we serve. The process has truly been a collaborative effort. The consultations that led to the directions outlined in this plan were honest, thorough, and productive. That process has resulted in new strategic objectives and priorities in which we can all be confident and proud.

It is a time of ongoing change in our health-care sector. Within that dynamic context, this strategic plan provides us with a clear local direction, as we work with members of our community and our partners to continuously improve health care quality and access.

This has been a challenging time for many hospitals across Ontario – including Northumberland Hills. The passion and resilience of our staff and clinicians has been exceptional, and this strategic plan re-commits us to our shared purpose, our service mandate, and our core values. These are not just concepts captured in a planning document: they are tools for decision-making that will help shape how we build a better health system for the people of our communities. Our strategic objectives and priorities will also form the foundation of our operational plans, and the day-to-day work that brings our priorities to life.

We are very proud of the team at NHH and grateful for the incredible work that is done here every single day. We are thankful for the exceptional support we receive from our community, both in terms of the dollars and volunteer hours donated, and we are excited by the opportunities we have together with our provincial leaders and partners to support the development of a more integrated health care experience for patients in our community. It is our privilege to work with partners, patients and caregivers alike to ensure local residents have access to the best care at the right place and at the right time. If the care a patient needs is not provided here, we will work with our partners to help people get what they need.

Jack Russell
Chair of the Board

Linda Davis
President and CEO

Executive Summary

OUR SHARED PURPOSE

Our Shared Purpose reflects the central role and aspiration for NHH. It speaks to why we exist and how we can make an impact in our community.

Exceptional patient care. Every time.

OUR CORE VALUES

Our Core Values define the way we are committed to perform our work, through our actions and interactions with each other, our patients and the larger community.

- **Integrity** *lies in being true to ourselves our team and our patients*
- **Quality** *is where our high standards and innovation meet*
- **Respect** *flows from appreciating each person for the qualities and experiences that they bring*
- **Compassion** *means having empathy for our patients, their families and each other*
- **Teamwork** *is working together in collaborative partnerships in an environment of trust and respect to achieve the best possible care*

Today, NHH is one of an increasingly inter-related network of care provider organizations in our region.

OUR STRATEGIC OBJECTIVES AND PRIORITIES

Our Strategic Objectives are the main areas of focus for NHH over the duration of this strategic plan. They describe, at a high level, what we will do to fulfill Our Shared Purpose.

Our Priorities describe in more detail what must be done to advance each of **Our Strategic Objectives**.

Quality and Safety

i. Improve outcomes and the patient and family experience
ii. Build upon our leadership in seniors' care in preparation for rising community needs
iii. Expand palliative and end-of-life care capacity in our community
iv. Advance mental health supports in our community

Great Place to Work and Volunteer

i. Enhance our culture
ii. Support ongoing staff training and development
iii. Enrich the impact and experience of our volunteers and students
iv. Sustain physician engagement on hospital and system priorities

Collaborative Community Partnerships

i. Support the development of a more integrated health care experience for patients in our community
ii. Develop innovative local partnership opportunities

Operational Excellence

i. Enhance decision-support resources
ii. Seek new and alternate sources of funding
iii. Prepare for and adapt to future service needs related to changing demographics
iv. Apply innovative approaches to managing our operations
v. Advocate for sustainable funding in the context of provincial funding reform

Honouring the Past

The hospital building we operate in today opened in 2003. But our heritage and history can be traced back to the hospitals of the Municipality of Port Hope and the Town of Cobourg – with over a century of service to these communities and the surrounding regions.

Cobourg's first hospital, known as the Cottage Hospital, opened in the late 1890s on James Street, in rooms provided to it within the Cobourg Home for the Aged and Infirm. The Cottage Hospital expanded into its own wing, officially opened in 1900, and eventually secured the transfer of the Home property (in 1907) to the Hospital Board for conversion into a 13-bed hospital. In 1914, the new Cobourg General Hospital officially opened at the corner of D'Arcy and Chapel Streets with accommodation for 40 patients. Services expanded during the time between the two World Wars; a maternity wing and outpatient clinic were added in 1936. Two decades later, in 1956, the Cobourg General Hospital was renamed the Cobourg District General Hospital. Further expansion followed in 1970.

A Cottage Hospital also served the community of Port Hope on Hope Street. In 1911, the Town of Port Hope established the Port Hope Hospital Trust, and a hospital board was formed to lead the fundraising and construction of a new hospital at the corner of Hope and Ward Streets, next door to the original Cottage Hospital site. In 1916, this new hospital building opened in Port Hope with 20 patient beds. Further expansion continued in 1929, bringing the total to 45 beds. In 1960 the Port Hope Hospital purchased land in a new location on Wellington Street and announced plans for the building of a larger hospital with 70 beds. This hospital opened its doors in 1964 and paediatric and maternity wards were added in the late 1970s.

A consolidated, new hospital, Northumberland Hills, opened its doors to the public at 1000 DePalma Drive in October 2003, with a broad range of service enhancements including digital x-ray and computed tomography (CT), a full-service dialysis program, and an expanded chemotherapy clinic. Unprecedented community support, led by a skilled NHH Foundation and local volunteer leaders, made the dream of a new hospital—and the sophisticated medical equipment to put in it—a reality.

As NHH has grown, so too have the volunteer communities that come together daily to support it. The two largest volunteer partners—the NHH Foundation and the NHH Auxiliary—rally the contribution of millions of dollars per annum and tens of thousands of volunteer hours, respectively. Others, from Board members and patient and family advisors to community drivers, spiritual care and therapy dog volunteers, have also steadily increased in response to NHH's rising need.

Grounded in these deep and broad roots, NHH today serves the catchment area known as west Northumberland, a region including the Municipality of Port Hope, the Town of Cobourg and the Townships of Hamilton, Cramahe and Alnwick/Haldimand.

As we look to our future, we also remember our past, for it is this history and the cultural foundation we are built on that brought us to where we are today.

NHH Today

"It is our privilege to work with partners, patients and caregivers alike to ensure local residents have access to the best care at the right place and at the right time."

~ Jack Russell, Chair of the Board and Linda Davis, President and CEO

Services Provided

Over the past 13 years, NHH has evolved to provide service in four key areas of focus:

- Acute Care;
- Post-Acute Specialty Services;
- Outpatient Care; and
- Diagnostics.

These services have grown and changed based on the needs of the communities we serve, and the funding available to meet those needs. As well, opportunities have been developed through local and regional partnerships as we work together to create efficiencies across the broader health-care system while supporting care close to home.

Today, NHH is one of an increasingly inter-related network of care provider organizations in our region. Below is an overview of our services, related supports and linkages to regional centres.

ACUTE CARE

Emergency – staffed by family physicians, emergency medicine specialists, skilled nursing staff and other health care professionals, the NHH Emergency Department (ED) is open 24 hours a day, seven days a week, 365 days a year. The ED is easily accessible by ground ambulance transport and an on-site heliport provides increased access for emergency patients arriving at and departing from the hospital by air. More than 34,000 patients received care in NHH's ED in 2015/16.

Intensive Care – comprised of six private rooms, including one with negative pressure isolation capabilities, NHH's Intensive Care unit is equipped with state-of-the-art patient bed and medical equipment including ready access to life-saving technologies such as cardiac and arterial monitoring and respiratory ventilation and pressure support.

Medical/Surgical Inpatient Care – the largest unit in the hospital, the medical/surgical unit provides inter-professional care for patients who require acute care.

Maternal/Child Care – With six birthing suites, a dedicated operating room for caesarean sections and an experienced health care team, NHH provides newborns and their families with the personal and exceptional care expected of a community hospital – thanks to a strong partnership with local family physicians, obstetrician-gynaecologists, and midwives. Approximately 500 babies were welcomed at NHH in 2015/16.

Surgical Services – With more than 5,200 patient cases per year, NHH's surgical program provides a range of services, including general surgery, gynaecology, ophthalmology, orthopaedics, otolaryngology, plastics and urology as well as dental/oral surgery. Both day surgery and inpatient surgical services are provided.

POST-ACUTE SPECIALTY SERVICES

Restorative Care – specially designed for adults who are no longer in the acute phase of an illness but do not yet have the strength or independence necessary to safely return home, Restorative Care focuses on rebuilding strength and reducing the need for assistance that often follows an acute illness.

Inpatient Rehabilitation – specialized in caring for patients recovering from strokes, operations and injuries, NHH's inter-professional team of nurses, doctors and therapists partner with patients and their families to offer a therapeutic program designed to help people achieve their rehab goals, and regain as much independence as possible.

Palliative Care – NHH's Palliative Care program accommodates patients and their families when disease is not responsive to curative treatment. Patients are admitted to NHH for support and help managing pain and symptoms; some stay for the duration of their illness while others go home with support from our community partners.

OUTPATIENT CARE

Ambulatory Care Clinics – NHH's Ambulatory Care Unit hosts clinics with physicians and specialists in the areas of internal medicine, obstetrics and gynaecology, ophthalmology, general surgery, cardiology, ear/nose/throat, plastic surgery, paediatrics, rheumatology, mental health, neurology, orthopaedics and urology. Our health care team provides consultations, treatments and assessments including minor procedures as well as pre-operative assessment and education. Almost 16,000 patient visits were made to these clinics in 2015/16 alone; a further 700 consultations were facilitated locally thanks to the Ontario Telemedicine Network.

Cancer and Supportive Care Clinics – offered in partnership with the Durham Regional Cancer Centre and the Central East Regional Cancer Centre, the Cancer and Supporting Care Clinic at NHH provides blood and iron treatments not related to cancer as well as cancer care, including chemotherapy infusions, diagnosis, follow-up and supportive treatments.

Community Mental Health Services - offered in partnership with Ontario Shores Centre for Mental Health Services, NHH's mental health and addictions services, located at 1011 Elgin Street West, Suite 200, provides a variety of services to close to 40,000 visits per year to clients 16 years of age or older to treat a wide range of mental health issues. Specialized services such as Assertive Community Treatment, Supporting Housing and Intensive Case Management are also offered.

Dialysis - a satellite of the Peterborough Regional Renal Program, NHH provides haemodialysis to Level II dialysis patients. A renal insufficiency and nephrology clinic is also offered through the regional program with the support of nephrologists, dieticians, social workers and nurses. This clinic saw over 6,300 patient visits in 2015/16.

DIAGNOSTICS

Diagnostic Imaging – NHH offers Magnetic Resonance (MR) imaging, Bone Mineral Densitometry (BMD), advanced Computed Tomography (CT) scanning, mammography, nuclear medicine, general X-ray and ultrasound on an inpatient and outpatient basis.

Women's Health – the Women's Health Centre delivers bone density testing, ultrasound, mammography and breast needle biopsy. An affiliate of the Ontario Breast Screening Program services (OBSP), NHH also offers mammogram self-referral for eligible Ontario women between the ages of 50 and 74.

CLINICAL AND HOSPITAL SUPPORTS

Supporting our patient care services are teams of other professionals who, indirectly, make care possible. These include:

- Administration
- Maintenance/ Environmental Services
- Housekeeping
- Laboratory Services
- Medical Device Reprocessing
- Pharmacy

Viewed in terms of headcount, NHH's operations are performed by a growing number of individuals, from paid staff representing a broad range of professions to credentialed physicians, specialists and midwives to volunteers. Nurses remain the single largest contingent of professionals at NHH. Today the NHH team is as follows:

FULL- AND PART-TIME STAFF

- Full-time: 283
- Part-time: 318

TOTAL: 601

MEDICAL PRACTITIONERS

- Physicians (including specialists, such as surgeons, dentists, internists and hospitalists): 133
- Midwives: 14

TOTAL: 147

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VOLUNTEERS

- Board of Directors (not including ex officio members): 12
- Board Community Committee Volunteers: 5
- Auxiliary: 350
- Foundation: 75
- Spiritual Care: 11
- Patient and Family Advisory Council: 7

TOTAL: 460*

**Also active at NHH are countless volunteers associated with external groups, including the St. John Ambulance Therapy Dog program, community care drivers who support NHH patients through Community Care Northumberland, the Canadian Cancer Society and many others.*

Convenient Access to Care

NHH is located in the west end of Cobourg, just south of Highway 401. Our location ensures not only convenient hospital access, via personal and public transport, for our local communities, but also serves an important role in providing emergency services to people travelling through the area.

A bright, well-designed, and well-equipped facility, we are committed to:

- the continual improvement of access to facilities, policies, programs, practices and services for patients and their family members, staff, health care practitioners, volunteers and members of the community;
- the participation of people with disabilities in the development and review of our accessibility plans; and
- the ongoing review of hospital by-laws and policies to ensure we are meeting evolving accessibility standards.

On a per capita basis, our senior population is already one of the largest in the province, with 25% of Northumberland County residents over the age of 65.

Community Served

An in-depth Environmental Scan, conducted jointly in 2016 with our regional peer hospitals to assist with future planning, confirmed the projected growth in demand that will exist for acute services in our community and region (See Appendix 2).

On a per capita basis, our senior population is already one of the largest in the province, with 25% of Northumberland County residents over the age of 65. We are also living longer. The proportion of the population over the age of 75 is further expected to grow by 61% by the year 2025 (See Appendix 2). The need for care, and the complexity associated with its delivery, rises with age.

The only hospital within a 45- to 50-minute driving radius, NHH also serves a diverse population including Alderville First Nation, incoming refugees, people from diverse socio-economic backgrounds and young families with children. With more eastward migration out of the Greater Toronto Area (GTA) supported by GO transit and Highway 407 expansions, demand for acute care services from NHH is expected to increase further.

Our new strategic plan has been developed with the needs of our growing community in mind, while being conscious of system pressures. NHH continues to work with our partners to ensure the health care needs of the community are met, and future demand is planned for appropriately. Continued communication and engagement with all the stakeholders we serve are priorities for NHH as we move forward.

Partnerships

Northumberland Hills Hospital is part of a strong local system of community partners. These linkages have been expanded in recent years with good result.

As we move forward, we will continue working collaboratively with our partners and hospitals in Northumberland County and beyond to achieve the best outcomes for our patients. While we have much work to do, our collective goal is to ensure that patients and their families have clear, and more seamless pathways from one care provider organization to another.

Some of our current partnerships are in the areas of mental health, chemotherapy and dialysis. NHH is also working with partners to develop extended medical services in palliative care and maternal/child health, while developing voluntary integrated back-office services with other hospitals. Working with local care providers and organizations, we will continue to create a more patient-centric approach to care across our region while also seeking out further efficiencies made possible by reduced duplication.

Looking ahead, NHH will continue to not only actively build stronger and mutually beneficial relationships with medical and care provider organizations, educational institutions, and research institutions, but we will also continue to engage our patients and caregivers as partners in care delivery.

Economic Impact

NHH has an important direct and indirect impact on the local community of Northumberland County. The most prominent direct impact is through wages and salaries, which NHH influences locally through 600-plus full- and part-time staff and approximately 150 medical practitioners. Another direct influence is through the hospital's acquisition of operating equipment and supplies, much of which is purchased locally.

Indirect economic impact flows outward from NHH through wait time and transportation cost savings, the hospital's impact on government taxes and programs, and the role it plays in helping to attract the migration of people from other areas of the country, province or county as a result of its presence.

In 2011, an independent external analysis estimated that *"NHH has a total economic impact of $101 million every year in terms of total operating output. The hospital itself accounts for $61.6 million, which comes from its own direct operating and capital expenditures. The other $39.4 million comes from expenditures through other organizations as a result of NHH's presence in the community."* The total economic impact of NHH continues to expand. It is estimated to be approximately 10 per cent higher ($111 million/year) today.

Tradition of Engagement

NHH has a long history of engaging the communities it serves.

With roots reaching back to late 1800s, the community's strong sense of connection with NHH continues today, as illustrated by support from community physicians, exceptional donor generosity—facilitated by the NHH Foundation and NHH Auxiliary— and the delivery of thousands of hours of volunteer service each year.

In recent years, NHH has worked hard to continuously expand opportunities to engage. That includes sharing information transparently, and reaching out to our community to gain input and feedback before decisions are made – as has been the case in the development of this strategic plan.

Two Frameworks now guide our work.

The first, our **Community Engagement Framework**, was developed in 2011 and updated in 2015. It sets out an overview of our understanding of how sincere and timely engagement will assist in meeting patient care expectations within the community, and our accountabilities within the broader system in which we operate.

More recently, our **Patient- and Family-Centred Care Framework**, developed in 2016, explains how we operationalize our commitment to patient-centred care.

Three particular examples stand out among our many experiences with community and patient engagement.

The **NHH Citizen's Advisory Panel**, created in 2009, was anchored in three principles that guide our community engagement activities today, including proactively seeking input, maintaining transparency through dialogue and reflecting the diversity of the community we serve. The Panel, independent of NHH's Board of Directors, was a new way for us to work with the community to solve the difficult problem of service prioritization. Through a thorough and extensive process, the Panel ranked our services into "core" and "non-core" and informed our Community Engagement Framework and related Board Policy. The Ministry of Health and Long-Term Care praised the process for being innovative.

The **Northumberland Partners Advancing Transitions in Healthcare** project, or Northumberland PATH, funded by The Change Foundation and formed in 2012, directly demonstrated the value of involving patient and family experience to drive health system and hospital improvement strategies. This project was another first for Ontario as it was a local system-wide venture that brought together 12 health care organizations and patient advocacy groups. Over the course of several years, we worked to improve experiences and transitions for seniors in the Northumberland community. The PATH project demonstrated an interactive, innovative and patient-centred approach to health care provision and we take the lessons learned from PATH forward in engaging our community, patients and their families.

NHH's **Patient and Family Advisory Council** is the most recent example of proactive patient and family engagement at NHH. Formed in 2016, the Council has evolved out of NHH's Patient- and Family-Centred Care Framework and involves patients and/or their loved ones in quarterly meetings as a group as well monthly representation on service-specific Quality and Practice Councils and other ad hoc projects. The Council is expected to expand over time, with future involvement aimed at bringing the patient and caregiver voice to recruitment processes and other areas of the hospital.

The *Creating Our Future Together* strategic planning process is further testament to our commitment to engagement, both internal and with the community. Through discussions with staff and clinicians from every department of the hospital, conversations with community partners and community members, and internal and external surveys, NHH succeeded in engaging over 450 people in the strategic planning process.

Provincial and Local Context

Our future directions have also been informed by priorities at both the provincial and Local Health Integration Network (LHIN) levels.

Provincial and Local Context

In addition to staff, physician and community input, our future directions have also been informed by priorities at both the provincial and Local Health Integration Network (LHIN) levels.

The Ministry of Health and Long-Term Care organizes the provincial health-care system within 14 regions or LHINs. NHH is part of the Central East Local Health Integration Network (Central East LHIN) and within that the "sub-region" of Northumberland County, one of seven sub-regions in the Central East that now provide a geographic foundation for the development of local integrated systems of care.

Our new strategic plan reflects the priorities set out in the Central East LHIN's latest Integrated Health Services Plan, *Living Healthier at Home*, which focuses on four areas: care for seniors, vascular health, mental health and addictions, and palliative care.

Provincially, the *Patients First: Action Plan for Health Care* encourages health provider organizations to place patients at the centre of care, while developing innovative models of care delivery. Provincial priorities include improving access to care, connecting services through increased coordination and integration among partner organizations, and educating people about when and where to access health services to get the right care at the right place at the right time. Our new strategic plan reflects these priorities as well, to help make them realities at a local level.

Focus on Quality, Access and Sustainability

The quality agenda for hospitals is detailed in Ontario's ***Excellent Care for All Act*** (ECFAA). This legislation seeks to 'put patients first' by strengthening the health care sector's organizational focus and accountability regarding the delivery of high quality patient care. With strong local evidence of the benefits of patient engagement, NHH supports this important shift.

Together with the ***Public Hospitals Act***, ECFAA defines what quality looks like within the health care sector, reinforces shared responsibility for quality of care, supports local boards' authority to oversee the delivery of high quality of care, and ensures health care organizations make information on their commitment to quality publicly available.

To that end, NHH will continue to implement the various aspects of ECFAA to ensure strong, continuous quality improvement and public accountability. We advance quality at NHH through our ***Quality and Patient Safety Framework***.

The four cornerstones upon which NHH's Quality and Patient Safety Framework and (related measures) are built include:

Quality Attributes

- Accessibility, effectiveness, safety, patient-centredness, equity, and efficiency are among the indicators tracked

Safety

- NHH provides a safe environment and ensures safe practices for all

Integrated Risk Management

- NHH is proactive in prevention, planning and protection to minimize the effects of risk to operations, plant, human resources, patients and the community

Performance Monitoring

- Through our annual public Quality Improvement Plans and internal quality indicator reports, NHH assesses performance, identifies opportunities and strategically makes changes that will result in improvements. Individual performance indicators are also linked to the strategic plan and to the attributes of quality.

Finally, NHH focuses attention on the enablers of quality patient care including culture, leadership, collaboration and sustainability. Using the model recommended by the Institute for Healthcare Improvement, NHH continually applies the 'plan, do, study, act' methodology to support ongoing quality improvement.

Through this Framework, NHH is also aligned with Health Quality Ontario (HQO), the provincial advisor and monitor of health care quality, and its "Common Quality Agenda" indicators related to hospital care. By focusing on supporting both clinicians and patients in making informed choices to ensure high quality of care, HQO is working to evolve models of value-based and accountable care by supporting both the analysis and reporting that improves health system and patient outcomes. By promoting and maintaining standards of practice based on the best evidence available and patient experience, NHH agrees that improved health system and patient outcomes will result.

Financial Context

Our hospital has made difficult decisions in recent years to maintain financial viability. The new models adopted by the province in the context of Health System Funding Reform, introduced in 2012, have created challenges for a number of medium-sized hospitals across Ontario, including NHH. This is due in part to ongoing inflationary cost increases, but also because of a historical deficit—an inherent flaw in the way NHH is currently funded.

Our hospital has made difficult decisions in recent years to maintain financial viability.

Budget shortfalls resulted in first a Coaching Review of NHH's financial situation and, following that, an External Operational Review. Through these analyses, it has been consistently highlighted that Northumberland Hills Hospital delivers high quality care, efficiently. Further, NHH's ability to become continuously more efficient, even in the face of rising patient demand, was also proven. Notwithstanding, NHH produced a multi-year Hospital Improvement Plan with several million dollars in further efficiencies identified – a significant amount on an annual operating budget of just under $70 million. We are now in the process of implementing this Plan, with good results in Year 1. Projected efficiencies tied to integration opportunities are proving to be difficult to realize.

We look forward to the continued assistance of our LHIN and the Ministry of Health and Long-Term Care as we work together to put NHH on the solid financial footing our community needs.

NHH has been maintaining efficiencies and will continue to seek appropriate cost-saving opportunities. We will also advocate for further adjustments to government funding for hospitals such as ours. In that, we look forward to the continued assistance of our LHIN and the Ministry of Health and Long-Term Care as we work together to put NHH on the solid financial footing our community needs.

The Strategic Planning Process

NHH will continue to not only actively build stronger and mutually beneficial relationships with medical and care provider organizations, educational institutions, and research institutions, but we will also continue to engage our patients and caregivers as partners in care delivery.

The Strategic Planning Process

Creating Our Future Together was developed not only based on information and data captured in the Environmental Scan (see Appendix 2), but also from an extensive community consultation. We are grateful for the support and constructive input we have received throughout this process and would like to thank everyone who contributed to the development of this strategic plan.

Our primary research through interviews, conversations and surveys with internal and external stakeholders helped provide a deeper understanding of local needs, the progress we have made toward meeting those needs, and the work still to be done.

Approach to Consultation

Through our strategic planning process, input was received from across the West Northumberland community. Launched in November 2016, the process included two community conversations, one based in Cobourg and one in Port Hope, staff, clinician and management focus groups, internal and external surveys (electronic and hard-copy), and interviews with municipal leaders, partner organizations and other interest groups (see Appendix 1).

More than 450 internal and external voices informed the strategic objectives and related priorities now set out in our new strategic plan.

Following consultation, the hospital hosted a working session in January of 2017 with our partners, Board of Directors, medical leads and senior management team. At this session participants received and reviewed the data gathered throughout consultation, as well as the findings from the Environmental Scan and commitments and accountabilities already under way as a result of the Hospital Improvement Plan and other work. This comprehensive analysis of the environment in which NHH is operating informed discussions of our future direction.

Our draft shared purpose, strategic objectives and priorities were then shared with internal and external audiences to validate that our proposed future direction is aligned with the needs of the community. Additionally, internal consultations with staff, facilitated by NHH's Values Ambassadors, continued to develop core values that are meaningful and authentic to NHH staff. Every department of the hospital took part in this Core Values process, through which staff members were asked to determine if the core values of the hospital resonated with them. Through this process, four of NHH's core values were renewed and a new value, Teamwork, was added in place of Collaboration.

The following provides a high-level overview of key conclusions from our consultation process. Consultation methodology and a comprehensive list of the number of individuals consulted is provided in Appendix 1.

What We Heard

PATIENT EXPERIENCE

- Vast majority of stakeholders agreed NHH provides high quality service
- Stakeholders indicated satisfaction with NHH's delivery of service
- Wait time for treatment in the Emergency Department (ED) was identified as a concern for many
- Stakeholders expressed satisfaction with the breadth of services NHH provides
- There was a desire for more communication and follow-up with patients and caregivers

Vast majority of stakeholders agreed NHH provides high quality service

SERVICES AND FACILITIES

- Most stakeholders expressed a high level of satisfaction with the modern and high-quality facilities that NHH maintains
- NHH's diagnostic equipment is a source of pride for staff and the community alike
- Some stakeholders expressed concerns about the patient to nurse ratio in the hospital
- Stakeholders acknowledged that volunteers are an integral part of the hospital – they provide great service and promote a friendly environment
- Northumberland Hills Hospital has an opportunity to become a leader in care for seniors, as various stakeholders highlighted geriatric and palliative care as areas of excellence for the hospital
- Mental health emerged as a major theme and need in the community

INTERNAL COMMUNICATION

- Internal stakeholders emphasized the need for more and better inter-department communication within the hospital
- There is a strong desire among our staff participants to be heard and, specifically, for more opportunities to provide meaningful input such as those that were provided during the strategic planning process

LEARNING AND GROWTH

- Internal stakeholders expressed interest in more professional development and training opportunities

CULTURE

- NHH's team is proud to be able to serve their community well and do so in a patient-centric way
- Internal stakeholders emphasized the importance of "teamwork" and collaboration
- Vast majority of stakeholders commended the atmosphere at NHH for being welcoming and friendly
- Stakeholders felt that the hospital leadership and staff are interested in innovation, and remain open to new and different approaches to providing service
- Some internal stakeholders highlighted the need for more collaboration among co-workers in the workplace
- Several stakeholders signalled that, given recent changes, morale could be higher among staff

FUNDING

- Financial constraints add additional stress. Financial constraint is perceived as a factor in most decisions of the leadership of the hospital and various partner organizations

COMMUNITY

- Most stakeholders commended NHH's community engagement efforts
- Various stakeholders recommended that the hospital do more to inform and educate the community on the services and resources that the hospital provides
- Informing the community about other health care resources available outside of the hospital emerged as a theme

Wait time for treatment in the Emergency Department (ED) was identified as a concern for many

DEMOGRAPHICS

- The growing, aging population adds a level of complexity to the services NHH and its partners need to provide, and how the provision is taking place
- Stakeholders noted that while the hospital's catchment area currently has a larger number of seniors compared to the provincial average, the hospital should prepare for growing service demand from other age groups

INTEGRATION

- There is a desire among some community organizations and partner organizations for NHH to help coordinate local health care resources
- Most stakeholders view NHH as a good partner now or a good future partner
- Stakeholders expressed that NHH has the opportunity to expand its service offerings and improve care through partnerships
- Beyond services, with the funding realities in the health care environment, stakeholders expressed that additional back-office collaboration should be actively pursued
- Information-sharing within the health care community emerged as an area of opportunity and potential added complexity

2017/18 - 2020/21 Strategic Direction

As we look to our future, we also remember our past, for it is this history and the cultural foundation we are built on that brought us to where we are today.

Our Shared Purpose

Our Shared Purpose reflects the central role and aspiration for NHH. It speaks to why we exist and how we can make an impact in our community.

Exceptional patient care. Every time.

Our Service Mandate

Our Service Mandate captures the core services NHH provides to the community and how. Originally established in 2010, our Service Mandate remains relevant today and has been validated through the recent strategic planning process. The Mandate highlights our responsibilities as an acute-care facility and as part of a larger, interconnected system. NHH will continue to provide high quality, patient-centric care in our community, with our partners in accordance with our Service Mandate.

NHH is a community hospital providing acute care services to the west Northumberland community. In addition, when financially feasible and appropriate, in order to improve local access, NHH partners with other health service providers to deliver advanced or specialized health services.

NHH is committed to continuously explore and implement delivery models that will integrate services across the health care system in order to enhance quality of care, improve access to services and ensure effective use of resources.

Our Core Values

Our Core Values define the way we, the NHH team, perform our work, manifested through our actions and interactions with each other, our patients and the larger community.

Integrity *lies in being true to our self, our team and our patients*

Quality *is where our high standards and innovation meet*

Respect *flows from appreciating each person for the qualities and experiences that they bring*

Compassion *means having empathy for our patients, their families and each other*

Teamwork *is working together in collaborative partnerships in an environment of trust and respect to achieve the best possible care*

Our Strategic Objectives and Priorities

Our Strategic Objectives and Priorities, with our Service Mandate, seek to address and highlight our community's needs while, where appropriate, being cognizant of the priorities of the Ministry of Health and Long-Term Care and, closer to home, the Central East Local Health Integration Network.

Our Strategic Objectives are the main areas of focus of NHH over the duration of this strategic plan. They describe, at a high level, what we will do to fulfill Our Shared Purpose.

Our Priorities describe in more detail what must be done to advance Our Strategic Objectives.

OUR STRATEGIC OBJECTIVES

I. Quality and Safety

II. Great Place to Work and Volunteer

III. Collaborative Community Partnerships

IV. Operational Excellence

I. QUALITY AND SAFETY

Guided by our community's needs and our Service Mandate to deliver acute-care services to west Northumberland, we will continue to provide access to and invest in core in-patient and out-patient programs. Further, we will continue to provide safe, top-quality health care services and an outstanding patient and family experience by tracking our successes against clinical and patient-reported outcomes. Through consultation and engagement with patients and families, we will create an experience that is exemplary.

As we continue to provide and deliver comprehensive programs and services consistent with our Service Mandate, we will build upon our existing strengths through the delivery and emphasis on the following priorities.

Priorities

1.1 Improve outcomes and the patient and family experience

- Proactively engage patients and families, and evaluate experiences over time
- Seek and apply leading practices to continuously improve patient and family experience, with a particular focus on the Emergency Department
- Enhance discharge communication and patient education materials
- Enhance hand-off communication to improve the efficiency and safety of patient transfers within and out of NHH

1.2 Build upon our leadership in seniors' care in preparation for rising community needs

- Continue to be innovative in our approach to seniors' care delivery, to ensure seniors receive the best possible care at the right place, in the right time
- Demonstrate broader system impact of innovative approaches to seniors' care

1.3 Expand palliative and end-of-life care capacity in our community

- Work with partners to expand our community's capacity in palliative and end of life care services
- Share our core competency and expertise
- Support the establishment of a new residential hospice in our community

1.4 Advance mental health supports in our community

- Work with community partners to continuously improve access to, and meet the growing need for, mental health supports in our community
- Build mental health leading practice capacity across all areas of NHH

II. GREAT PLACE TO WORK AND VOLUNTEER

Through our shared commitment to exceptional patient care, we will build an organizational culture that attracts and supports outstanding professionals and volunteers. We will actively engage each other in conversations that promote a healthy, safe and energizing environment. Further, we will create and grow opportunities that allow every member of our team to reach the full potential of their skills and interests.

Priorities

2.1 Enhance our culture

- Actively support and promote an internal culture that is guided by our values in ways that respect each other's differences and appreciate the unique perspective each of us bring to the table
- Proactively engage staff, physicians, management and volunteers in dialogue on our respective priorities and concerns, and listen to one another

2.2 Support ongoing staff training and development

- Provide targeted training and continued education for staff to help them meet increasingly diverse patient needs and maximize practice capabilities
- Offer opportunities for staff to learn about leading practices and evidence-based developments in working with people with mental health needs

2.3 Enrich the impact and experience of our volunteers and students

- Continue to provide meaningful opportunities for our diverse range of volunteers and students, and leverage their talents and skills

2.4 Sustain physician engagement on hospital and system priorities

- Continue to engage physicians in developing the future direction of NHH, and addressing potential opportunities in the local health care system

III. COLLABORATIVE COMMUNITY PARTNERSHIPS

Acting as a catalyst for conversations, where appropriate, we will seek to enhance and promote health services and capacity within our community. Working with our community partners we will provide comprehensive care through collaboration and innovation.

Priorities

3.1 Support the development of a more integrated health care experience for patients in our community

- Collaborate with partners to create more seamless and integrated care pathways
- Work with community partners to identify and address service gaps in NHH and across our region

3.2 Develop innovative local partnership opportunities

- Support the development of efficient information and resource sharing to maximize efficiencies among partner organizations
- Address health care needs in our communities through innovative governance collaborations with local care provider organizations

IV. OPERATIONAL EXCELLENCE

We believe in continuous improvement and strive to make our great hospital even better. That means taking proactive steps to ensure the highest possible quality of care, in an environment that is both safe and efficient. It means maintaining a culture of accountability to all of our stakeholders. And it means looking confidently to the future, ensuring that we are planning ahead to meet the increased demands and future needs of our community.

Priorities

4.1 Enhance decision-support resources

- Better leverage knowledge and data through optimized decision-support and planning methods to ensure local health care preparedness to meet increasing community needs
- Continue to build our human resources capacity and expertise

4.2 Seek new and alternate sources of funding

- Explore opportunities that build upon our capacity and financial strength, including opportunities to grow our services, where appropriate

4.3 Prepare for and adapt to future service needs related to changing demographics

- Build our capacity to ensure our ongoing ability to deliver against our service mandate and provide quality care close to home
- Be creative and innovative in the use of our physical, technological, and human resources

4.4 Apply innovative approaches to managing our operations

- Proactively streamline processes while improving the patient and staff experience

4.5 Advocate for sustainable funding in the context of provincial funding reform

- Continue to advocate at regional and provincial tables to ensure long-term sustainability for NHH as a medium-sized hospital in the context of ongoing Health System Funding Reform

Our Strategic Enablers

Not priorities in their own right, strategic enablers are supports we need to do the work identified in our strategic plan.

TECHNOLOGY

NHH, in collaboration with five other hospitals in the Central East LHIN, is currently seeking a modern clinical information system.

Currently, NHH is actively investing in technology infrastructure to support our readiness for a more integrated electronic health record. A combined form of both electronic and paper records is in place in the interim. Exploration and investment into an efficient clinical information system will likely continue through the life of this strategic plan.

We will work with local partners to create and sustain efficient, integrated services.

COMMUNICATION

We will continue to involve our patients, caregivers, staff, clinicians and community partners in constructive dialogue to improve our operations, experience, and clinical results.

We will engage internal and external stakeholders effectively to continue to shape our services and future direction.

EDUCATION

Ongoing education and training for our staff remains a priority for the hospital and will continue to enable us to provide quality and safe patient care. Promoting knowledge in all areas of the hospital's operations will allow us to keep up-to-date with evidence-based practices.

We will continually enhance and promote knowledge acquisition and sharing to ensure safe, quality service delivery at the bedside and across hospital operations.

Building Our Future

Our community's support has been key in the development of this strategic plan, and it will continue to play a crucial role in its successful implementation.

Building Our Future

This is a time of continued transformation within Ontario's health care system, our community and our hospital. Our population is growing. Addressing the needs of an expanding and aging population, while managing fiscal challenges, has shaped much of our strategic direction over the past six years. Ensuring access while we continue to deliver high quality care will continue to be our priorities going forward as we set a course for our future sustainability.

We will continue to build our strengths and flexibility to meet the changing needs of the community, within the context of the broader health care system landscape. Northumberland Hills Hospital's Operational Review and Coaching Review provided powerful external validation that we are delivering essential services for our communities while maintaining efficiencies. These findings were reinforced through our 2017 Accreditation process. Keeping the needs of the community and the changing health care environment in mind, our four key areas of focus will continue to be quality care for patients, building a strong team, effectively collaborating with partners and achieving operational excellence.

An operational plan, which will be periodically reviewed and updated, has been developed to specify actions and measures for each of the Strategic Objectives and Priorities highlighted in this document. With the end goal of creating healthier communities, the key measurements of progress against this strategic plan will be through the lens of providing access to quality care and maintaining a strong, sustainable hospital. Guided by our Quality Framework, we will use indicators such as patient satisfaction, wait times and progress against financial targets to measure our progress towards maintaining a sustainable hospital.

Our community's support has been key in the development of this strategic plan, and it will continue to play a crucial role in its successful implementation. As we begin our exciting journey and look to our path ahead, we know that the future will be shaped by strengthening partnership and collaboration with our patients, families, team and partners.

Appendix 1
Strategic Planning Consultation Methodology

Our consultations gathered diverse stakeholder perspectives on the health care sector, the hospital, and the needs of the patients in the community.

Appendix 1 – Strategic Planning Consultation Methodology

The objective of the consultation methodology followed during the strategic planning process was to gather diverse stakeholder perspectives on the sector, the hospital, and the needs of patients in the community. All data was gathered and analyzed by a third party firm and only presented in aggregate to maintain confidentiality and anonymity of all participants.

Northumberland Hills Hospital expresses particular thanks to the following organizations, agencies and individuals, both internal and in the community, for their ongoing support and participation through the strategic planning process.

COMMUNITY

- Patients and caregivers from community served

LOCAL LEADERSHIP

- Municipality of Port Hope
- Town of Cobourg
- Township of Cramahe
- Township of Alnwick/ Haldimand
- Township of Hamilton
- Northumberland County
- Alderville First Nation

PEER HOSPITALS

- Ross Memorial Hospital
- Campbellford Memorial Hospital
- Lakeridge Health
- Ontario Shores
- Peterborough Regional Health Centre

COMMUNITY AND OTHER PARTNERS

- Port Hope Community Health Centre
- Seniors Care Network
- Northumberland Family Health Team
- Community Care Northumberland
- Central East Community Care Access Centre
- Green Wood Coalition
- Streamway Villa
- Extendicare
- Probus Club
- Hope Street Terrace
- Central East Local Health Integration Network

INTERNAL

- NHH staff
- NHH volunteers
- NHH physicians and midwives
- NHH management and leadership

STAKEHOLDERS ENGAGED THROUGH THE FOLLOWING RESEARCH METHODS

- Internal focus groups with NHH staff, volunteers, physicians, management and leadership: 101 participants
- Conversations with community and other partners: 60 participants
- Executive interviews with partner organizations: 32 participants
- Internal survey: 112 participants
- External survey (online and handwritten): 112 participants
- Values Workshops:
  – Department/unit-specific consultations: 175 participants
  – Hospital-wide validation: 50 participants

TOTAL: 642

Appendix 2
Environmental Scan

Deloitte.

Deloitte.

Northumberland Hills Hospital

Environmental Scan

Environmental Scan Report

Final Deliverable
January 13, 2017

Table of Contents

Methodology Overview

Overview of the Environmental Scan Objectives

An environmental scan will provide Northumberland Hills Hospital with a systematic survey of their local environment

Deloitte was engaged to assess the macro and micro level trends in the environment and healthcare industry for Northumberland Hills Hospital (NHH), as part of a series of scans to be completed for the five hospital partners in the North East Cluster (NE Cluster) of the Central East Local Health Integration Network (CE LHIN).

Northumberland Hills Hospital

PRHC Peterborough Regional Health Centre

Campbellford Memorial Hospital

Ross Memorial Hospital Kawartha Lakes

Haliburton Highlands Health Services — Leaders in Innovative Rural Health Care

The objective of the environmental scan is to provide a summary of leading health system trends and priorities that can support and inform the strategic planning process for each hospital partner. Northumberland Hills Hospital will receive an environmental scan that includes recommendations and insights specific to the organization, as well as those that are defined from the collective level.

Environmental Scan Framework

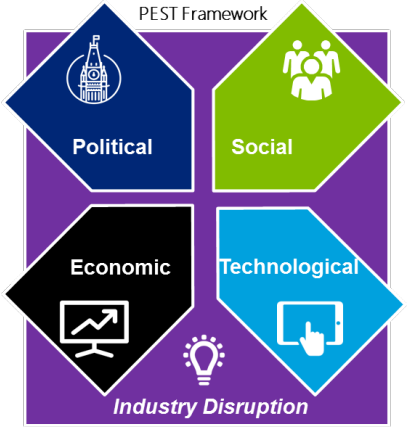
The local environment will be assessed from both a qualitative and quantitative perspective to derive meaningful insights that will support strategic planning for the organization

The environmental scan report will be structured to leverage the PEST framework (Political, Economic, Social and Technological assessment), as well as with hospital-specific data to understand factors influencing the performance of NHH. These qualitative and quantitative foci will be presented in this report as:

Part One – Qualitative Insights

PEST Analysis

Analysis will be conducted to assess and identify potential micro and macro environmental trends and industry drivers. Industry disruptors will be presented as an overlay to understand potential future factors for consideration.



Part Two – Quantitative Insights

Data Driven Insights and Analysis

Analysis and insights derived with respect to hospital and population specific data, forecasts, market share and clinical utilization.

- Population Profile
- Market Share
- Clinical Utilization
- Forecasts

Political, Social, Economic and Technological (PEST) Environmental Factors Influencing Healthcare in Ontario

Qualitative Insights

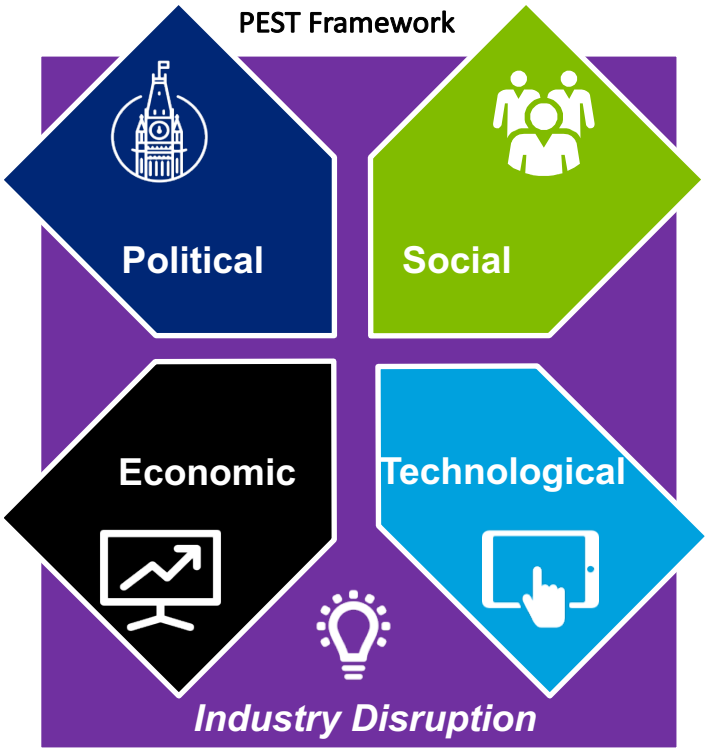
Methodology for Qualitative Insights

The methodology used to frame the qualitative analysis in this environmental scan takes into consideration the political, economic, social and technological factors that influence strategic direction and decision-making within an organization

The qualitative analysis will assess the political, economic, social, and technological environmental factors that may influence the strategic direction of one or many of the NE Cluster hospital partners. These factors may include trends and industry drivers related to the regulatory environment, philanthropic/donor objectives, legal trends, and external resources influencing the future capabilities of each organization.

Relevant trends and industry drivers from the **political environment** will highlight factors that may impact NE Cluster organizations. Potential areas of relevance include population and health management; health system transformation; and advancing strategic priorities at a local and system level.

Relevant trends and drivers related to provincial financial constraints, evidence-based outcomes and emphasis on value-for-money to illustrate the **economic factors** that influence the strategic direction of hospitals in the Canadian healthcare system.



Observations of **social factors** that influence the strategic direction of organizations. This includes evolving trends and drivers related to social determinants of health, increasing demands of patient consumerism and influence of quality-related standards and best practices (e.g. driven by HQO).

Overview of key **technological factors** that are driving changes to infrastructure, data, and information management, as well as changes being observed within the system as a result of digital disruption and support for innovative models of care / service delivery.

Activities that are currently understood to be **disrupting the healthcare industry** are presented as an overlay for future consideration. These factors are at differing stages of maturity; however are anticipated to have a future impact on healthcare service delivery.

Political Trends and Industry Drivers

Summary of Trends and Planning Considerations

Changing population needs are shifting the way that care is being delivered, resulting in emerging ***political*** trends that are impacting the way health service providers, across all sectors, are defining their strategic directions

Below is a summary of the major political trends that are influencing health sector in general, and service providers in particular. The detailed pages that follow expand on the below trends and identify potential considerations for NHH as it considers its future directions

Key Trends	*Considerations to Highlight*
1 **Health System Transformation**	Guided by the Ministry's *Patients First: Action Plan for Health Care (2015),* the transformation efforts of Ontario's health care system are focusing on creating innovative home / community service delivery models and new funding models. The emphasizes continues to be a commitment and promise to putting patients first. Significant health system change will require individual and collective responses from hospitals to ensure continuity and access for patients across all target populations, and ongoing sustainability for hospitals to remain leaders within their local communities.
2 **Advancing Strategic Priorities at a Local and System Level**	A number of policy and legislative decisions have been taken by government that impact both system planning and local service delivery. Recent examples include the introduction of Bill 41 and the implementation of Health System Funding Reform (HSFR). NHH should evaluate and understand the implications and opportunities to act as a partners and leaders within the sub-region and LHIN, exploring collaborative care models and enhancing linkages with primary care (or other care partners such as home, community care or public health) to enhance coordination of services and enhance health system performance / efficiency

1 | Health System Transformation

As the second action plan released by the MOHLTC, *Patients First: Action Plan for Health Care (2015)* encourages Ontario's health care system to continue to prioritize refined approaches to health care management, positioning patients at the center of care while developing innovative models of care delivery

Key Highlights

- The Action Plan (2015) challenges the system to *improve access* for patients to the right care; *connect services* through increased coordination and integration across acute, primary and community care providers; *support people and patients* with the education, information and transparency needed to make the right decisions about their health; and *protect our universal public health care system*
- Health Quality Ontario (HQO) is *increasingly aligning with evolving models of value-based / accountable care and approaches to population health* by supporting analysis and reporting to improve health system and patient outcomes
- The *Integrated Health Service Plan (IHSP) for the CE LHIN* Is in close alignment with the MOHLTC strategic plans and identified specific strategic aims for the region (incl. focus on enabling patient populations to remain healthier at home)

Planning Considerations

- Understand and evaluate implications and opportunities for NHH to align with the objectives of the Ministry's Action Plan
- Continue to explore collaborative care models and enhancing linkages with primary care, home care and community care partners to enhance coordination of services and health system performance / efficiency (e.g. consider "non-traditional" partnerships to support specific patient populations, opportunities to align and promote the IHSP in CE LHIN, etc.)
- Pursue value-based approaches to delivering high quality care and enhancing the patient and family experience (e.g. aligning with the Institute for Healthcare Improvement Triple Aim Framework)

2 | Advancing Strategic Priorities at a Local and System Level

(continued)

The MOHLTC released a discussion paper to address structural issues that create inequities in patient access to care by expanding the role of LHINs to include accountability for managing access to care services within the home and community

Key Highlights

- In order *to reduce gaps and strengthen patient centered care in Ontario*, the MOHLTC is proposing to expand the roles of the LHINs:
  - *More effective integration and greater equity* – LHINs would be responsible for all health service planning and smaller sub-regions would be identified and be the focal point for local planning, home and community care
  - *Timely access to primary care and seamless links* – LHINs would take responsibility for primary care planning and performance management
  - *More consistent and accessible community care* – The responsibility for service management and delivery would be transferred from CCAC's to LHINs
  - *Stronger links between public health and other services* – Formalize linkages between LHINs and Public Health Units
  - *Inclusion of Indigenous voices in health care planning* – Ensure a more inclusive environment for Indigenous voices through a stronger role in system planning and service delivery

Planning Considerations

- Explore opportunities to improve integration / transitions of care with local home and community care partners (within and beyond the IHSP activity) in order to counterbalance the challenges experienced by rural providers with broad geographical reach
- Explore collaborative care models and further linkages with primary care (or other care partners such as home, community care or public health) to enhance service coordination
- Develop strategic options to respond to upcoming changes in the LHIN-CCAC structure and dynamic, including understanding the impact of the LHIN sub-regions. NHH may see new or enhanced roles in primary care planning, home care, community care, etc.
- As the roles and structures of LHINs change (i.e., integration with CCAC, primary care planning, creation of sub-regions, etc.), consider how the relationships with other groups such as Public Health Units may impact hospital operations and patient health outcomes

2 | Advancing Strategic Priorities at a Local and System Level

(continued)

Bill 41, *Patients First Act 2016*, creates a shift in foci for the authoritative bodies and Health Service Providers (HSPs) and formalizes the proposal to transfer accountability for service management and delivery away from CCACs and onto the LHINs

Key Highlights

- Introduction of *Bill 41, Patients First Act 2016* creates a shift in the foci of local authoritative bodies and HSPs
- The LHIN has formally indicated *Ontario Shores will act as the LHIN-wide lead for mental health and Lakeridge Health will act as the LHIN-wide lead for addictions services*
- Ongoing stalemate in *negotiations between the Ontario Medical Association (OMA) and ministry will continue to reverberate at the local level.* There is an elevated level of frustration that is impacting the working environment, and the way in which physicians are collaborating with hospitals and other health system partners.

Planning Considerations

- Explore the implications of Bill 41: Patients First Act 2016 as the adjustment required to accommodate the additional LHIN oversight on hospitals may temporarily impact the efficiency of the system (e.g. causing disruption / delay for access to post-acute home care services provided by CCAC)
- Consider how the dissemination and re-integration of services delivered in the Scarborough cluster may impact other hospitals in the CE-LHIN (e.g. increased volume to regional programs provided for NHH, etc.)
- Consider strategies to mitigate the impact of Physician Services Agreement negotiations on hospital culture, physician engagement in hospital-led initiatives, ensuring physician ED and on-call coverage, cost impact of stipends, impacts of potential delisting of services, etc.

2 | Advancing Strategic Priorities at a Local and System Level

(continued)

The MOHLTC has recently released an influential set of recommendations to address the number of organizations seeking to implement or renew an HIS

Key Highlights

- There are *significant changes to come across the health sectors* as the government determines the next phase for eHealth in Ontario. There are current reviews occurring to *refresh the eHealth Strategy for Ontario* and currently an *assessment of the data assets in Ontario* is underway, including the potential monetization of these assets
- The *recommendations to support HIS renewal activities* included:
  - *Organizations would partner or form clusters* to maximize current and future investments, looking to referral patterns or existing HIS installs for sustainable, long-term opportunities to manage HIS investments
  - *Procurement would be altered to include* the ability for hospitals to join existing peer HIS installations, as well as include multi-tenancy structure considerations
  - *Clinical adoption and outcomes would be supported by a formalized HIS Community of Practice* that supports the acquisition, implementation and optimization of HIS systems
  - *Financing expectations would shift* to develop cost standards and tools to support hospital accounting and coding and to better understand local impacts resulting from HIS investment
- An *Auditor General Report is scheduled for release* that will focus on eHealth Ontario (timing of release TBD)

Planning Considerations

- Consideration of the direction that will be provided from the MOHLTC upon completion of the revised version of the eHealth plan ('eHealth 2.0') will provide NHH with direction for future IT infrastructure investments
- With the growing demand for real-time access to information, business intelligence (BI) and decision making support tools, consider opportunities to partner with peer organizations, and/or those that offer a strong business case (e.g. referral patterns, current regional activity, etc.) to share IT/HIS infrastructure
- Understand the strategic priorities of potential hospital partners to determine if there are clinical and/or financial incentives to join their HIS instance (e.g. identify hospitals with procurement structures defined for multi-tenancy to leverage capacity within the region to address aging and not highly functioning infrastructure at lesser costs)
- The recently-released Auditor General's report is placing increased scrutiny and focus on how public sector organizations, like hospitals, are delivering value for money (i.e., organization's need to continue to be conscious of their ability to monitor, measure and report on the outcomes and value they deliver)

Economic Trends and Industry Drivers

Summary of Trends and Planning Considerations

Evolving approaches to ***economic*** policy is focusing on driving value-for-money, resulting in health service providers creating opportunity for collaborative and innovative ways to deliver care to the increasing needs of their patients and communities

Below is a summary of the key economic trends that are influencing health service providers. The detailed pages that follow expand on the below trends and identify potential considerations for NE Cluster Hospitals to leverage as needed (e.g. for strategic planning purposes).

Key Trends	*Considerations to Highlight*
1 Economics and Evidence-based Outcomes	Increasing awareness of the disconnect between investment made in health services (in Canada and Ontario) for the quality of outcomes realized (i.e., value for money) is contributing to an increasing focus on evidence-based policy and practice. Exploring new models to "bend the demand curve" for specific patient populations requiring costly hospitalization and Emergency Department visits
2 Impact of Health System Funding Reform (HSFR)	For many hospitals, and potentially for small hospitals in the future, funding for health service providers (HSPs) has shifted to being allocated via two types: Health Based Allocation Model (HBAM) and/or Quality Based Procedures (QBPs) – both of which impact the way an organization must leverage their resources to receive optimal dollar allocation. Explore continued engagement in industry leadership roles that focus on defining practices to support organizations in responding to the HSFR requirements
3 Evolving Health Human Resources	Evolving the heath workforce and human resource strategies, including adopting new roles and workplace practices for health care providers to maximize health system capacity and address current and future health human resources, skills and expertise. Continue to develop strategies by which NHH can maintain its attractiveness / competitiveness as a prospective employer (e.g., evaluate current staffing complement and skill sets against evolving health system needs and required skills and expertise)

1 | Economics and Evidence-based Outcomes

There is an increasing awareness of the disconnect between spending on health services and the quality of outcomes (i.e., value for money). As a response, policymakers in many jurisdictions are looking to evidence-based policy and practice to drive value

Key Highlights

- 2015 OECD Health Rankings found that *Canada is among the top ten countries for health care spending but achieves modest health outcomes*
- Health Quality Ontario (HQO) is focusing on supporting clinicians and patients in *making informed choices* to ensure *high quality* of care through their *Choosing Wisely campaign*
- Health system *funding reform models* are aligning with patient-based and/or longitudinally linked *bundled payment* methods
- The MOHLTC is moving forward with programs to allocate *integrated funding across a patient's entire episode of care*; regardless of provider(s) and care setting(s). These programs are likely to grow into other clinical groupings, chronic diseases, etc.
- Continued *focus on evidence-based policies to inform clinical practice* – e.g., continued MOHLTC / LHIN focus on decreasing preventable hospitalizations, ED visits, and wait times, linking performance to accountability agreements.

Planning Considerations

- Continue to enhance organizational capabilities in understanding and adapting to evolving funding models
- Continue exploring new models to "bend the demand curve" for specific patient populations requiring costly hospitalization and Emergency Department visits (e.g., through the innovative use of technology, partnering with community-based providers, etc.)
- Consider areas which NHH may adapt to new funding models and contribute to provincial understanding of developing new funding models (e.g. HSFR)
- Continue engaging with CE-LHIN to understand and anticipate impacts of initiatives such as upcoming refurbishment of long term care home (LTCH) beds, which is expected to constrict patient flow at the point of hospital discharge

2 | Impact of the Health System Funding Reform

Health System Funding Reform (HSFR) policies are impacting the delivery of health services across the LHINs, particularly impacting hospitals within rural regions and/or with disparate populations

Key Highlights

- For many hospitals, funded is being allocated based on *Health Based Allocation Model (HBAM)* and/or *Quality Based Procedures (QBPs)* – both of which impact the way an organization must leverage their resources to receive optimal dollar allocation
- Consideration and *understanding of how to calculate value for money* is emerging through the HSFR model. It is understood that if you do not have the critical mass for specific services within an organization, then it may cost more to complete the work than what is paid via the HSFR model; however this does not indicate that the service will be removed from the organization's portfolio if the population need is evident.
- With ongoing changes to the funding model, *there is more pressure being applied to foundations to raise the capital required to address major infrastructure investments* (e.g. to address aging infrastructure challenges that are being observed across all LHINs in Ontario, such as HIS renewal initiatives)

Planning Considerations

- Recent shifts to the provincial funding model are creating an environment of change for hospitals, as they seek to adapt their processes to manage their operational and clinical needs effectively. This may impact NHH in their interactions with local, regional and provincial partners.
- Explore continued engagement in industry leadership roles that focus on defining practices to support organizations in responding to the HSFR requirements, and subsequently defining partnership dynamics
- Clearly understand the needs of the community and the incentive model for each service to effectively establish how to manage the changes from HSFR (i.e. determine value for money)
- With the increased demand for a virtual connection to the community, beyond the walls of each hospital, there is an urgency to raise capital required to fund HIS renewal activities

3 | Evolving Health Human Resources

Health and human resource strategies are evolving to adopt new roles and workplace practices to maximize health system capacity, address recruitment and retention requirements in rural environments and develop internal skills and expertise

Key Highlights

- There are *evolving workforce and human resource strategies* associated with shifting expectations and demographics (e.g., work-life balance, flexible work hours, aging workforce)
- Ongoing opportunities to implement and leverage *expanded scopes of practice for clinicians to maximize efficiency and address professional service gaps*
- Current and anticipated health system *challenges in the availability of health care professionals and expertise* (e.g., gaps or surplus of clinician or practitioner availability across regions)
- Health educators are *revisiting health professional education models and curricula* to meet the needs and gaps in health human resources (e.g., geriatric specialists)
- Advancements in technology and integration are leading to *better access to e-learning and collaboration portals for health professionals*. Many programs and seminars are available through online resources (e.g. OHA) which can be completed at the user's convenience

Planning Considerations

- Explore potential initiatives/enablers that contribute to HR best practices (e.g. develop strategies to maintain attractiveness / competitiveness as a prospective employer, specialist recruitment strategies, assessment of scope of practice to optimize current resources, etc.)
- Understand the root causes of recruitment and retention challenges (e.g. salaries based on urban/rural divide, healthy workplaces, recruitment challenges of Nurse Practitioners / Physician Assistants; ability to attract leaders with the appropriate skill mix to succeed at NHH)
- Continue to evolve health human resource plans, including local and virtual specialist care coverage. This may include implementing innovative models of care to maximize health professional scopes of practice, taking advantage of all health system roles, eliminate non-value add activities and/or maximizing technology to release time to care
- Continue to consider opportunities for partnerships with academic health science centres and other organizations to leverage established infrastructure
- Evaluate current staffing complement and skill sets against evolving system needs and required skills and expertise

Social Trends and Industry Drivers

Summary of Trends and Planning Considerations

Changes to the way that people interact have driven *social* trends to demand health system resources to adapt and deliver services to patients based on their preferred experience and consumer needs

Below is a summary of the key social trends that are influencing health service providers. The detailed pages that follow expand on the below trends and identify potential considerations for NE Cluster Hospitals to leverage as needed (e.g. for strategic planning purposes).

Key Trends	*Considerations to Highlight*
1 **Shifting Social Needs Driving Practice Change**	The growing complexity of the needs of patients is increasing the drive for new and cost effective approaches to deliver better care and patient outcomes at the population, population segment and individual patient level. Consider approaches to understanding patient populations, health system utilization patterns and their care journey
2 **Consumerism and the Patient Experience**	There has been a cultural shift towards encouraging and empowering patients to contribute / co-design health services, drive their health care experience and decision making and take increasing ownership of their health. Consider opportunities to engage patients to be more active partners in informing the future planning of the health system, and management of their health

1 | Shifting Social Needs Driving Practice Change

The growing complexity of the needs of specific groups of patients is pressuring the health system to identify new and cost effective approaches to deliver more targeted patient care

Key Highlights

- Increasing emphasis on *approaches to population health, managed care and case management*
  - Providers seeking to *better segment and define their patient populations* and their role in managing "high needs" patients
  - Increasing *focus on patient populations with health conditions that are highly modifiable through proactive interventions* and management (e.g. diabetes, chronic respiratory problems, obesity, etc.)
  - Increasing focus on the convergence of health and social services, including ensuring accessibility for Ontarians (e.g. *Accessibility for Ontarians with Disability Act (AODA)*)
- Growing attention and strategic focus on *meeting the demands of an aging population* and associated medical conditions (e.g. chronic and multiple co-morbidities, focus on end of life care/assisted dying, etc.). The CE LHIN had the highest growth rate for those aged 64 – 74 years between 2010 to 2015
- Increasing awareness and focus on *culturally sensitive* approaches to care delivery and seeking *alternative means to address unhealthy lifestyles*

Planning Considerations

- Collaborate with health system partners to develop mechanisms to proactively identify and target interventions for specific patients and populations (e.g., Health Links, services for populations at risk – such as single family homes, or increasing palliative care services to respond to local aging populations)
- Assess and consider local population demographics to determine the legislative requirements each organization needs to conduct to meet the needs of the AODA
- Continue to develop partnerships and models of collaboration with health and non-health service providers (e.g., support local populations by working with law enforcement, municipalities, social services, public health, education, community mental health and others)
- Consider approaches to better understanding patient populations and health system utilization patterns (e.g. how to leverage data to drive meaningful insights for local populations, partnerships with large academic hospitals that may offer insight into local population health needs, and/or frequent "health checks" on how local population is responding to new/revised programs delivered by the organization)

2 | Consumerism and Patient Experience

Cultural shift towards encouraging and empowering patients to contribute to/co-design health services, drive their health care experience and decision making ,and take increasing ownership of their health

Key Highlights

- There is a cultural shift *from passive patients* receiving care *to patient empowerment* both in industry and by consumers (e.g. patients/persons will be expecting to drive their own care)
- Providers are *engaging patients* on aspects of *organizational planning* and *improving the patient experience*
- Increasing *demand for health care consumer solutions* to enable consumers to take greater ownership of their own health
- Growing trend for hospitals *"hot spotting,"* (i.e., using a data-driven process for the timely identification of outlier patterns of health system use in a defined region), to identify *diagnoses and patient populations for targeted interventions*
- Growing *reception by consumers for private and non-traditional health services* to increase the role of alternate health care options
- *New players are emerging in the market* to deliver health services, including extended access to patients through digital platforms (e.g. expanding the scope of Pharmacist practice at the retail level; retail-based primary care, etc.)

Planning Considerations

- Increasing strategic importance to build a service oriented culture to align with evolving patient / family expectations
- Consider means to enable greater "self management" capability on the part of patients, families, and care givers
- Engage patients to be more active partners in informing the future planning of the health system, and management of their health
- Monitor and assess the outcome of the initiatives designed to integrate the patient and family into system planning, considering if there are additional ways to integrate patients as partners in co-designing patient-centred care models

Technological Trends and Industry Drivers

Summary of Trends and Planning Considerations

Trends in *technology* across sectors of the healthcare industry drive organizations to evolve their way of conducting business and delivering services in efforts to improve efficiencies of care delivery and enhance the patient experience

Below is a summary of the key technological trends that are influencing health service providers. The detailed pages that follow expand on the below trends and identify potential considerations for NE Cluster Hospitals to leverage as needed (e.g. for strategic planning purposes).

Key Trends	*Considerations to Highlight*
1 Infrastructure, Data and Information Management	Increasing adaptation and use of health information and technology, and investments in underlying infrastructure to support information sharing, integrated patient and address system inefficiencies and improve clinical care. Advance efforts to expand information sharing and technology beyond the walls of NHH to include patients, primary care and clinics, leveraging regional resources if/where possible
2 Digital Health and Support for Innovative Models of Care and Service Delivery	Increasing digital and disruptive approaches to access health services, information and improve the patient / consumer experience and enable new models of care. Importance of enabling and building capacity for clinicians, patients and families to use technologies effectively, carefully considering the rate of change that has occurred for technology adoption in the household versus within the hospital setting.
3 Increasing Importance of Business Intelligence and Changing Privacy Considerations	Ongoing considerations are actively discussed with regards to the importance and best practice of protecting the privacy and security of data within the healthcare system. Consider balancing tensions associated with cyber security risks with trends towards more open data and allowing patients to access clinical information, with a particular focus on leveraging data as a means to drive real-time decision making while augmenting business intelligence

1 | Infrastructure, Data and Information Management

Increasing adaptation and use of health information and technology is moving the industry towards integrated patient care that addresses system inefficiencies and improve clinical care

Key Highlights

- Ongoing adoption and *use of information technology as a means of improving care and addressing system inefficiencies* through integrated patient records and standardized treatment protocols
- *The Government of Ontario is continuing to advance its eHealth agenda* – electronic health record data is now available for 91% of Canadians
- *Provincial Health Information Access Layer (HIAL)* and regional HIAL's in progress to promote seamless information sharing
- Evolving landscape and momentum with Ontario Hospitals reviewing *transformation of their clinical information systems*
- Several healthcare *institutions investing in analytic capabilities to unlock value in their data (e.g., ICES, CCO)*
- Emerging in open government and *open data promoting increased collaboration among data owners* to increase value and insights from available data sets

Planning Considerations

- Continue to consider opportunities for strategic partnerships and initiatives to build organizational capacity and advance IM / IT capabilities, including those that will support real-time access to information and deliver business intelligence capabilities
- Advance efforts to expand information sharing and technology beyond the walls of NHH to include patients, primary care and clinics
- Consider strategic partnerships to enhance sharing of data and information to support NHH and broader Health System Planning
- Consider balancing tensions associated with cyber security risks and trends towards more open data and allowing patients to access clinical information
- With internet becoming a basic infrastructure requirement for the majority of communities, it is important to consider the rural regions that struggle with maintaining and/or offering reliable networks within all buildings and/or personal homes

2 | Digital Health Supporting Innovative Models of Care and Service Delivery

Increasing digital and disruptive approaches are changing the way patients/consumers experience the health care system, shifting models of access to health services and their personal health information

Key Highlights

Key trends in Digital Healthcare indicate:

- Networks of health care providers will share critical medical and case management information with each other, and *knowledge and content will be available on demand through personal devices*
- *Handheld devices could advance with new technologies* that enable them to conduct sophisticated lab tests or remote monitoring to facilitate earlier discharge and reduce unplanned repeat visits to ED
- Rapid *increases in the amount of digitized personal health information* will test current practices, policies and ethics of handling personal health information
- Significant interest in *developing innovative personalized tools and solutions using patient data*, either through existing or newly developed data sets
- Solutions are emerging that *enable remote and/or virtual interactions with the healthcare system*, including capabilities such as virtual visits with healthcare practitioners (e.g. AkiraMD) or telemedicine networks (e.g. Ontario Telemedicine Network)

Planning Considerations

- Consider how digital health technologies may disrupt and/or enhance current provincial and local practices and models of service delivery
- As technology is adopted for patient care, it will be important to consider new learning opportunities for staff and patients to use these technologies to more efficiently and effectively aid in care and service delivery
- How can hospitals like NHH better serve their patients through use of these data sets, offering tools / apps to patients while balancing privacy concerns
- Considering the upcoming recommendations to integrate with established regional hubs, or develop a hub, for HIS capabilities, consider the needs of the local community to establish the foci and blend of both internal technology capabilities (e.g. HIS solutions) and external (e.g. digital solutions) capacities that enable patient engagement that influence population health outcomes
- Consider the role of innovation in healthcare and how innovative models (e.g. provide apps for consumer driven healthcare) positively disrupt the environment but may also provide collateral damage as well

3 | Increasing Importance of Business Intelligence and Changing Privacy Considerations

Increasing focus on the intersection of business and technology across industries is driving demand for business intelligence (BI) capabilities to address the increasingly complex reporting and funding requirements in healthcare

Key Highlights

- *Business intelligence applications, tools and techniques are enabling operational analytics* (e.g. modelling patient flow redesign, supporting service planning, etc.)
- Leaders are continuing to encourage more sophisticated decision-making tools, understanding that there are *accessible means to incorporate business intelligence applications that support real-time decision making*
- *Increasing awareness and understanding that the case costing requirements as defined by the MOHLTC require data that is not always readily accessible within organizations* (e.g., infrastructure is often so disjointed that cannot begin to do case costing)
- There is an active directive with the MOHLTC for *open data for government*
- It is anticipated that Bill 41 should *bring more public health information into hospitals*, which is anticipated to inform further decision making if the ability to harness the data that is available

Planning Considerations

- Due to the current state of aging infrastructure and limited capital availability across many hospital organizations, NHH may not have the applications or infrastructure in place to support collecting the data required to make decisions using business intelligence tools. It should be considered that understanding how data assets may be shared and leveraged across the CE LHIN may enable expedited access to the data required.
- Consider how the open data directive from the MOHLTC will impact the accessibility and capabilities for analytics within organizations such as NHH.

Looking Forward – Industry Disruptors

Looking ahead, there are a number of potential health industry disruptors that may fundamentally alter the way the health system operates from a political, economic, social and technological perspective

The disruptors identified below are being discussed by thought leaders within healthcare and across intersecting industries. Although not yet integrated into the day to day strategic discussions of all organizations across sectors within healthcare, these emerging trends may be considered for long-term corporate strategic planning.

Industry Disruptor	*Considerations to Highlight*
End-to-end Digital Enablement	The future of digital technologies in healthcare is anticipated to involve true enablement that supports provision of the care in the home and in the community, revolutionizing current patterns of communication and service provision for the patient, caregiver and provider. **While the technology already exists, adoption and transformation of the business and clinical model has yet to happen.**
Citizen Driven Disruption	Citizens are becoming increasingly engaged and they are starting to push the boundaries of the health system that is provider driven. **As the engaged citizen becomes more present in the health system, change will happen in the way services are designed, planned for and delivered. This could be the most disruptive element in the near term.**
Personalized Medicine	Creating individualized treatment plans through genomics is already possible; however adoption and use will require a complete shift in the orientation of the health system. **The current approach to medicine embraces standardization, but with the anticipated introduction of personalized medicine, a complete reorientation of the system would be required, including a shift in payment and funding mindset, research agendas, etc.**

These industry disruptors are each in different stages of being realized and may be of importance to consider for long-term corporate strategic planning purposes

Industry Disruptor	*Considerations to Highlight*
Shift to Outcomes Driven Care	There will continue to be a shift in the health system delivery model. Reframing the value proposition within the health system to focus on outcomes rather than outputs is a significant transformation. **As the government shifts to pay for outcomes it will mean models of care changes, new introductions of therapies, changes in the team model composition, and changes in the setting of care.**
Data as a Strategic Asset	Like other forms of data, health data will be viewed as a strategic asset and form of 'currency' within and between organizations. **This may lead organizations to strategically position themselves within the sector (or to partner with those who have) in order to create the capacity and capability to capitalize on data as a strategic asset.**
Introduction of New Models of Care	Introduction of new models of care are already transforming the way that care is delivered today. This is anticipated to continue as new disruptors are introduced and implemented within the industry. **Select examples wherein new models are being explored include: Ontario's Chronic Disease and Prevention Management (Canada), Kaiser Permanente Care Management Institute's Integrated Diabetes Care Program (United States), and Aboriginal Health Promotion and Chronic Care Partnership (Australia).**

Data Driven Insights for Hospital Partners in the North East Cluster of the Central East Local Health Integration Network (CE LHIN)

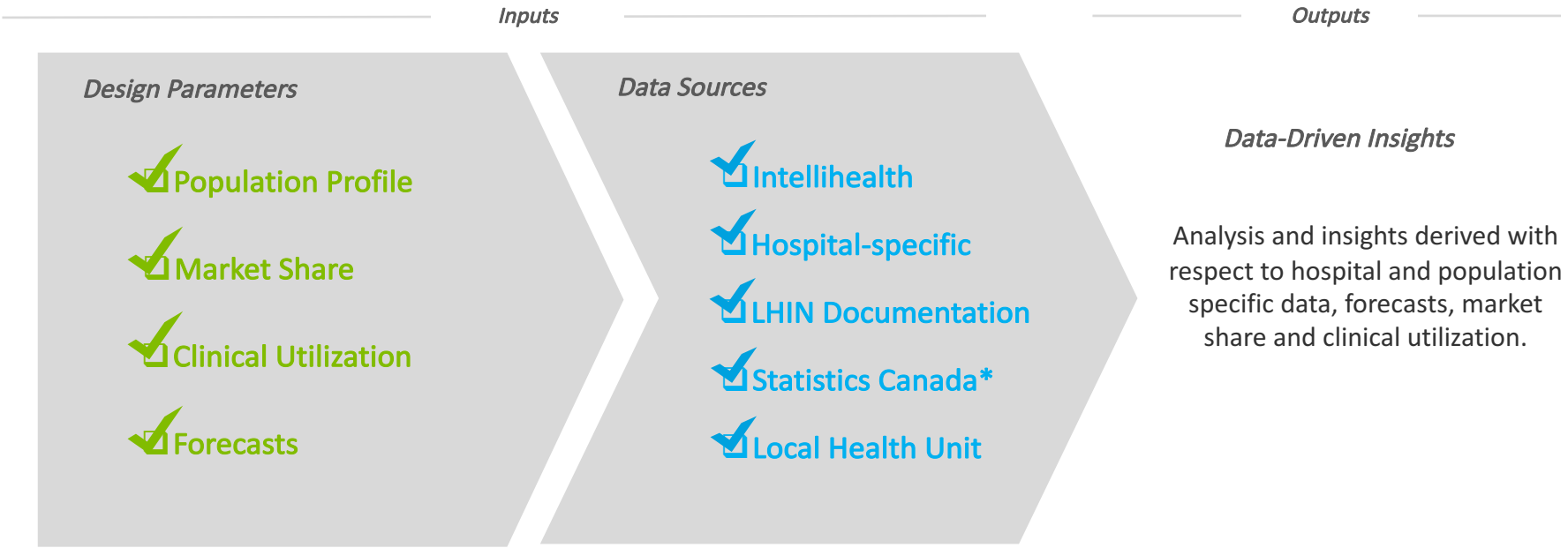
Quantitative Insights

Overview of Quantitative Analysis

Quantitative analysis of hospital and health system data provides insights into use of hospital services to provide additional context to the overall health system trends

The quantitative component of the environmental scan will leverage data from various data sources available across Ontario to address the key questions identified for this environmental scan. These key questions include, but are not limited to, market share, population segmentation/patient access, clinical utilization, etc. Appropriate indicators and data sources were defined for each identified question, and design parameters were agreed upon by the Steering Committee.

The outcome of the data-driven analysis will enable each hospital to have meaningful insights into the trends and behaviors of their localized population, as well as across the NE Cluster.



**Note: Statistics Canada data was used for the community health data analysis; noting that data from the 2011 Census was used for population health data analysis.*

Overview of Quantitative Analysis

Within each of the below sections, detailed analysis is provided specific to each clinical grouping within the organization

Each sections are similarly structured to provide an equal depth of insight per program area. The structure per section is as follows:

Population Profile and Projections

- Proportion of Population by Size and by Age
- Population Projects by Gender and by Age
- Population Attributes for the Hospital

Utilization and Market Share Trends

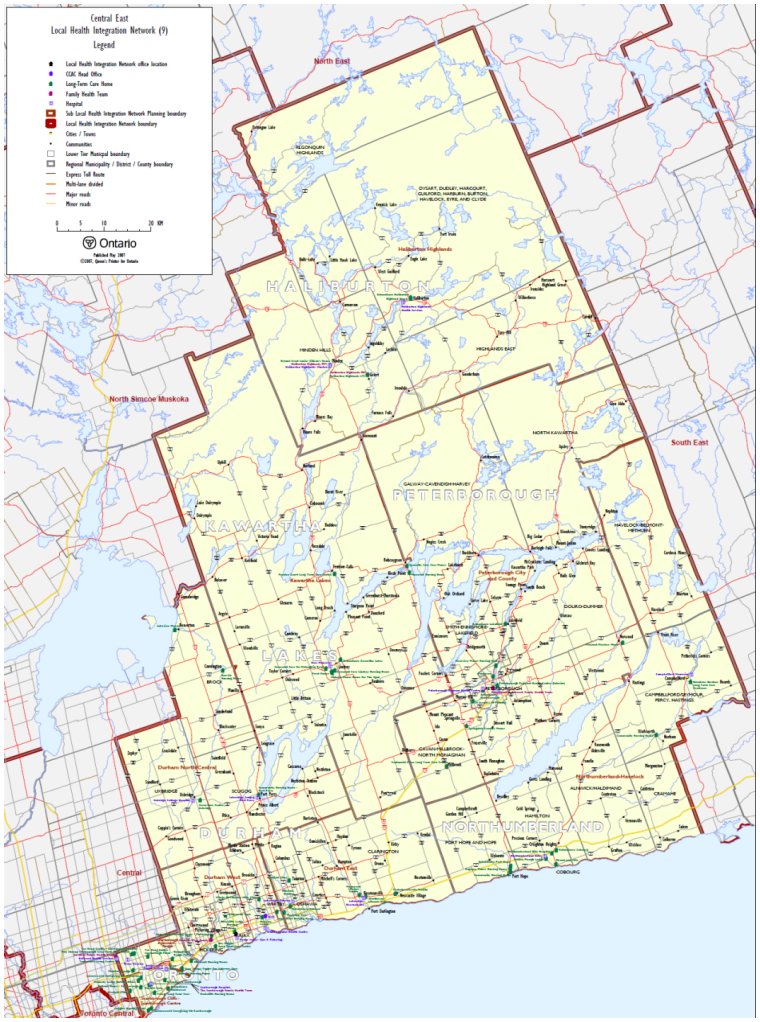
For each program, the following detailed analysis is provided:

- Clinical utilization
  - Patient volumes
  - Acute Days, ALC and RIW
  - Discharge status
  - Referral patterns
- Market share
  - Market share trends
  - Market share detailed cases
- Service utilization forecast

Population Profile and Projections

Proportion of Population by Size

Northumberland Hills Hospital (NHH) is located within Northumberland county, however does not serve the entire patient population that resides within the county lines



Northumberland county has **86,188** residents across the region, with **71%** of these residents residing within the NHH catchment area, which includes:

- Town of Cobourg
- Municipality of Port Hope
- Township of Hamilton
- Township of Alnwick/Haldimand
- Township of Cramahe
- Alderville First Nation

Key Highlights

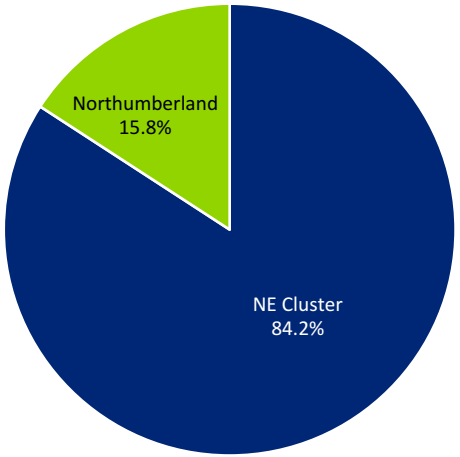
- Northumberland County has been identified as a community to provide a geographic foundation for the development of local integrated systems of care the sub-region level
- With the potential for the Northumberland county to be a sub-region within the CE LHIN, NHH will need to consider how their role within the sub-region may and how relationships and partnerships with other organizations may change. With the additional focus on increased cohesion within a potentially broader catchment, there is the possibility for an additional percentage of the county to become a part of the service provision community

Source: Intellihealth Ontario and Environmental Scan for the CE LHIN Board of Directors, September 23, 2015

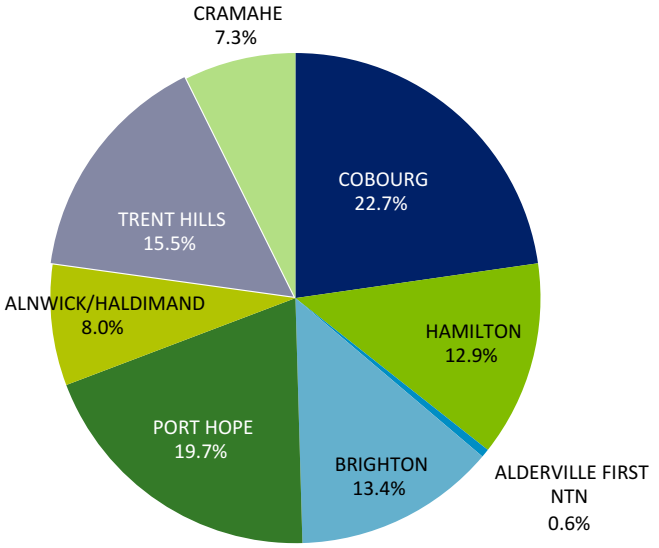
Proportion of Population by Size

NHH serves only 5% of the CE LHIN catchment area and spans 6 municipalities within Northumberland region

Population Breakdown for Northumberland and NE Cluster, 2015



Northumberland County by Municipality, 2015



Key Highlights

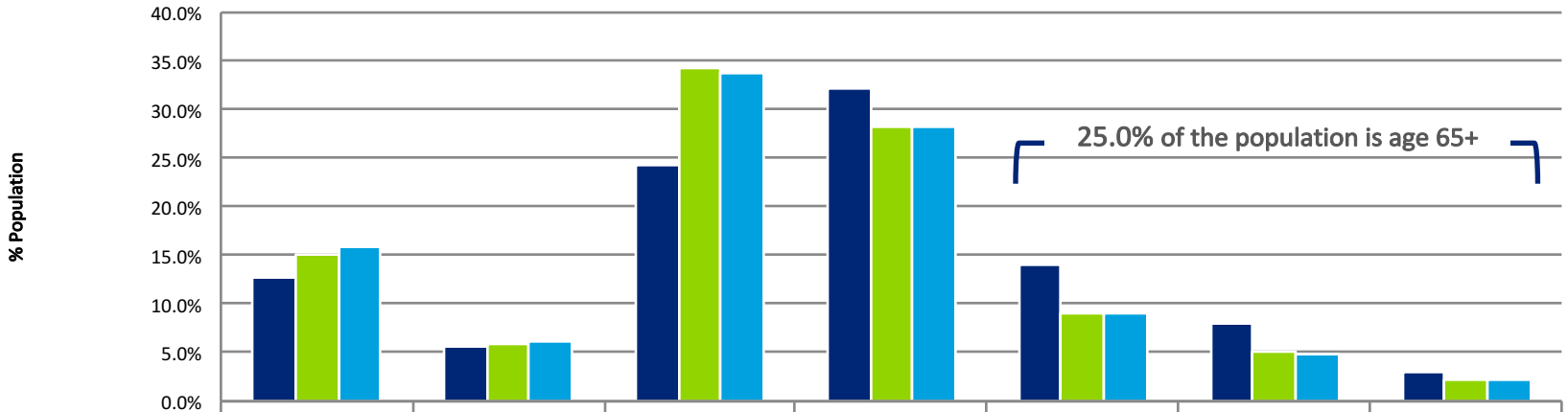
- Northumberland County comprises 5% of the population of the CE LHIN and 15.8% of the population of the NE Cluster
- The CE LHIN is the second largest LHIN in the province and contains 11% of Ontario's population. Current and future rates of growth in the LHIN are exceeding the provincial average.
- There is a relatively balanced distribution of people within Northumberland County across each of the source municipalities
- The CE LHIN's Integrated Health Services Plan (IHSP) includes a focus on engaging indigenous populations in system planning activities which may be an opportunity to enhance current efforts to engage the indigenous population within NHH's catchment area. The Alderville First Nation community is surrounded by the Township of Alnwick/Haldimand.

Source: Intellihealth Ontario and Environmental Scan for the CE LHIN Board of Directors, September 23, 2015

Proportion of Population by Age

The age-mix of the population within Northumberland County is heavily skewed to an elderly population, with a below average percentage of young people

Population Estimates by Age Cohort for Northumberland County, CE LHIN and Ontario, 2015



	0-14	15 - 19	20-44	45 - 64	65-74	75-84	85 +
NORTHUMBERLAND	12.8%	5.5%	24.4%	32.3%	14.0%	7.9%	3.0%
CELHIN	15.2%	6.0%	34.2%	28.4%	8.9%	5.0%	2.3%
ONTARIO	15.9%	6.1%	33.8%	28.1%	9.0%	4.9%	2.1%

Key Highlights

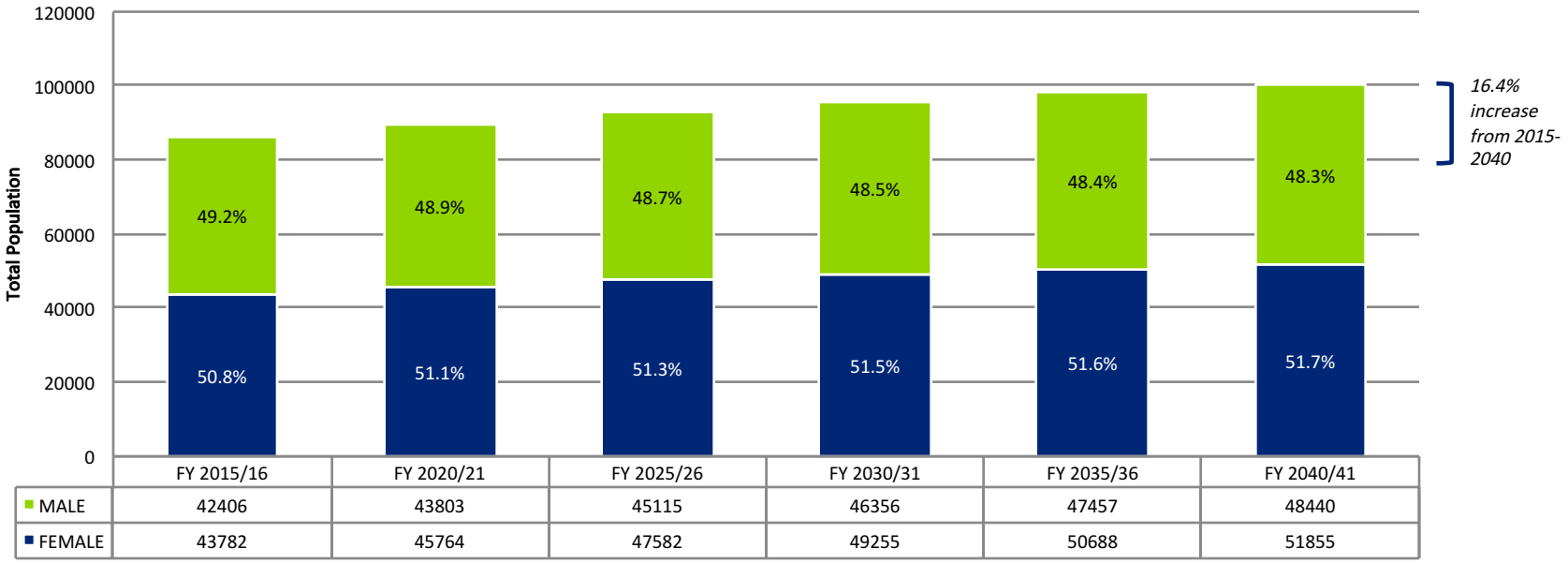
- Northumberland has slightly fewer than average residents in the mid-age category (i.e. 20-44), however has slightly higher than average population in the oldest age categories (i.e. 45+)
- Of the counties in the NE Cluster, Northumberland has the second largest proportion of their population that is aged 65 or higher. 25.0% of the population within Northumberland County is over the age 65 (23% in Trent Hills specifically), while approximately 10.9% of the population is 75+.
- A higher proportion of Northumberland residents are over age 65 compared with the CE LHIN and Ontario. 25.0% of the population of Northumberland County is over the age of 65, while the CE LHIN and Ontario have approximately 16% of their population over the age of 65 years.

- Note: For the purposes of this report, and due to limitations in the data, population projections are only available at the county level. For market share, the data has been analyzed by municipality, capturing a primary catchment area of the Town of Cobourg, Municipality of Port Hope, Township of Hamilton, Township of Alnwick/Haldimand, Township of Cramahe and Alderville First Nation.

Population Projections by Gender

The population within Northumberland County reflects relatively consistent growth, with a 16.4% total increase reflected within the population by the year 2040 (averaging 3.1% growth per year)

Population Growth Trends for Northumberland County, 2015 - 2040



	FY 2015/16	FY 2020/21	FY 2025/26	FY 2030/31	FY 2035/36	FY 2040/41
MALE	42406	43803	45115	46356	47457	48440
FEMALE	43782	45764	47582	49255	50688	51855

Key Highlights

- The population is anticipated to grow on average 3.1% per year in Northumberland County. This results in an overall moderate growth of 16.4% between 2015/16 and 2040/41. The average increase for the NE Cluster population's as a collective is 12%.
- The gender distribution is anticipated to remain relatively stable as the population grows over time.
- There is no difference in the gender split between NE Cluster, CE LHIN and Ontario (consistent distribution of between 51-52% female, 48-49% male). This remains consistent across all counties within the NE Cluster.

Population Projections by Age

The population of Northumberland County is projected to grow by 7.6% over the next 10 years, with the most rapid growth taking place for residents over age 65

Projected Population Growth by Age Group for Northumberland County, 2015 to 2025

Age Group	2015	2020	Growth Rate for 2015 to 2020	2025	Growth Rate for 2015 to 2025
0-14	11060	11157	0.9%	11451	3.5%
15-19	4778	4332	-9.3%	4213	-11.8%
20-44	21040	20899	-0.7%	20777	-1.3%
45-64	27797	27400	-1.4%	25712	-7.5%
65-74	12087	13992	15.8%	15361	27.1%
75-84	6847	8404	22.7%	10901	59.2%
85+	2579	3383	31.2%	4282	66.0%
Total	**86188**	**89567**	**3.9%**	**92697**	**7.6%**
65+	21513	25779	19.8%	30544	42.0%
75+	9426	11787	25.0%	15183	61.1%

Key Highlights

- The number of Northumberland County residents between ages 15-64 is expected to decline over the next 10 years, while the proportion of the population over age 65 will experience significant growth. This is consistent across all populations within the NE Cluster.
- The proportion of the population over age 75 is expected to grow significantly – by 61.1% - by 2025. This has numerous implications for NHH, both in terms of overall hospital volumes and development of programs or partnerships specifically tailored to elderly populations. Similar magnitudes of growth are observed for all five (5) hospital partners in the NE Cluster.
- Northumberland County's growth over the next 10 years is less than Ontario (12%) and CE LHIN (10.5%), but greater than NE Cluster (6.2%)

Source: Intellihealth Ontario

Population Attributes for NHH and HKPR

The socio-economic status and health risks factors specific to the local population served by NHH and Haliburton, Kawartha and Pine Ridge District (HKPR) contribute to the overall health status of the population, impact system utilization and can inform future planning

	Key Highlights	Planning Considerations
Socio-economic status	• CE LHIN has the 3rd highest population living in low income households (14.6%) when ranked with the 14 LHINs in Ontario, and is 1 of 5 LHINs above the provincial average of 13.9% • CE LHIN has the 3rd highest wait times among the 14 LHINs for Community Mental Health Services (housing), with the median wait time of 365 days (77 days above provincial median) • Income inequality has increased in Canada by almost 10% between 1994 to 2014 • The HKPR District reports 53% of the population aged 25-64 years have completed post-secondary education (slightly lower than provincial average of 62%)	• Low income households have a significant impact on the population health for surrounding areas. With an above average rate of low income households within the area, considerations may be applied for health service delivery (e.g. increase resources available to single parent households; deliver programs to support population health issues that often arise with low income households such as smoking cessation programs or alcohol dependency programs, etc.) • Decreasing unemployment rates may positively impact the region, however it may take time to see causational effects in population health outcomes
Health Risk Factors	• The population of residents over the age of 75 for the CE LHIN increased by 12% between 2010 to 2015 • Only 1 in 3 people are getting their flu shot in Canada as of 2014 • Individuals are less physically active (48% reported being physically *inactive*) compared to Ontario (45.6% reported being physically *inactive*) • More than half of the residents in the CE LHIN (65.2%) are not consuming enough fruits and vegetables daily, being above the provincial average (60.8%) • CE LHIN has the 2nd highest number of active mental health cases, increasing 6.8% since FY 2010 and higher than provincial average (4.9%)	• With the significantly aging population (12% since 2010), speculated to be as a result of the increase in retirees within the region, there may be need to adjust program service delivery to cater to this specialized population • Increased prevalence of physically inactive people, combined with poor nutrition, raises risks for both maintaining population health and for addressing illness within the communities, as both are contributing factors for health and well-being • High wait times for mental health, along with the high number of active mental health cases, highlight a demand for service capacity to address these health risk factors

Sources: Environmental Scan for the CE LHIN Board of Directors, September 23, 2015; inFOCUS Report: The Social Determinants of Health, 2015; National Report on Wellbeing: Canadian index of Wellbeing

Population Attributes for NHH and HKPR

The prevalence of chronic disease is associated with potential burden on the health system; physician to population ratios can be an indicator of timely access to health services

	Key Highlights	Planning Considerations
Chronic disease prevalence	• Compared to provincial benchmark (53.5%), residents in CE LHIN demonstrate a slightly lower prevalence of being overweight and obese (51.4%) • The prevalence of persons with at least one chronic condition is 40.1% within the CE LHIN, valuing just above the provincial average of 37.3% • Within Canada, the rates of diabetes has more than doubled in the past 21 years (2.6% of the population in 1994 compared to 6.7% in 2014)	• There is variation in the CE LHIN and Ontario averages when examining rates of being overweight and obese, as well as the prevalence of at least one chronic condition. The LHIN, NE Cluster, and local community continues to face challenges stemming from pockets of poverty, isolated rural communities, single parent households, and a high proportion of senior population. • Small area variations and distinct sub-populations exist within the CE LHIN among many health status indicators, which can sometimes be obscured when considering the population health needs in aggregate
Health and Human Resources	• Access to family doctors is declining across Canada (from 88.6% in 1994 to 85.1% in 2014) • More than 8 in 10 Canadians provide unpaid help to others who are on their own (81.7% in 2014) • The CE LHIN has the 2nd highest number of active home care clients in Ontario, having increased by 13.9% since FY10, yet ALC days continue to be a challenge faced by all NE Cluster hospitals • The CE LHIN 2015 environmental scan indicated that there are areas of improvement for management of Health and Human Resources across 9 of 11 critical professions	• Consideration of the increasing aging population, along with ranking as the LHIN with the 2nd highest number of active home care clients illustrates a need to remain aware of the additional services that may be required moving forward to support increased home and community care

Sources: Environmental Scan for the CE LHIN Board of Directors, September 23, 2015; inFOCUS Report: The Social Determinants of Health, 2015; National Report on Wellbeing: Canadian index of Wellbeing

Utilization and Market Share Trends

Overview of Analysis

The following sections provide a detailed analysis of the utilization and market share trends for each of the program areas defined for NHH

Each program has been assessed using the following framework:

Clinical Utilization		*Discharge Status*	*Referral Patterns*	*Market Share*	*Forecasts*
Patient Volumes	Acute / ALC Days / RIW	Where do patients go when they are discharged from hospital?	Where are NHH patients coming from?	Where do local residents receive their hospital care?	What will be the future demand for hospital services?

The analysis for each program can be found on the following pages:

Overview of Selected Programs

Clinical Utilization Summary

Inpatient Volumes

Summary of Inpatient Volumes by Program for NHH, 2013-14 to 2015-16

Program	Acute Separations			Total Days			Average Total LOS			Acute Days			% ALC Days			Average RIW		
	2013/14	2014/15	2015/16	2013/14	2014/15	2015/16	2013/14	2014/15	2015/16	2013/14	2014/15	2015/16	2013/14	2014/15	2015/16	2013/14	2014/15	2015/16
Medical*	2,428	2,668	2,654	13,432	14,600	13,250	5.2	4.9	4.6	12,701	13,176	12,257	5.4%	9.8%	7.5%	0.92	0.95	0.97
Surgical	414	421	435	2,296	2,000	2,108	5.3	4.7	4.7	2,212	1,967	2,053	3.7%	1.7%	2.6%	1.49	1.46	1.49
Mental Health	136	126	90	1,328	1,574	456	6.2	6.1	4.6	848	774	413	36.1%	50.8%	9.4%	1.70	1.97	1.19
Palliative	212	278	194	1,937	2,426	1,732	9.1	8.7	8.7	1,934	2,415	1,696	0.2%	0.5%	2.1%	1.29	1.31	1.28
Obstetrics	478	502	507	1,013	1,004	988	2.1	2.0	1.9	1,013	1,004	988	0.0%	0.0%	0.0%	0.50	0.50	0.50
Paediatric	71	69	77	132	162	117	1.9	2.1	1.5	132	144	117	0.0%	11.1%	0.0%	0.52	0.62	0.58
TOTAL**	**3,739**	**4,064**	**3,957**	**20,138**	**21,766**	**18,651**	**5.0**	**4.8**	**4.4**	**18,840**	**19,480**	**17,524**	**6.4%**	**10.5%**	**6.0%**	**1.0**	**1.0**	**1.0**
Newborns	462	490	511	903	899	905	2.0	1.8	1.8	903	899	905	0.0%	0.0%	0.0%	0.20	0.20	0.20
Rehabilitation	464	441	532	10,594	11,451	14,386	22.8	26.0	27.0	10,594	11,451	14,386	*Not Available*			*Not Available*		

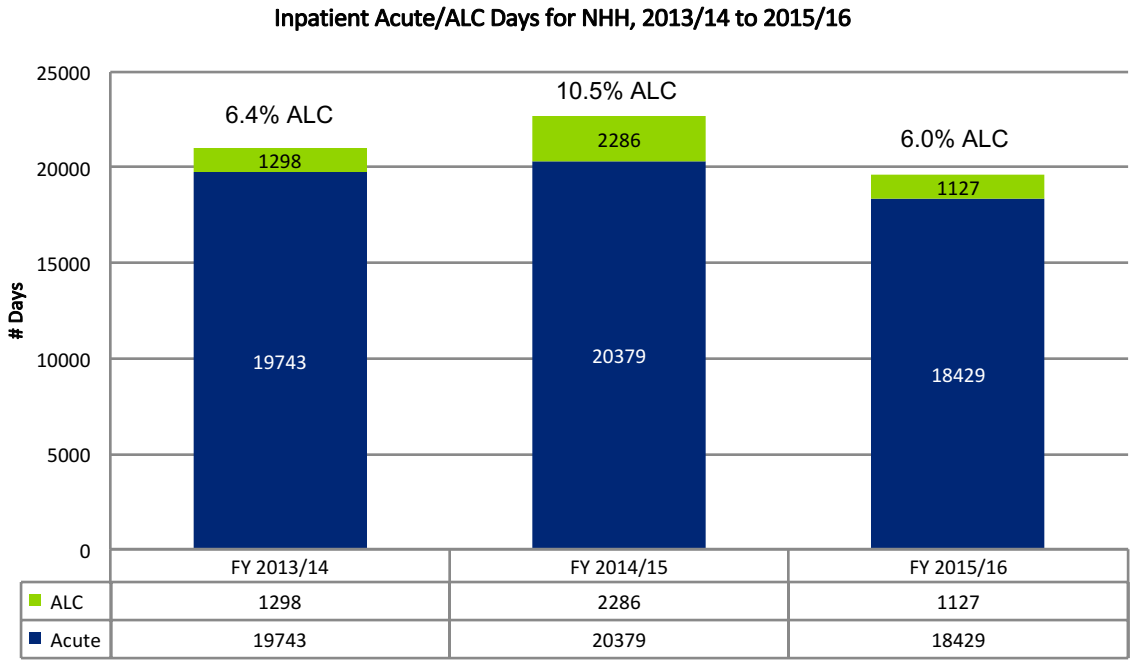
**Includes patients for Critical Care Services **Excludes Newborns*

Key Highlights

- Total separations and patient days have fluctuated over the past three years. Total inpatient days have declined by 7%, while ALOS has decreased steadily.
- RIW has remained steady at at 1.00 or slightly below over the past three years.
- Adult medical days represent the highest proportion of total days and the proportion has increased over the past three years from 64% to 69% of total inpatient days.

Clinical Utilization Summary

Acute / ALC Days



Key Highlights

- The proportion of days classified as ALC has varied over the past three years. A high proportion in 2014/15 (10.1%) may be attributable to some long stay cases in adult mental health and paediatrics in that year.
- There were 1,127 total ALC days in 2015/16, which represents the equivalent of approximately 3 acute care beds (assuming 95% occupancy).

Referral Patterns Summary

Case by Residence

Patient Volumes by Residence for Inpatient Services at NHH, 2015-16

Patient Municipality	Medical	Mental Health	Newborns	Obstetrics	Paediatric	Palliative	Surgical	Total
COBOURG	47.9%	53.3%	25.8%	26.6%	29.9%	49.0%	38.4%	**41.9%**
PORT HOPE	24.5%	17.8%	13.9%	14.2%	16.9%	27.8%	25.7%	**22.1%**
CRAMAHE	7.9%	3.3%	6.3%	5.9%	13.0%	6.2%	6.4%	**7.3%**
HAMILTON	5.8%	4.4%	6.8%	6.7%	9.1%	6.2%	6.2%	**6.1%**
CLARINGTON	0.7%	1.1%	24.5%	24.3%	0.0%	0.0%	1.1%	**6.1%**
ALNWICK/HALDIMAND	5.7%	8.9%	3.7%	3.4%	6.5%	4.1%	8.5%	**5.5%**
BRIGHTON	1.5%	0.0%	2.9%	3.0%	2.6%	4.1%	3.7%	**2.1%**
TRENT HILLS	1.3%	1.1%	4.1%	4.3%	2.6%	0.0%	1.8%	**2.0%**
OSHAWA	0.5%	0.0%	2.7%	2.8%	0.0%	0.0%	0.7%	**1.0%**
WHITBY	0.1%	0.0%	3.7%	3.4%	0.0%	0.0%	0.2%	**0.9%**
OTHER	4.1%	10.0%	5.5%	5.5%	19.5%	2.6%	7.1%	**5.1%**

Key Highlights

- 41.9% of NHH inpatient volumes come from Cobourg. Port Hope represents the second largest source of patients, at 22.1%.
- Only one quarter of obstetrics and newborn cases are from Cobourg, with another quarter coming from Clarington, which is located in Durham Region. This may be due to physician referral patterns or access to a particular physician.

Market Share Summary

3-Year Trend for Inpatient Cases

	2013/14			2014/15			2015/16			
Geography	Total Cases	For NHH	% for NHH	Total Cases	For NHH	% for NHH	Total Cases	For NHH	% for NHH	Absolute Change*
COBOURG	8,609	5,758	67%	2,965	2,025	68%	3,085	2,016	65%	-2%
PORT HOPE	5,080	2,972	59%	2,161	1,111	51%	1,912	1,098	57%	-2%
HAMILTON	1,815	844	47%	650	309	48%	652	295	45%	-2%
CRAMAHE	1,785	964	54%	602	313	52%	632	346	55%	1%
ALNWICK/HALDIMAND	1,364	747	55%	453	247	55%	507	266	52%	-3%
TOTAL	6,007	3,653	61%	6,831	4,005	59%	6,268	3,703	59%	-2%

**Change from 2013/14 to 2015/16*

Key Highlights

- Overall market share for NHH Inpatient Programs has declined slightly since 2013/14
- Approximately 60% of residents who live within the catchment area of NHH receive their inpatient care at NHH. Based on past environmental scans completed by the hospital, this rate has remained steady since 2010/11
- NHH captures the highest market share among residents of Cobourg and the least share among residents of Hamilton Township
- An increasing proportion of Township of Alnwick/Haldimand residents receive their care at NHH. There has been a slight decrease in the proportion of Hamilton Township residents seeking care at NHH

Source: Intellihealth Ontario

Market Share Summary

3-Year Trend for Outpatient Cases

	2013/14			2014/15			2015/16			
Geography	Total Cases	For NHH	% for NHH	Total Cases	For NHH	% for NHH	Total Cases	For NHH	% for NHH	Absolute Change*
COBOURG	8,809	5,437	62%	8,894	5,451	61%	8,873	5,052	57%	-5%
PORT HOPE	5,359	2,970	55%	5,227	2,787	53%	5,926	2,980	50%	-5%
CRAMAHE	1,101	509	46%	1,264	577	46%	1,702	688	40%	6%
HAMILTON	1,789	748	42%	1,930	898	47%	2,450	962	39%	-3%
ALNWICK/HALDIMAND	2,107	963	46%	1,883	849	45%	1,358	699	51%	-5%
TOTAL	19,165	10,627	55%	19,198	10,562	55%	20,309	10,381	51%	-4%

**Change from 2013/14 to 2015/16*

Key Highlights

- Overall market share for NHH Ambulatory programs has decreased slightly (by 4%) since 2013/14
- Approximately half (51%) of residents who live within the catchment area of NHH receive their ambulatory care at NHH. Based on past environmental scans completed by the hospital, this rate has remained steady since 2010/11
- NHH captures the highest market share among residents of Cobourg and the least share among residents of Alnwick / Haldimand
- An increasing proportion of Cramahe residents receive their care at NHH, with a slight increase in the market share observed between 2013/14 and 2015/16

Market Share Summary

3-Year Trend for Emergency Department Cases

	2013/14			2014/15			2015/16			
Geography	Total Cases	For NHH	% for NHH	Total Cases	For NHH	% for NHH	Total Cases	For NHH	% for NHH	Absolute Change*
COBOURG	15,155	13,939	92%	15,837	14,536	92%	16,431	15,051	92%	**0%**
PORT HOPE	7,416	6,204	84%	7,997	6,647	83%	8,255	6,888	83%	**-1%**
CRAMAHE	2,491	1,995	80%	2,598	2,088	80%	3,669	2,570	70%	**-10%**
HAMILTON	3,405	2,297	67%	3,581	2,510	70%	3,355	2,344	70%	**3%**
ALNWICK/HALDIMAND	3,074	2,289	74%	3,575	2,573	72%	2,941	2,331	79%	**5%**
TOTAL	31,541	26,724	85%	33,588	28,354	84%	34,651	29,184	84%	**-1%**

**Change from 2013/14 to 2015/16*

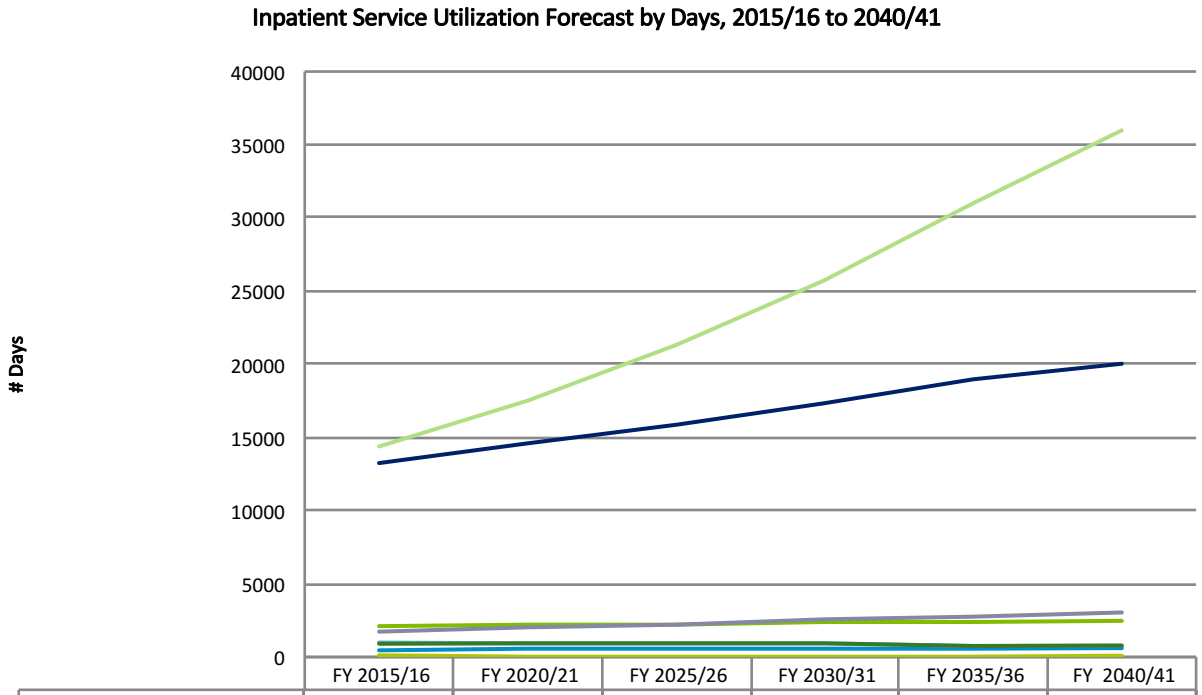
Key Highlights

- Overall market share for NHH Emergency Department Services has declined slightly (by 1%) since 2013/14
- 84% of residents who live within the catchment area of NHH receive their emergency department care at NHH. Based on past environmental scans completed by the hospital, this rate has remained steady since 2010/11
- NHH captures the highest market share among residents of Cobourg and the least share among residents of Hamilton Township and Alnwick/Haldimand

Source: Intellihealth Ontario

Future Projections Summary

Inpatient Service Utilization



	FY 2015/16	FY 2020/21	FY 2025/26	FY 2030/31	FY 2035/36	FY 2040/41
Medical	13250	14543	15959	17416	18908	20038
Surgical	2108	2201	2293	2376	2438	2472
Mental Health (Medical)	456	479	510	538	575	607
Obstetrics	988	933	893	854	820	786
Newborns	905	879	869	861	825	778
Paediatric	117	112	108	103	97	90
Palliative	1732	1974	2252	2537	2823	3044
Rehab	14386	17530	21310	25721	31058	35982

Key Highlights

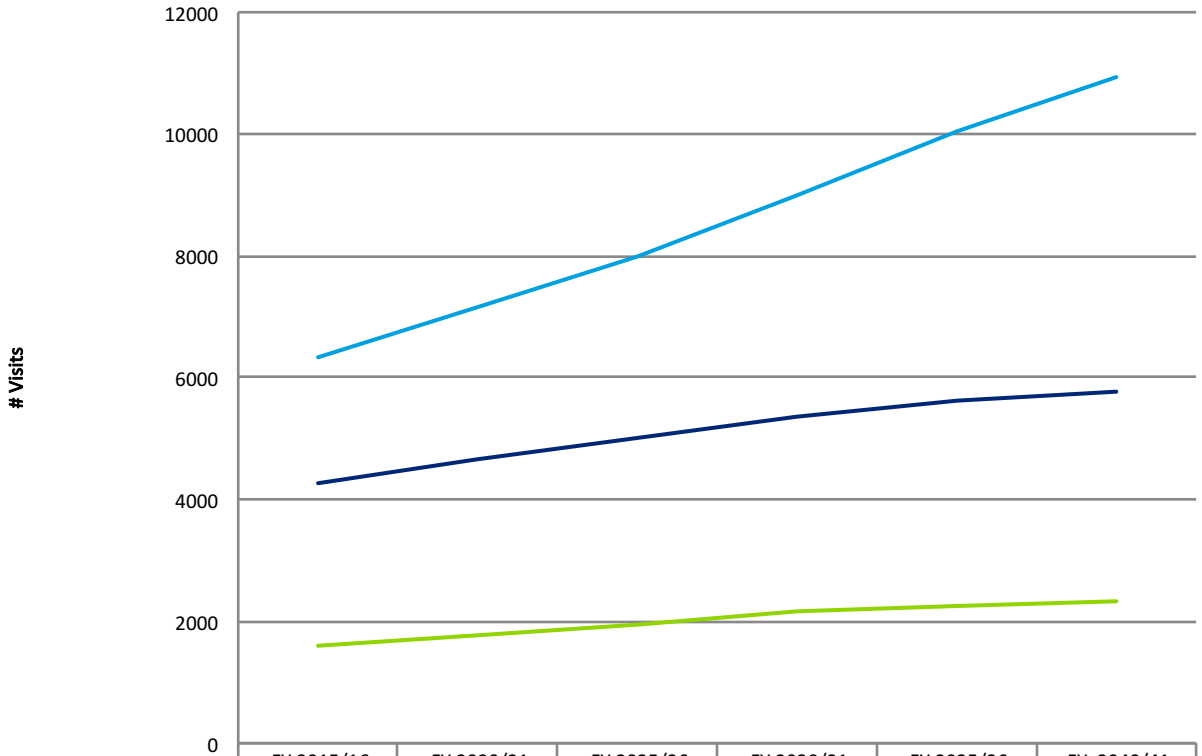
- Based on current patterns of utilization, the total inpatient days are expected to increase by 88.0% between 2015/16 and 2040/41
- Over the same period, inpatient rehabilitation services are expected to have the most significant increase in volumes, with an expected growth of 150.1% (equal to an additional 21,596 days by 2040/41)
- Palliative care volumes are expected to grow by 75.8%
- Obstetrics and paediatrics volumes are expected to decline by 20.4% and 22.8% respectively

Source: Intellihealth Ontario

Future Projections Summary

Outpatient Service Utilization

Ambulatory/Outpatient Service Utilization Forecast by Discharges, 2015/16 to 2040/41



	FY 2015/16	FY 2020/21	FY 2025/26	FY 2030/31	FY 2035/36	FY 2040/41
Medical/Surgical	4268	4645	5012	5382	5608	5771
Oncology	1600	1781	1965	2153	2258	2330
Renal Dialysis	6335	7162	8008	8978	10023	10935

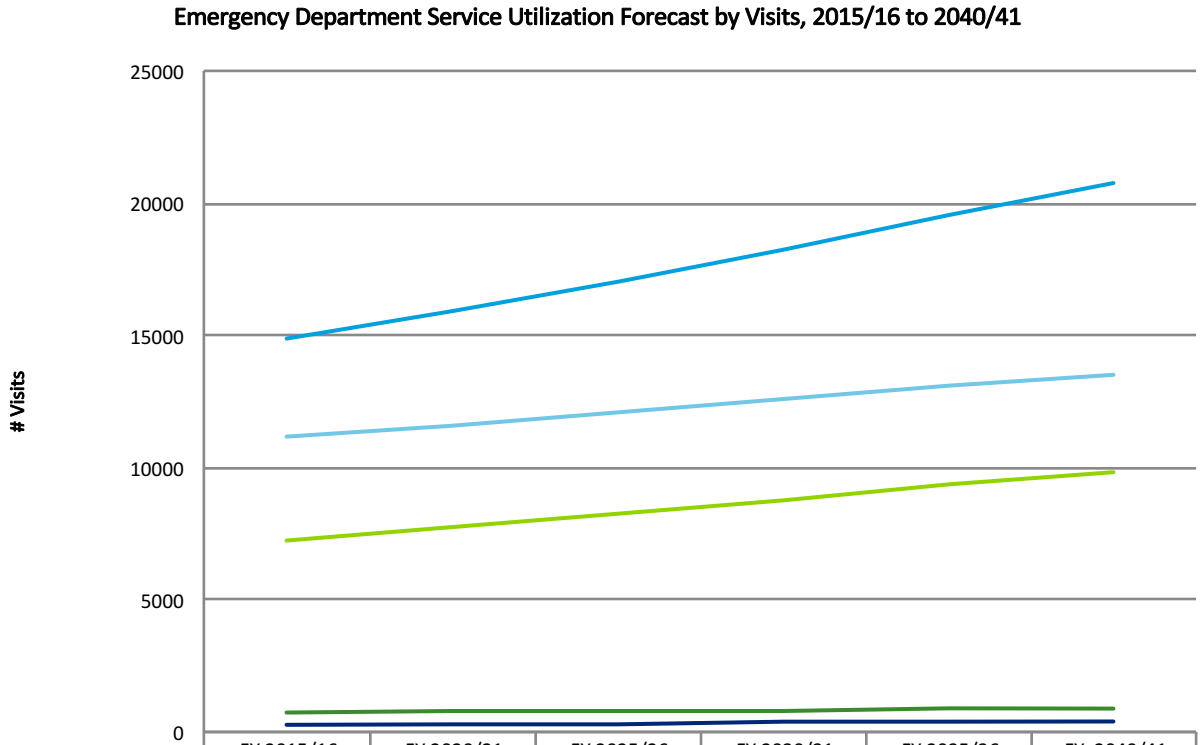
Key Highlights

- Ambulatory care volumes are expected to increase by 56.0% on average 2040/41
  - Ambulatory medical/surgical volumes are expected to increase by 35.2%
  - Oncology visits are anticipated to increase by 45.6%
  - Renal dialysis visits are expected to increase by 72.6%

Source: Intellihealth Ontario

Future Projections Summary

Emergency Department Service Utilization



	FY 2015/16	FY 2020/21	FY 2025/26	FY 2030/31	FY 2035/36	FY 2040/41
CTAS Level 1	270	292	317	343	370	396
CTAS Level 2	7239	7723	8245	8783	9327	9824
CTAS Level 3	14876	15882	17039	18256	19560	20759
CTAS Level 4	11168	11620	12110	12594	13075	13506
CTAS Level 5	734	764	794	825	857	884

Key Highlights

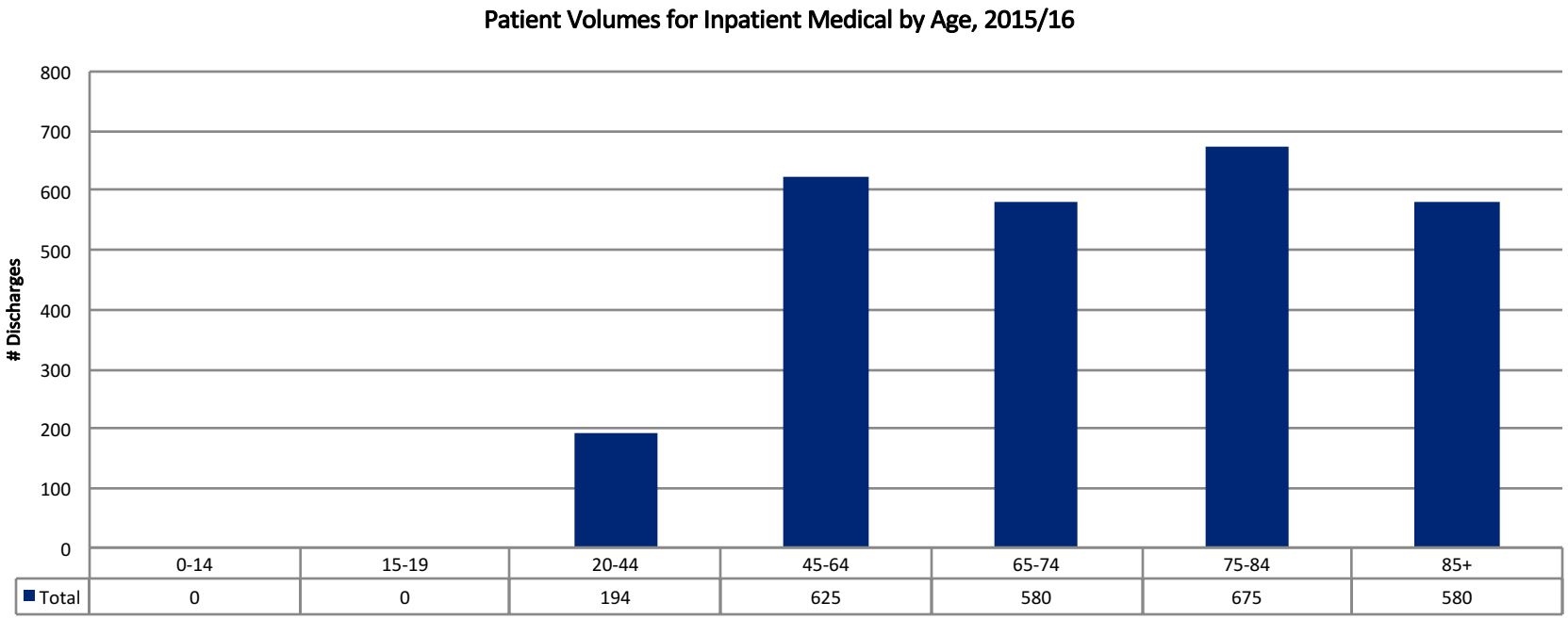
- Emergency department visits are expected to increase significantly from 34,287 visits in 2015/15 to 45,370 visits by 2040/41.
- As measured by acuity, the highest volume cases are the CTAS 3 cases, which are expected to grow by 39.5% (5,883 visits) by 2040/41. This is higher than the average expected growth 32.3%.
- Combined, the highest acuity cases (CTAS 1-3) are expected to grow by 40.7%, which will place considerable pressure on ED resources as volumes increase.

Source: Intellihealth Ontario

Inpatient Medical

Clinical Utilization

Patient Volumes for Inpatient Medical



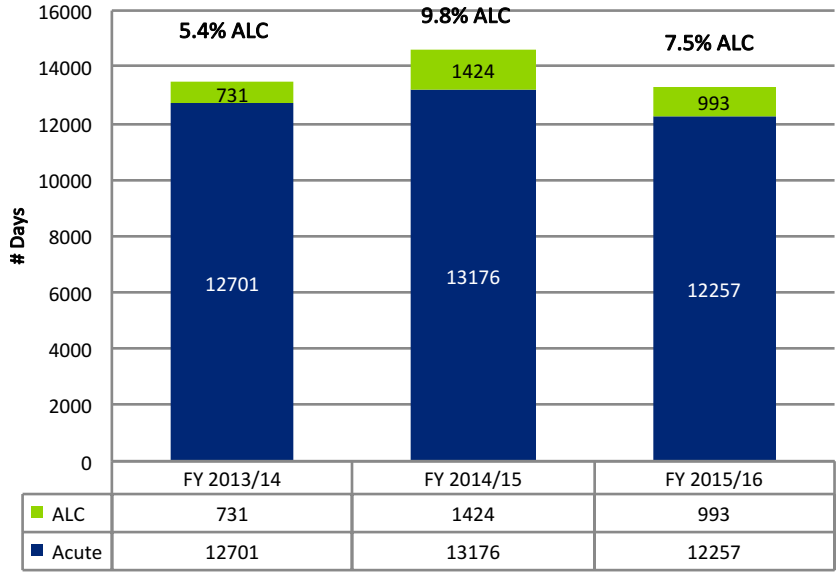
Key Highlights

- There were 2,654 discharges from inpatient medical beds in 2015/16
- 69.1% of discharges were patients age 65+

Clinical Utilization

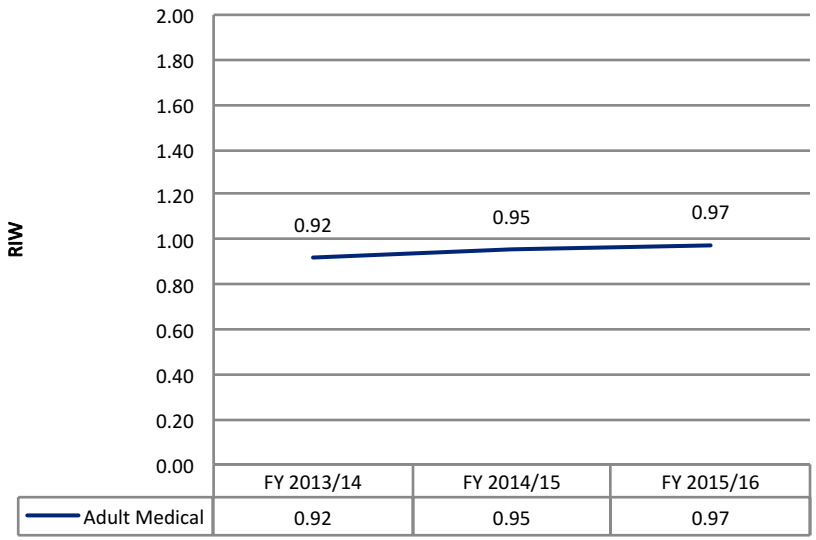
Acute / ALC Days / RIW for Inpatient Medical

Acute/ALC Inpatient Medical Days, 2013/14 to 2015/16



	FY 2013/14	FY 2014/15	FY 2015/16
ALC	731	1424	993
Acute	12701	13176	12257

Average Weighted Case for Inpatient Medical, 2013/14 to 2015/16



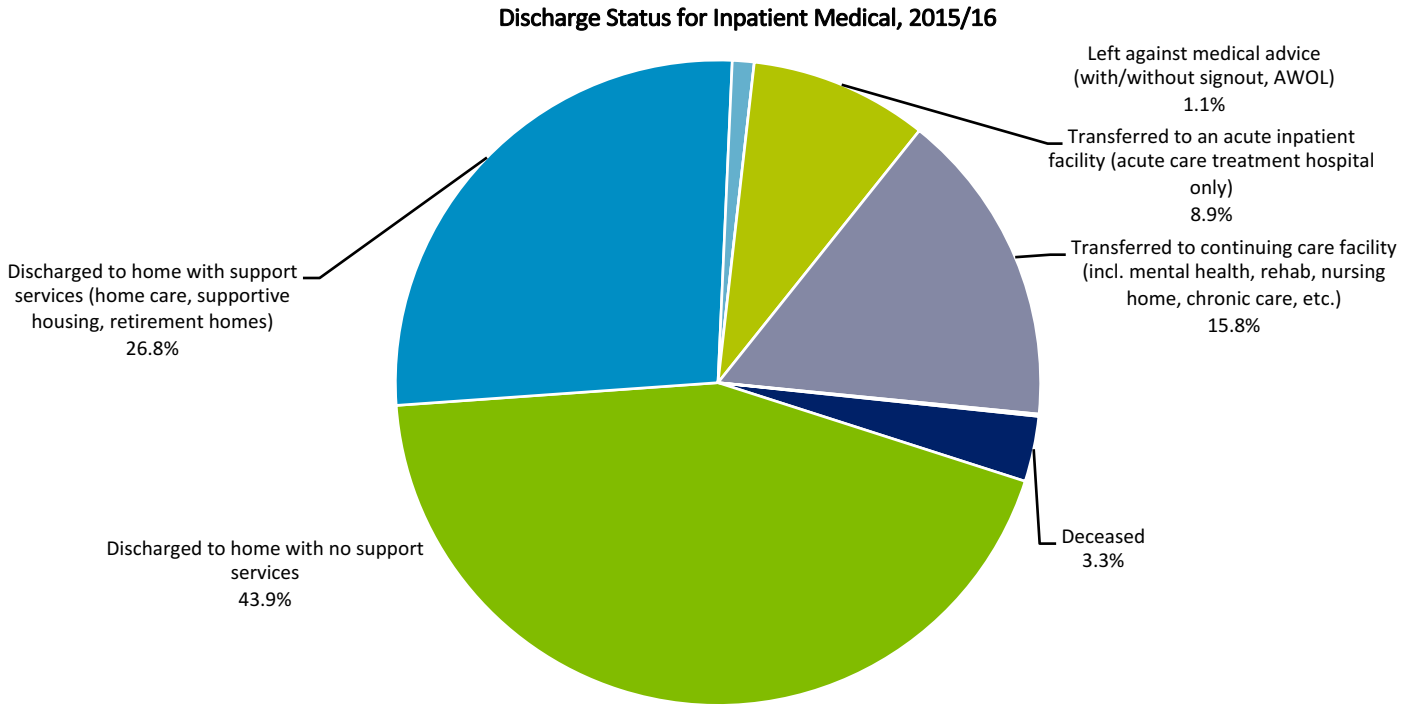
	FY 2013/14	FY 2014/15	FY 2015/16
Adult Medical	0.92	0.95	0.97

Key Highlights

- The proportion of ALC days among medical patients has varied over the past three years, from 5.4% in 2013/14 to 9.8% in 2014/15 to 7.5% in 2015/16
- The total number of ALC days in 2014/15 increased to 1,424 days. The 993 ALC days provided in 2015/16 represents the equivalent of 2.6 inpatient beds (assuming 95% occupancy).
- Average RIW among inpatient medical patients has been increasing steadily since 2013/14, moving from 0.92 to 0.97 in 2015/16

Discharge Status

Distribution among Inpatient Medical patients



Key Highlights

- Most medical patients are discharged home from hospital with no support services
- Approximately one quarter (26.8%) of patients are discharged home with support services such as home care, or to a retirement home or supportive housing

Referral Patterns

Case by Residence for Inpatient Medical

Patient Volumes by Residence for Inpatient Medical, 2015/16

Patient Municipality	# Discharges	% Total Cases
COBOURG	1271	47.9%
PORT HOPE	650	24.5%
CRAMAHE	210	7.9%
HAMILTON	154	5.8%
ALNWICK/HALDIMAND	152	5.7%
BRIGHTON	39	1.5%
TRENT HILLS	35	1.3%
CLARINGTON	18	0.7%
TORONTO	18	0.7%
OTHER	107	4.0%

Key Highlights

- Nearly three quarters of inpatient medical cases at NHH are from residents of Cobourg and Port Hope.

Source: Intellihealth Ontario

Market Share

3-Year Trend for Inpatient Medical

Market Share Trend for Inpatient Medical Services, 2013/14 to 2015/16

	2013/14			2014/15			2015/16			Delta*
Geography	Total Cases	At NHH	% for NHH	Total Cases	At NHH	% for NHH	Total Cases	At NHH	% for NHH	Absolute Change
Cobourg	1,419	1,228	86.5%	1,507	1,309	86.9%	1,474	1,272	86.3%	**-0.2%**
Port Hope	772	605	78.4%	780	650	83.3%	799	651	81.5%	**3.1%**
Alnwick/Haldimand	180	133	73.9%	200	153	76.5%	192	153	79.7%	**5.8%**
Hamilton	196	132	67.3%	250	172	68.8%	242	154	63.6%	**-3.7%**
Cramahe	268	171	63.8%	249	179	71.9%	280	210	75.0%	**11.2%**
TOTAL	2,835	2,269	80.0%	2.986	2,463	82.5%	2,987	2,440	81.7%	**1.7%**

**Change from 2013/14 to 2015/16*

Key Highlights

- Market share for inpatient medicine patients has increased by 1.7% since 2013/14
- NHH captures the highest inpatient medicine market share among residents of Cobourg, with 86.3% of the local population receiving their inpatient medical care at NHH in 2015/16
- NHH market share for the communities surrounding Cobourg is high, but not as strong; for example, 25% of Cramahe residents who required hospitalization received their care elsewhere.

Market Share

Detailed Cases for Inpatient Medical

Market Share for Inpatient Medical Services, 2015/16

	Summary for NHH			Other NE Cluster Hospitals					Other Regions				
Patient Municipality	Total Discharges	NHH	%Share - NHH	RMH	PRHC	HHHS	CMH	CELHIN-Other	Toronto-Other	Toronto-Teaching	Kingston	Ottawa	Other
Cobourg	1,474	1,272	86.3%	2	67	-	1	30	5	52	27	3	14
Port Hope	799	651	81.5%	-	48	-	1	44	2	34	11	-	8
Alnwick/Haldimand	192	153	79.7%	-	13	-	5	7	-	8	2	-	4
Cramahe	280	210	75.0%	-	25	-	8	5	-	4	6	-	22
Hamilton	242	154	63.6%	-	29	-	-	18	2	19	6	1	13
Trent Hills	485	39	8.0%	-	10	-	12	7	1	10	81	3	322
Brighton	241	17	7.1%	1	207	-	1	2	-	4	8	-	1
Otonabee-S Monaghan	241	17	7.1%	1	207	-	1	2	-	4	8	-	1
Trent Hills	688	35	5.1%	2	142	-	440	10	-	10	25	4	20
Cavan Monaghan	215	4	1.9%	2	184	-	-	12	-	10	2	-	1
Quinte West	1,129	11	1.0%	1	10	-	7	8	5	14	140	9	924
Havelock-Belmont-Meth	243	2	0.8%	-	91	-	124	6	-	9	7	2	2
Clarington	2,562	18	0.7%	6	24	1	-	2,285	22	165	7	1	30
Stirling-Rawdon	204	1	0.5%	-	11	-	42	1	-	3	33	-	113
Other	23,252	34	0%	2,723	5,324	16	16	10,367*	166	1,204	397	20	2,885

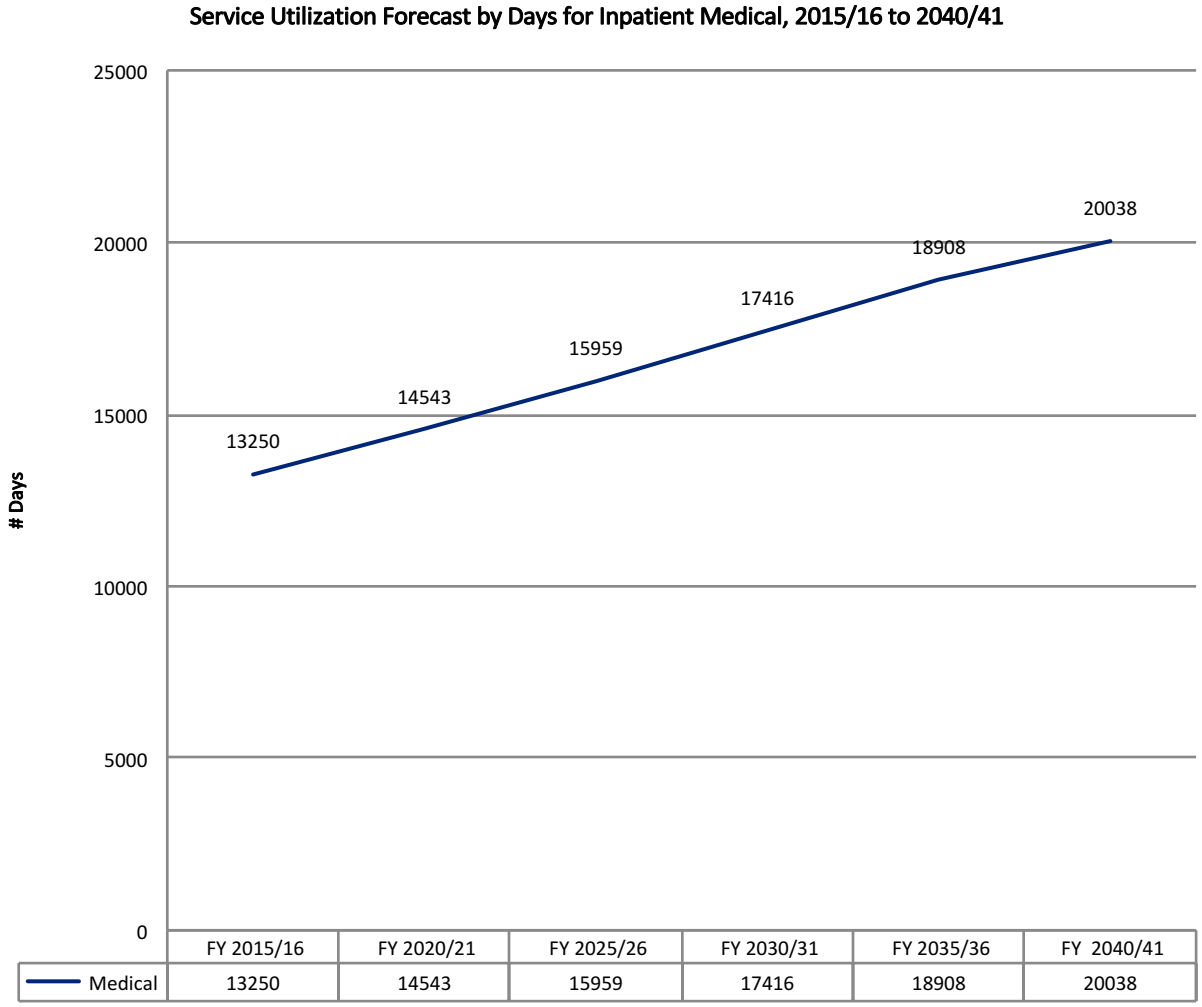
Key Highlights

- For patients not receiving their care at NHH in 2015/16, PRRH is the next most frequently visited hospital.
- Local residents attended other hospitals in the CH LHIN, as well as Toronto teaching hospitals in some cases.

**A large portion of the "CE LHIN Other" is as a result of cases from Whitby, Pickering and Oshawa*

Future Projections

Service Utilization Forecast for Inpatient Medical



Key Highlights

- Total patient days for inpatient medical patients are expected to increase by 51.2% between 2015/16 and 2040/41
- This increase represents 39.0% of the total increase in patient days that NHH is expected to experience over that period
- With this increase, assuming 95% occupancy, there is anticipated to be a requirement for 58 beds by 2040/41 (this is an increase from 38 beds in 2015/16).

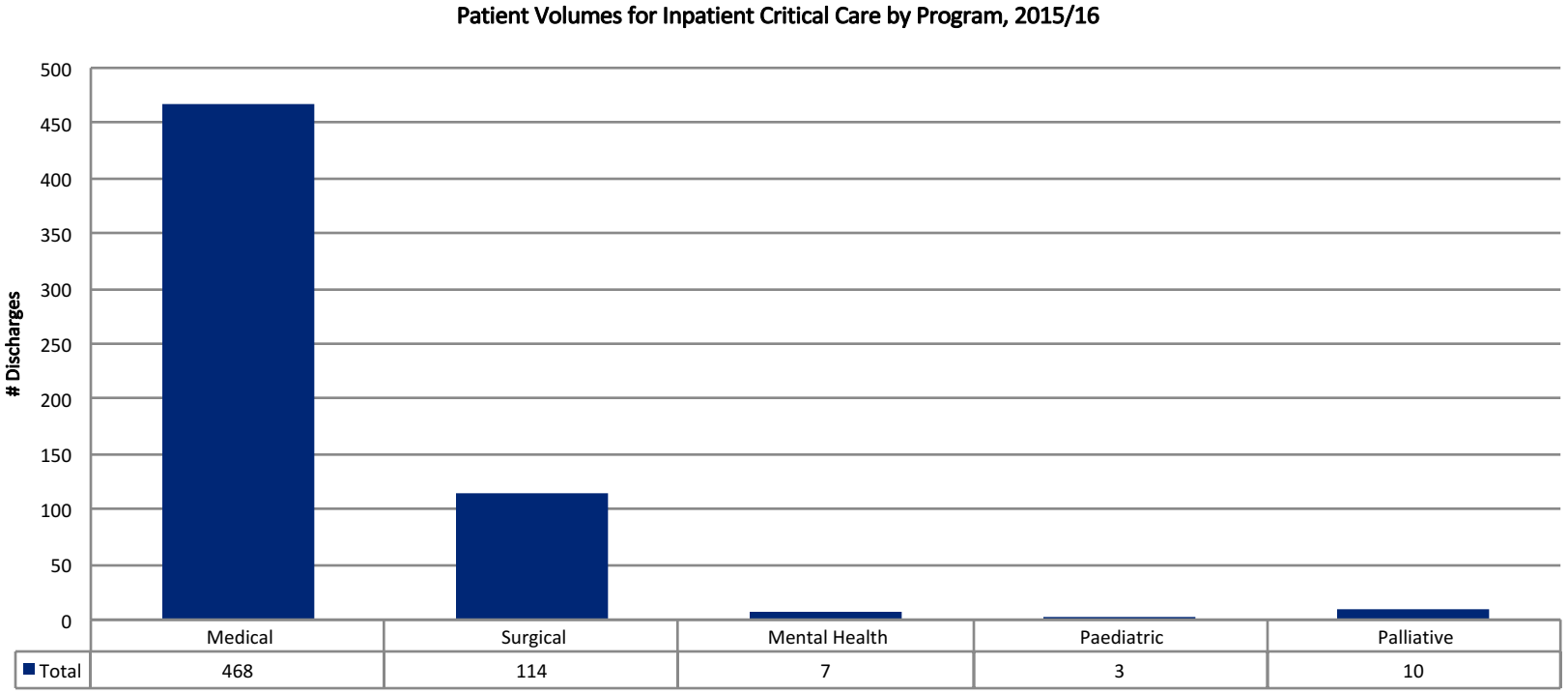
Source: Intellihealth Ontario

Inpatient Critical Care

These patients have received inpatient medical care at the organization and are designated as "critical care" for reporting purposes. Each of the calculations embedded in the below analysis assume that these patients were inpatient cases that spent time in a critical care bed at some point during their stay.

Clinical Utilization

Patient Volumes for Inpatient Critical Care



Key Highlights

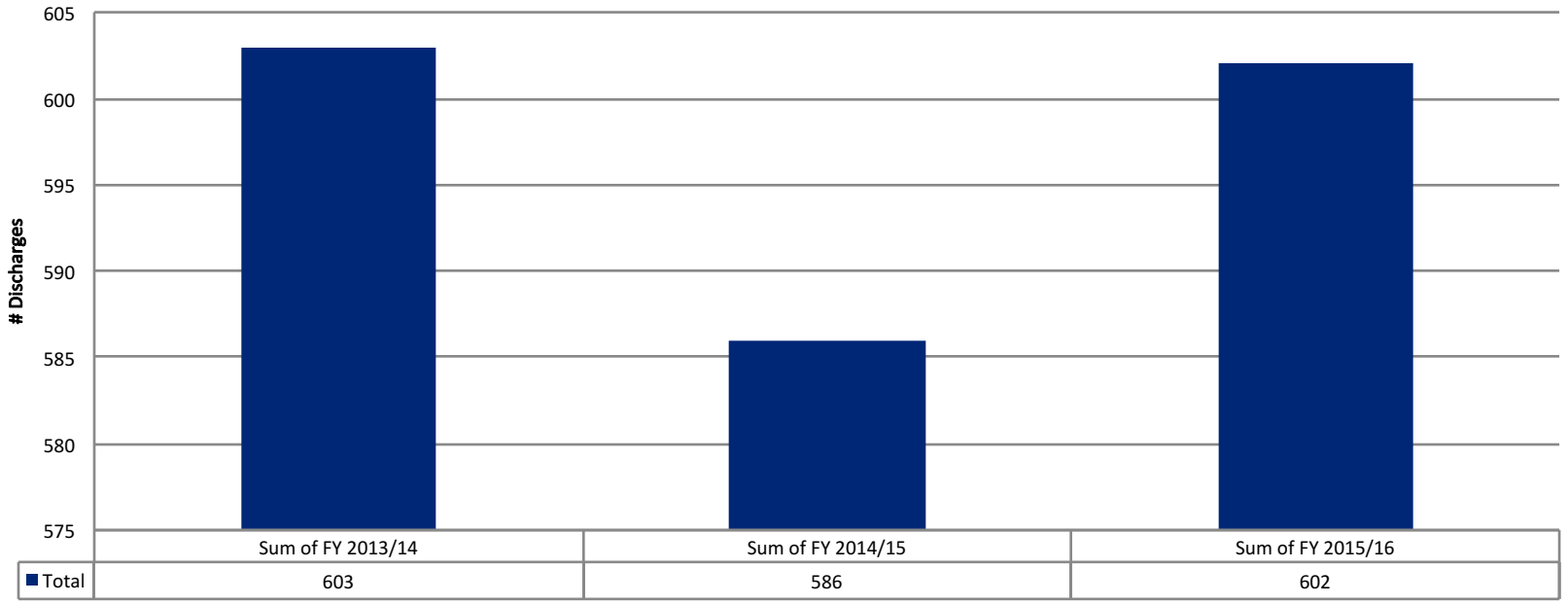
- There were 602 discharges for patients identified as receiving critical care services in 2015/16 at NHH, which represents 13.5% of total discharges.
- 17.6% of medical admissions spent at least a portion of their stay in the critical care unit, compared with 26.2% of surgical admissions.
- Medical and surgical admissions represented 78.9% of critical care admissions in 2015/16
- 60.6% of discharges were patients age 65+

Source: Intellihealth Ontario

Clinical Utilization

Patient Volumes for Inpatient Critical Care

Three-Year Trend of Patient Volumes for Critical Care Services, 2013/14 to 2015/16



Key Highlights

- There was a 0.2% decrease in the number of critical care discharges at NHH in 2015/16 when compared to 2013/14 (equal to 1 patient discharges)

Source: Intellihealth Ontario

Referral Patterns

Cases by Residence for Inpatient Critical Care

Patient Volumes by Residence for Inpatient Critical Care, 2015/16

Patient Municipality	# Discharges	% Total Cases
COBOURG	211	45.1%
PORT HOPE	123	26.3%
CRAMAHE	35	7.5%
ALNWICK/HALDIMAND	28	6.0%
HAMILTON	30	6.4%
BRIGHTON	5	1.1%
OTHER	36	7.7%

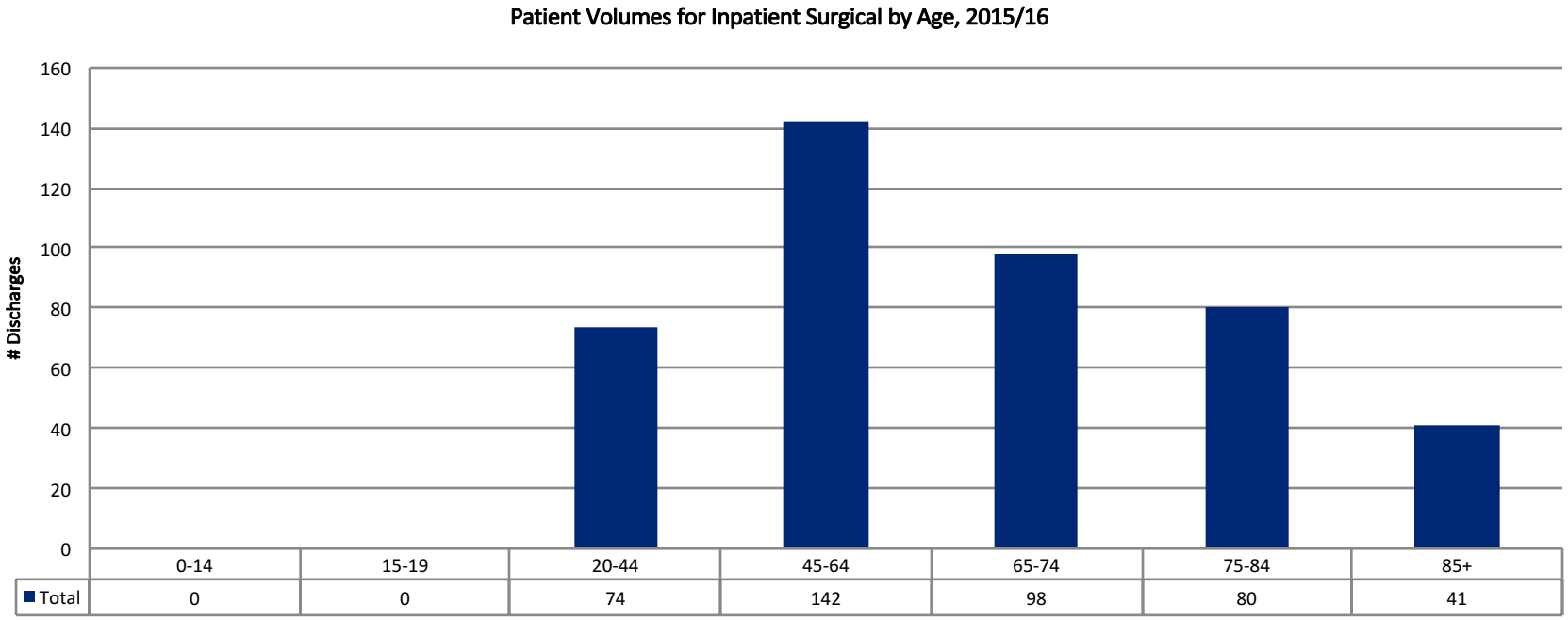
Key Highlights

- 45.1% of patients at NHH who are receiving critical care services are residents of Cobourg and 26.3% are residents of Port Hope

Inpatient Surgical

Clinical Utilization

Patient Volumes for Inpatient Surgical



	0-14	15-19	20-44	45-64	65-74	75-84	85+
Total	0	0	74	142	98	80	41

Key Highlights

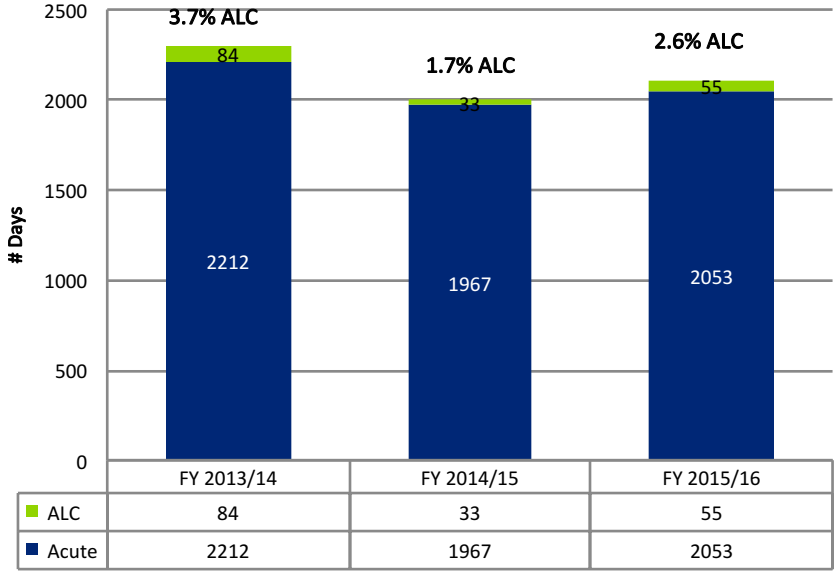
- There were 435 discharges from inpatient surgical beds in 2015/16
- 50.3% of discharges were patients age 65+

Source: Intellihealth Ontario

Clinical Utilization

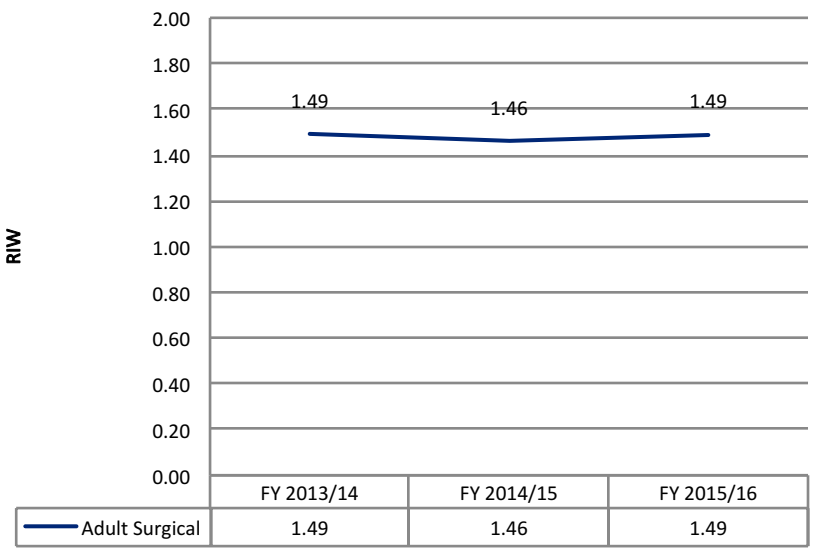
Acute / ALC Days / RIW for Inpatient Surgical

Acute/ALC Inpatient Surgical Days, 2013/14 to 2015/16



	FY 2013/14	FY 2014/15	FY 2015/16
ALC	84	33	55
Acute	2212	1967	2053

Average Weighted Case for Inpatient Surgical, 2013/14 to 2015/16



	FY 2013/14	FY 2014/15	FY 2015/16
Adult Surgical	1.49	1.46	1.49

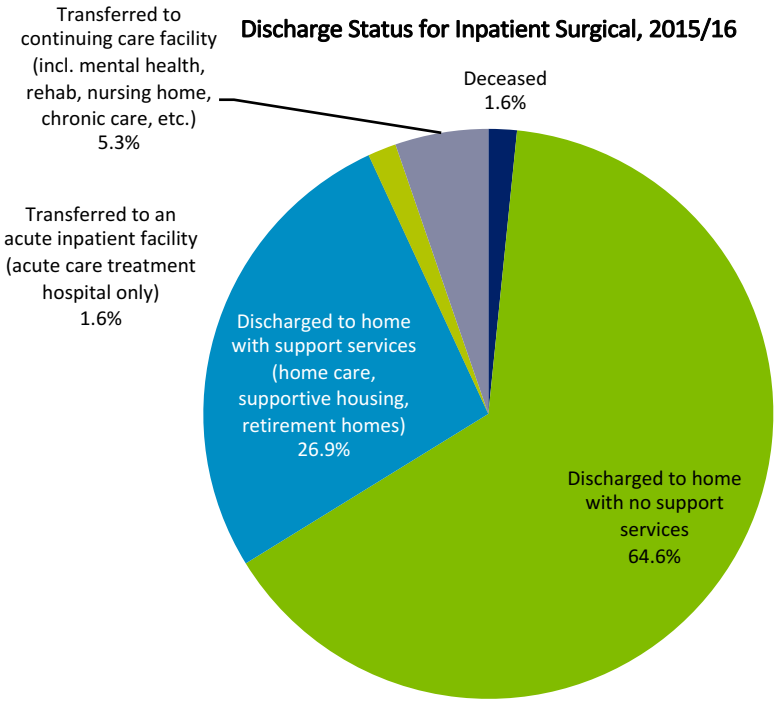
Key Highlights

- Surgical inpatients experience very few ALC days at NHH, suggesting good clinical pathways and availability of post-surgical supports outside the hospital.
- Inpatient surgical patients, along with inpatient mental health patients, are among the most complex and resource intensive patients at NHH. The average RIW for each surgical discharge over the past three years has remained steady at 1.48, compared with a hospital average of 1.0.

Source: Intellihealth Ontario

Discharge Status

Proportion for Inpatient Surgical



Key Highlights

- 64% of surgical patients are discharged home from hospital with no support services
- Approximately one quarter of patients (26.9%) are discharged home with support services such as home care, or to a retirement home or supportive housing

Referral Patterns

Cases by Residence for Inpatient Surgical

Patient Volumes by Residence for Inpatient Surgical, 2015/16

Patient Municipality	# Discharges	% Total Cases
COBOURG	167	38.4%
PORT HOPE	112	25.7%
ALNWICK/HALDIMAND	37	8.5%
CRAMAHE	28	6.4%
HAMILTON	27	6.2%
BRIGHTON	16	3.7%
TRENT HILLS	8	1.8%
CLARINGTON	5	1.1%
PETERBOROUGH	5	1.1%
OTHER	30	6.9%

Key Highlights

- Over half (63.1%) of inpatient surgical cases at NHH are from residents of Cobourg and Port Hope.

Source: Intellihealth Ontario

Market Share

3-Year Trend for Inpatient Surgical

Market Share Trend for Inpatient Surgical Services, 2013/14 to 2015/16

	2013/14			2014/15			2015/16			
Geography	Total Cases	For NHH	% for NHH	Total Cases	For NHH	% for NHH	Total Cases	For NHH	% for NHH	Absolute Change at NHH*
Cramahe	135	35	25.9%	167	36	21.6%	165	28	17.0%	**-8.9%**
Cobourg	750	173	23.1%	737	166	22.5%	739	167	22.6%	**-0.5%**
Hamilton	206	47	22.8%	198	29	14.6%	177	27	15.3%	**-7.5%**
Alnwick/Haldimand	115	23	20.0%	127	31	24.4%	160	37	23.1%	**3.1%**
Port Hope	453	76	16.8%	482	108	22.4%	501	112	22.4%	**5.6%**
TOTAL	1,659	354	21.3%	1,711	370	21.6%	1,742	371	21.3%	**0%**

**Change from 2013/14 to 2015/16*

Key Highlights

- Market share for inpatient surgical patients is much lower than the overall market share for all inpatients. This is primarily related to low market share among surgical specialties such as orthopaedics, plastic surgery, neurosurgery, etc.
- Inpatient surgical market share has remained constant since 2013/14
- NHH captures the highest inpatient surgical market share among residents of Cobourg and Port Hope, with 21.3% of the local population receiving their inpatient surgical care at NHH in 2015/16
- NHH market share for the communities surrounding Cobourg is not high, as approximately 75-80% of residents in the local population receive their surgical care elsewhere

Source: Intellihealth Ontario

Market Share

Detailed Cases for Inpatient Surgical

Market Share for Inpatient Surgical Services, 2015/16

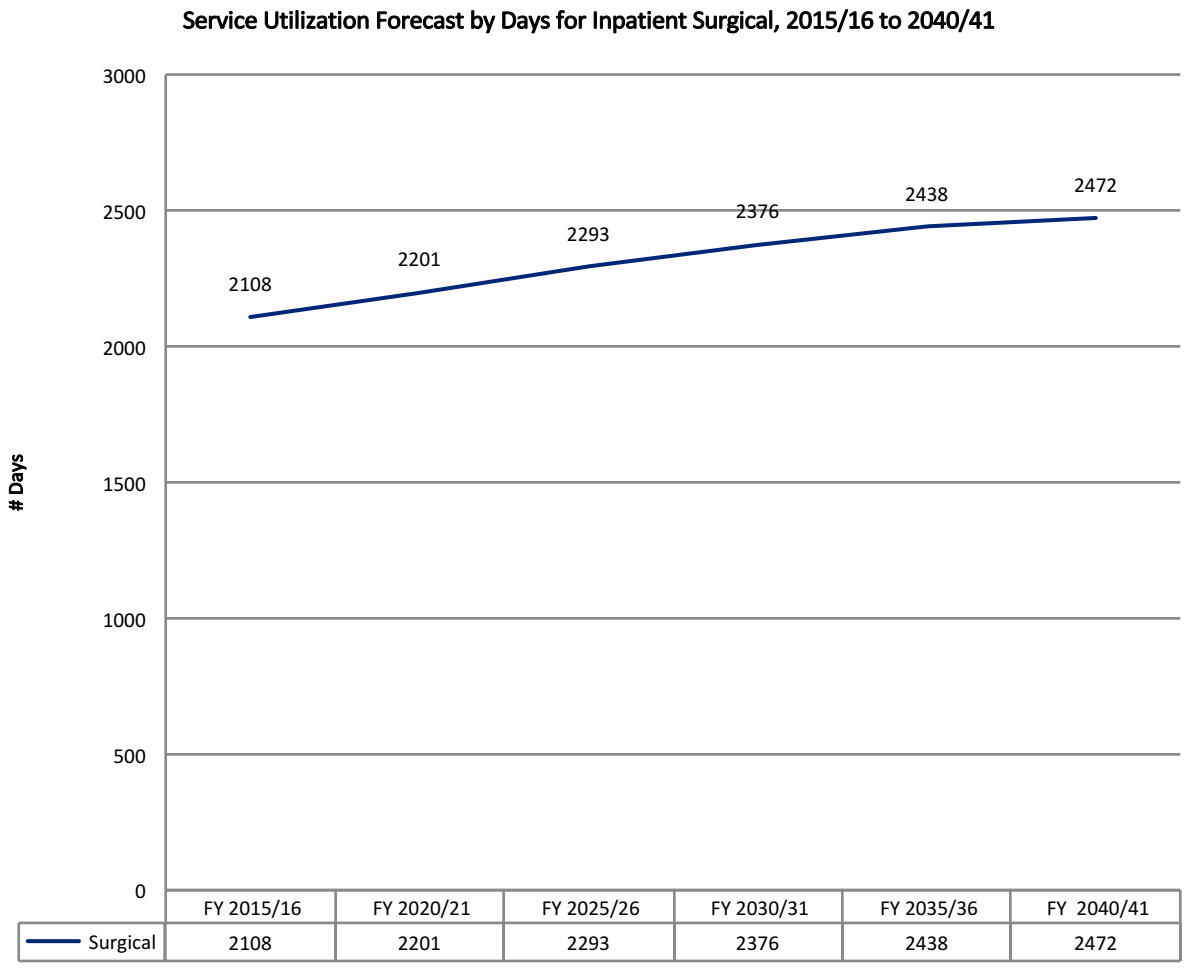
	Summary for NHH			Other NE Cluster Hospitals				Other Regions					
Patient Municipality	Total Discharges	NHH	%Share - NHH	RMH	PRHC	HHHS	CMH	CELHIN-Other	Toronto-Other	Toronto-Teaching	Kingston	Ottawa	Other
ALNWICK/HALDIMAND	160	37	23.1%	1	47	-	1	14	5	37	7	1	10
COBOURG	739	167	22.6%	-	261	-	-	61	19	129	49	4	49
PORT HOPE	501	112	22.4%	4	166	-	-	66	21	90	22	-	20
CRAMAHE	165	28	17.0%	-	63	-	2	17	3	5	21	-	26
HAMILTON	177	27	15.3%	-	51	-	-	18	8	40	6	2	25
BRIGHTON	354	16	4.5%	-	24	-	-	18	8	22	102	2	162
TRENT HILLS	424	8	1.9%	3	213	-	17	31	5	82	23	3	38
OTONABEE-S MONAGHAN	213	3	1.4%	3	145	-	-	12	2	34	4	1	8
HASTINGS HIGHLANDS	77	1	1.3%	1	26	-	-	4	-	12	6	3	24
CENTRE HASTINGS	170	2	1.2%	-	6	-	1	2	2	9	45	1	102
DOURO-DUMMER	91	1	1.1%	5	71	-	-	-	1	7	5	-	1
CAVAN MONAGHAN	185	2	1.1%	2	110	-	-	15	-	37	11	-	7
Other	11,281	20	2.3%	58	2,569	-	3	3,778	298	1,868	884	56	1,740

Key Highlights

- For patients not receiving their inpatient surgical care at NHH in 2015/16, PRHC is the next most frequently visited hospital.
- Local residents attended other hospitals in the CE LHIN, as well as hospitals in Toronto, Kingston and Ottawa

Future Projections

Service Utilization Forecast for Inpatient Surgical



Key Highlights

- Total patient days for inpatient surgical patients are expected to increase by 17.3% between 2015/16 and 2040/41 (equal to 364 inpatient days)

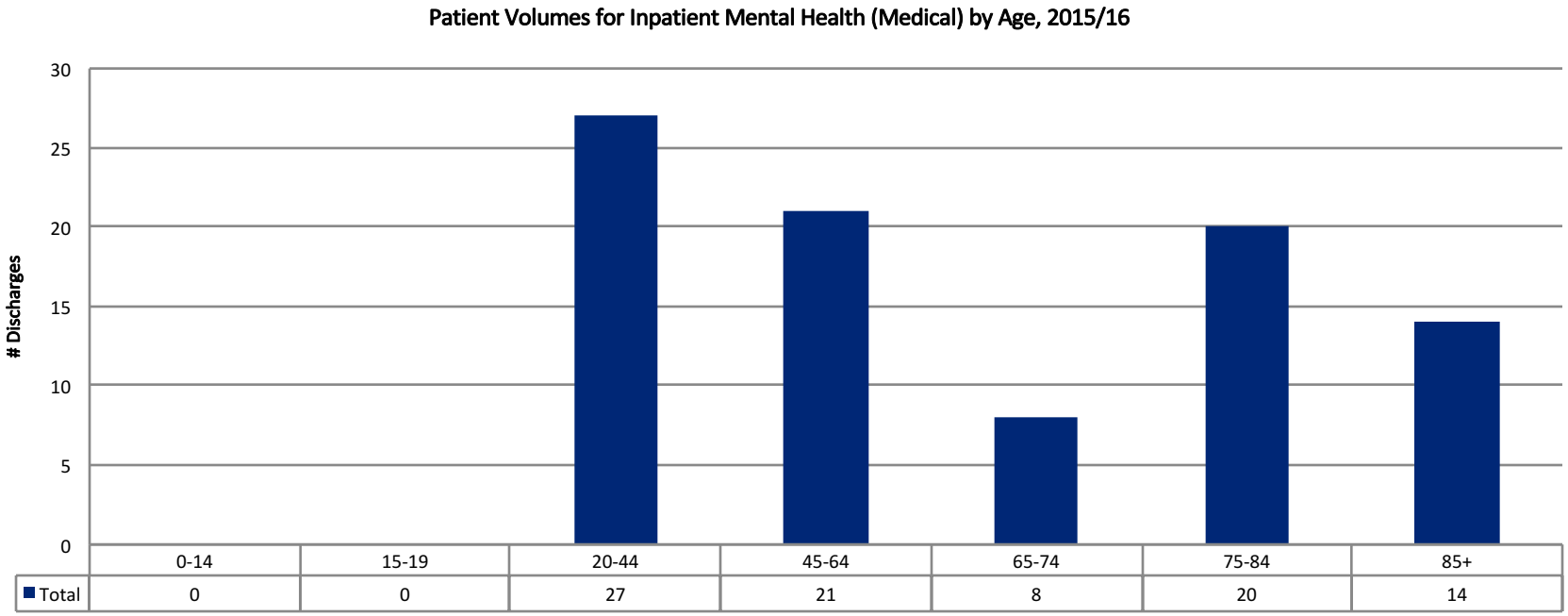
Source: Intellihealth Ontario

Inpatient Mental Health

NHH does not currently have designated inpatient mental health beds. NHH is admitting mental health patients to acute medical units when designated mental health beds are not available at other hospitals in the CE LHIN. The analysis that follows refers to use of inpatient medical beds for patients with mental health diagnoses.

Clinical Utilization

Patient Volumes for Inpatient Mental Health



Key Highlights

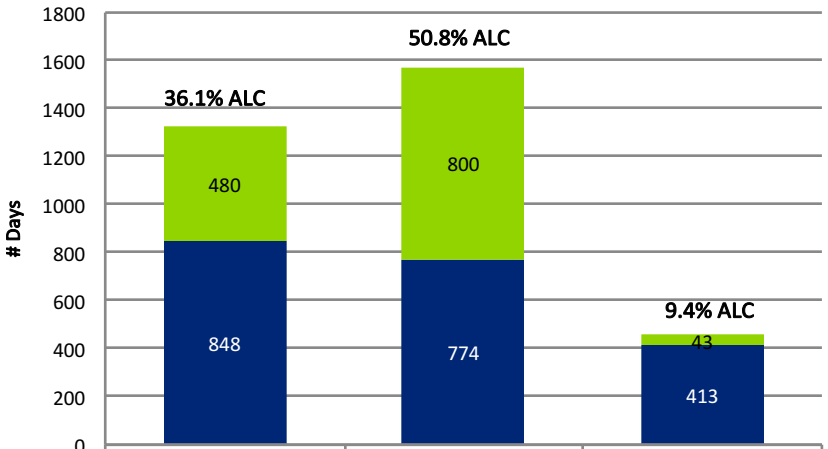
- There were 90 discharges from inpatient medical beds in 2015/16
- 46.7% of discharges were patients age 65+
- NHH had no inpatient mental health patients under age 20 in 2015/16

Source: Intellihealth Ontario

Clinical Utilization

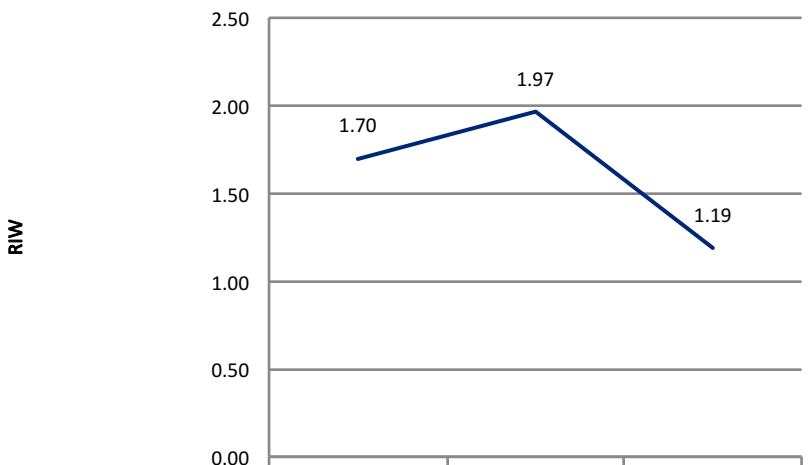
Acute / ALC Days / RIW for Inpatient Mental Health

Acute/ALC Inpatient Mental Health Days, 2013/14 to 2015/16



	FY 2013/14	FY 2014/15	FY 2015/16
ALC	480	800	43
Acute	848	774	413

Average Weighted Case for Inpatient Mental Health, 2013/14 to 2015/16



	FY 2013/14	FY 2014/15	FY 2015/16
Adult Mental Health	1.70	1.97	1.19

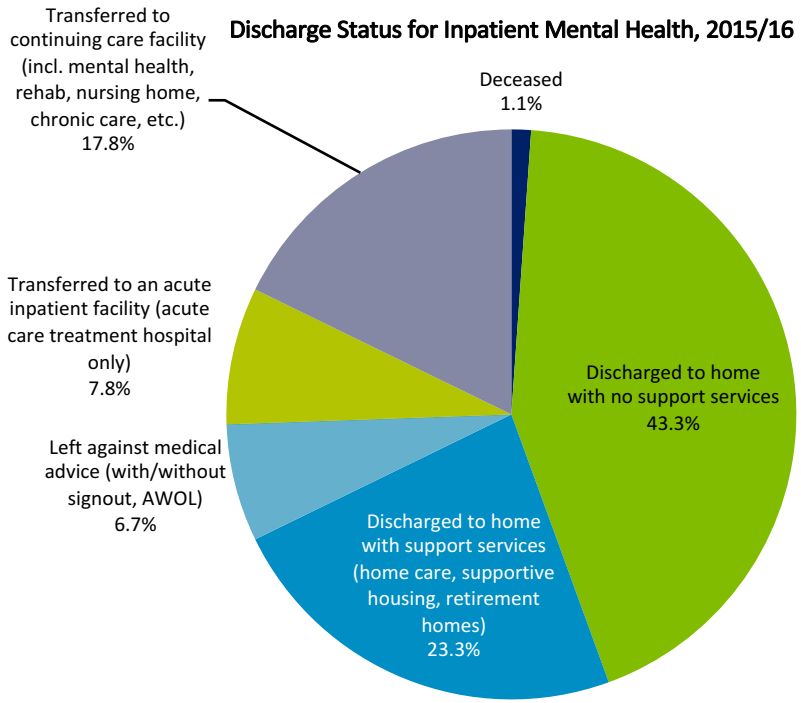
Key Highlights

- Inpatient mental health patients, along with surgical patients are among the most complex and resource intensive patients at NHH. The average RIW for each mental health discharge over the past three years has averaged 1.62, compared with a hospital average of 1.0
- There was a slight drop in mental health RIW between 2014/15 and 2015/16; however, low overall patient volumes and discharges of long-stay patients can contribute to year-over-year fluctuations.
- Mental health patients have the potential for long ALC stays, as evidenced in 2014/15. This can be a particular challenge when patients with mental health diagnoses are treated in acute medical beds, often without the specialized clinical care that can be required.

Source: Intellihealth Ontario

Discharge Status

Proportion for Inpatient Mental Health



Key Highlights

- Just under half of mental health patients are discharged to home without additional support services
- Approximately one quarter of patients are discharged home with support services such as home care, or to a retirement home or supportive housing
- One fifth of mental health patients are transferred to a continuing care facility

Source: Intellihealth Ontario

Referral Patterns

Cases by Residence for Inpatient Mental Health

Patient Volumes by Residence for Inpatient Mental Health, 2015/16

Patient Municipality	# Discharges	% Total Cases
COBOURG	48	53.3%
PORT HOPE	16	17.8%
ALNWICK/HALDIMAND	8	8.9%
HAMILTON	4	4.4%
CRAMAHE	3	3.3%
PETERBOROUGH	3	3.3%
TRENT HILLS	1	1.1%
CLARINGTON	1	1.1%
OTONABEE-S MONAGHAN	1	1.1%
OTHER	5	5.6%

Key Highlights

- Nearly three quarters (71.1%) of inpatient mental health cases at NHH are from residents of Cobourg and Port Hope.

Source: Intellihealth Ontario

Market Share

3-Year Trend for Inpatient Mental Health

Market Share Trend for Inpatient Mental Health Services, 2013/14 to 2015/16

	2013/14			2014/15			2015/16			
Geography	Total Cases	For NHH	% for NHH	Total Cases	For NHH	% for NHH	Total Cases	For NHH	% for NHH	Absolute Change at NHH*
Cobourg	11	11	100.0%	11	10	90.9%	8	8	100.0%	**0%**
Port Hope	71	69	97.2%	68	66	97.1%	53	48	90.6%	**-6.6%**
Alnwick/Haldimand	39	37	94.9%	28	25	89.3%	16	16	100.0%	**5.1%**
Hamilton	7	6	85.7%	8	8	100.0%	5	3	60.0%	**-25.7%**
Cramahe	8	5	62.5%	3	3	100.0%	5	4	80.0%	**17.5%**
TOTAL	136	128	94.1%	118	112	94.9%	87	79	90.8%	**-3.3%**

**Change from 2013/14 to 2015/16*

Key Highlights

- Market share for inpatient mental health patients has decreased by 3.3% since 2013/14
- NHH captures the highest inpatient mental health market share among residents of Cobourg and Alnwick/Haldimand, with 90.8% of the local population receiving their inpatient mental health care at NHH in 2015/16
- NHH market share for Hamilton Township is lowest of the local communities (60%) considering above 80% of each other community receives its mental health services from NHH; while also having illustrated a significant decrease since 2013/14 (by 25.7%)
- There has been a significant increase in market share for NHH since 2013/14 for mental health patients from the Cramahe area (17.5%)

Market Share

Cases for Inpatient Mental Health

Market Share for Inpatient Mental Health Services, 2015/16

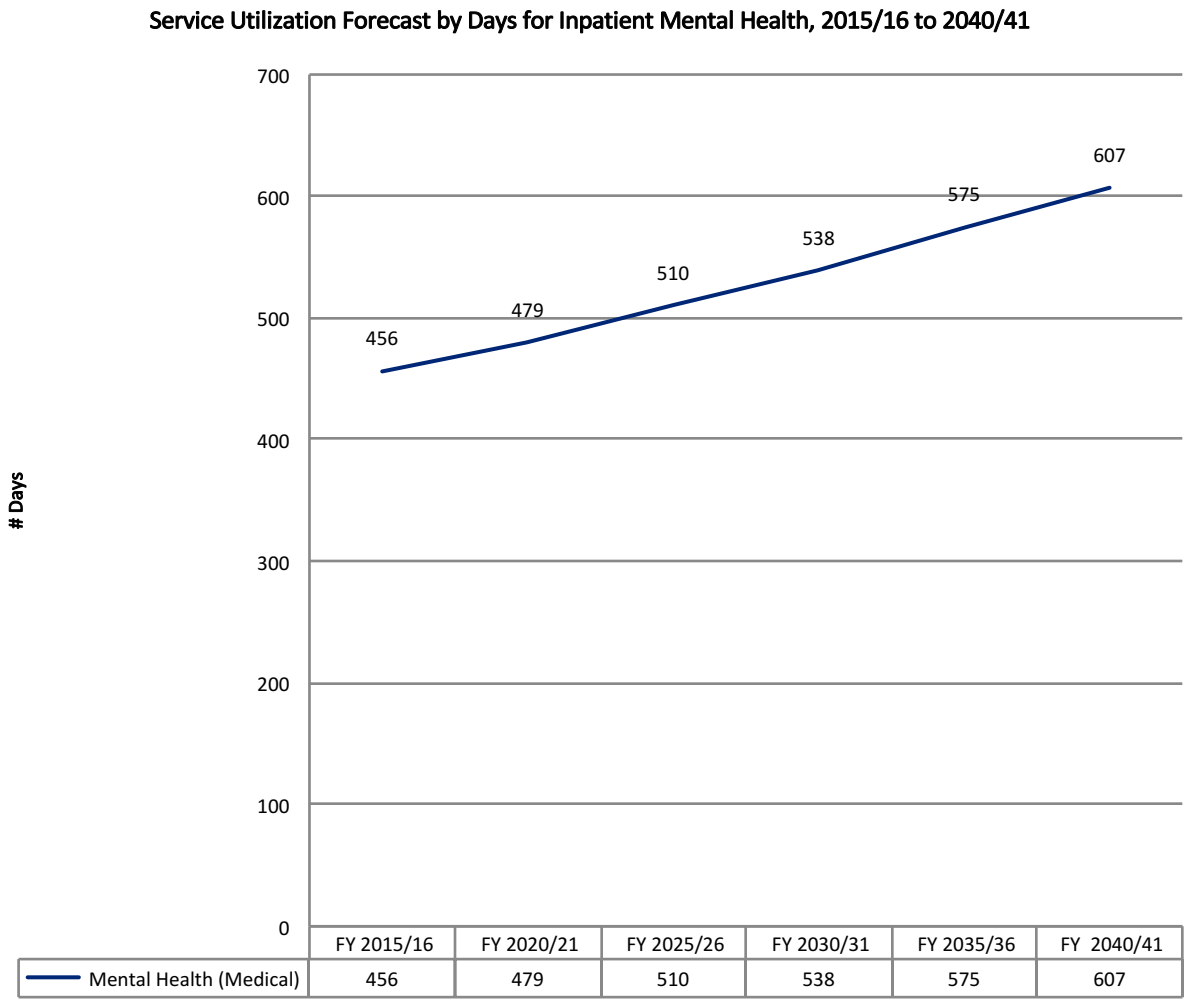
	Summary for NHH			Other NE Cluster Hospitals					Other Regions					
Patient Municipality	Total Discharges	NHH	%Share - NHH	RMH	PRHC	HHHS	CMH	CELHIN-Other	Toronto-Other	Toronto-Teaching	Kingston	Ottawa	Other
PORT HOPE	16	16	100.0%	-	-	-	-	-	-	-	-	-	-
ALNWICK/HALDIMAND	8	8	100.0%	-	-	-	-	-	-	-	-	-	-
COBOURG	53	48	90.6%	-	3	-	-	1	-	1	-	-	-
HAMILTON	5	4	80.0%	-	1	-	-	-	-	-	-	-	-
CRAMAHE	5	3	60.0%	-	-	-	-	-	-	-	-	-	2
OTONABEE-S MONAGHAN	6	1	16.7%	-	5	-	-	-	-	-	-	-	-
TRENT HILLS	35	1	2.9%	-	3	-	29	1	-	1	-	-	-
PETERBOROUGH	210	3	1.4%	1	197	-	-	1	-	5	1	-	2
CLARINGTON	132	1	0.8%	-	-	-	-	125	1	4	-	-	1

Key Highlights

- Nearly all patients in the NHH catchment admitted to a non-designated acute care bed received their inpatient mental health care at NHH in 2015/16.

Future Projections

Service Utilization Forecast for Inpatient Mental Health



Key Highlights

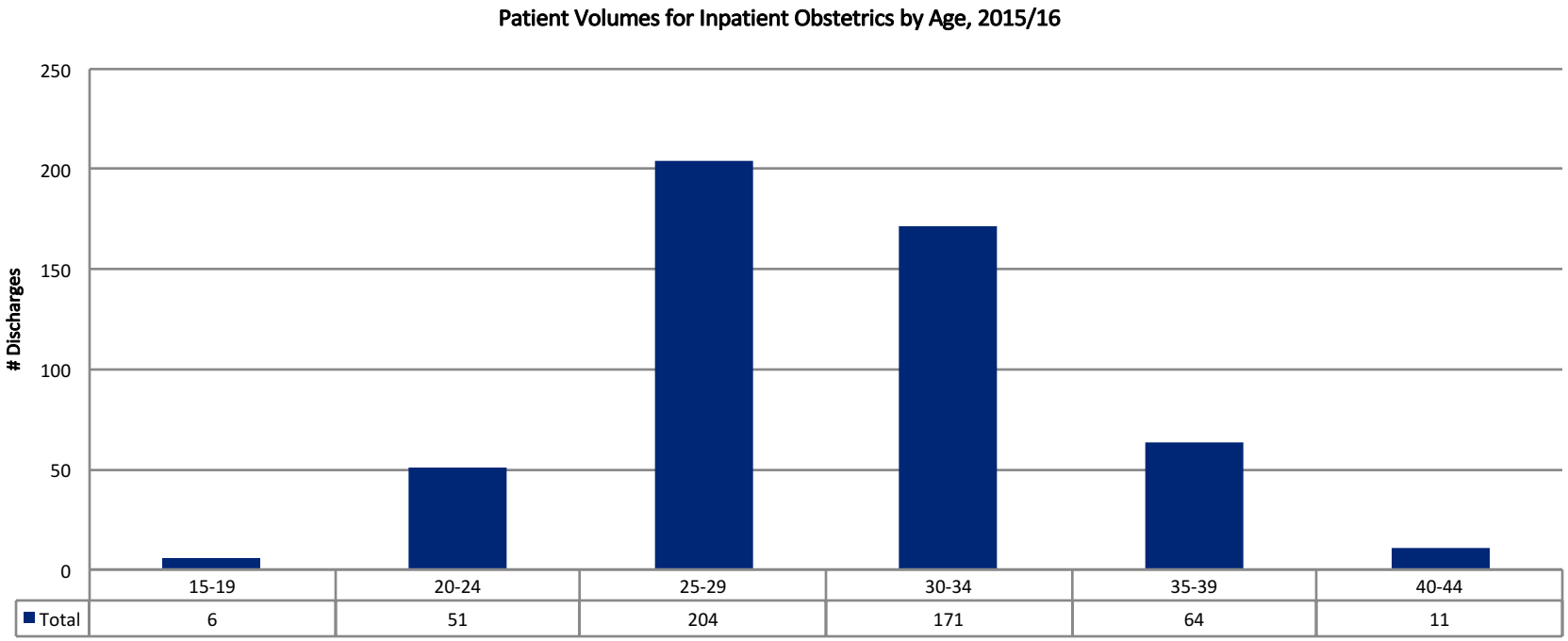
- Given a projection of current utilization patterns (i.e., admission to acute care medical bed), total patient days for inpatient mental health patients are expected to increase by 33.1% between 2015/16 and 2040/41 (equal to 151 inpatient days)

Source: Intellihealth Ontario

Inpatient Obstetrics

Clinical Utilization

Patient Volumes for Inpatient Obstetrics



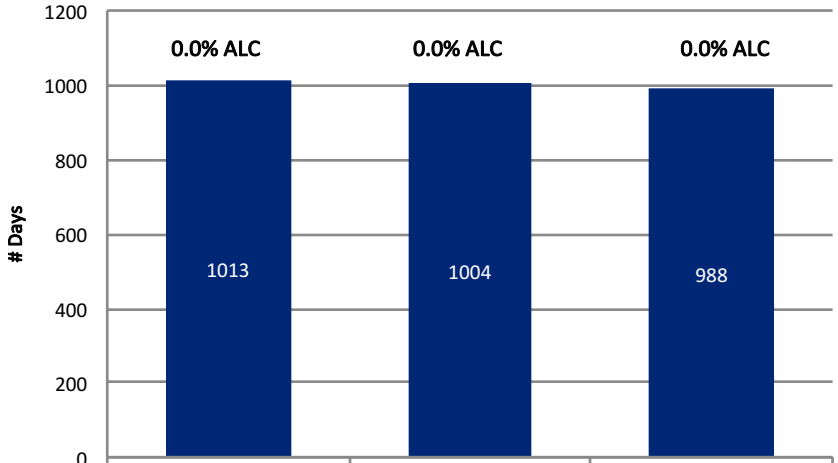
Key Highlights

- There were 507 discharges from inpatient obstetric beds in 2015/16
- The majority of discharges were patients age 20-44, with 1.2% under the age of 19
- The highest proportion of obstetric patients are between the ages of 25 to 34

Clinical Utilization

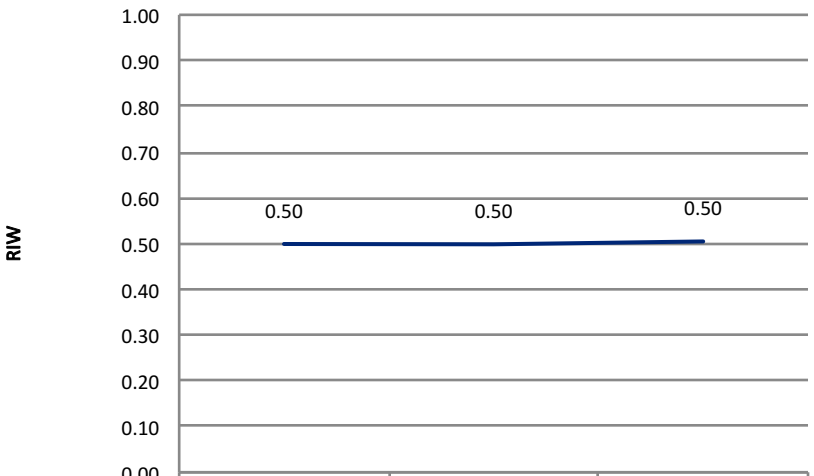
Acute / ALC Days / RIW for Inpatient Obstetrics

Acute/ALC Inpatient Obstetrics Days, 2013/14 to 2015/16



	FY 2013/14	FY 2014/15	FY 2015/16
ALC	0	0	0
Acute	1013	1004	988

Average Weighted Case for Inpatient Obstetrics, 2013/14 to 2015/16



	FY 2013/14	FY 2014/15	FY 2015/16
Obstetrics	0.50	0.50	0.50

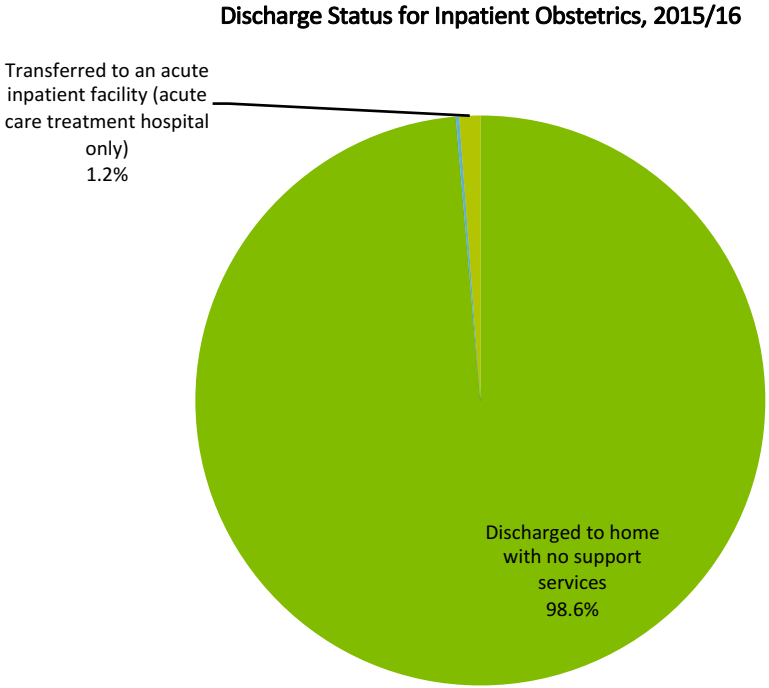
Key Highlights

- There has been a decline in the number of patient days over the past three years, while case volumes have remained steady.
- The average RIW for inpatient obstetrical patients has remained steady over the past three years at 0.5, compared with a hospital average of 1.0 (i.e., obstetrical patients consume, on average, approximately half of the resources per case as other hospital patients)

Source: Intellihealth Ontario

Discharge Status

Proportion for Inpatient Obstetrics



Key Highlights

- 98.6% of obstetric patients are discharged home from hospital with no support services, with the remainder being transferred to an acute inpatient facility if required

Referral Patterns

Cases by Residence for Inpatient Obstetrics

Patient Volumes by Residence for Inpatient Obstetrics, 2015/16

Patient Municipality	# Discharges	% Total Cases
COBOURG	135	26.6%
CLARINGTON	123	24.3%
PORT HOPE	72	14.2%
HAMILTON	34	6.7%
CRAMAHE	30	5.9%
TRENT HILLS	22	4.3%
ALNWICK/HALDIMAND	17	3.4%
WHITBY	17	3.4%
BRIGHTON	15	3.0%
OTHER	42	8.3%

Key Highlights

- A quarter of inpatient obstetric cases at NHH are from residents of Cobourg (26.6%) and Clarington (24.3%)

Source: Intellihealth Ontario

Market Share

3-Year Trend for Inpatient Obstetrics

Market Share Trend for Inpatient Obstetrics Services, 2013/14 to 2015/16

	2013/14			2014/15			2015/16			
Geography	Total Cases	For NHH	% for NHH	Total Cases	For NHH	% for NHH	Total Cases	For NHH	% for NHH	Absolute Change at NHH*
Cobourg	181	141	77.9%	197	156	79.2%	177	135	76.3%	**-1.6%**
Alnwick/Haldimand	47	36	76.6%	29	19	65.5%	34	17	50.0%	**-26.6%**
Cramahe	63	45	71.4%	58	34	58.6%	48	30	62.5%	**-8.9%**
Port Hope	119	80	67.2%	127	84	66.1%	138	72	52.2%	**-15%**
Hamilton	53	30	56.6%	69	42	60.9%	69	34	49.3%	**-7..3%**
TOTAL	463	332	71.7%	480	335	69.8%	466	288	61.8%	**-9.9%**

**Change from 2013/14 to 2015/16*

Key Highlights

- Market share for inpatient obstetrics patients has decreased by 9.9% since 2013/14, suggesting that larger declines in case volumes from within the catchment area are being offset by referrals from Clarington in Durham Region (123 cases in 2015/16)
- NHH captures the highest inpatient obstetrics market share among residents of Cobourg, with 76.3% of the local population receiving their inpatient obstetric care at NHH in 2015/16
- There has been a significant decrease in market share from residents in Alnwick/Haldimand since 2013/14 (by 26.6%)

Source: Intellihealth Ontario

Market Share

Detailed Cases for Inpatient Obstetrics

Market Share for Inpatient Obstetrics Services, 2015/16

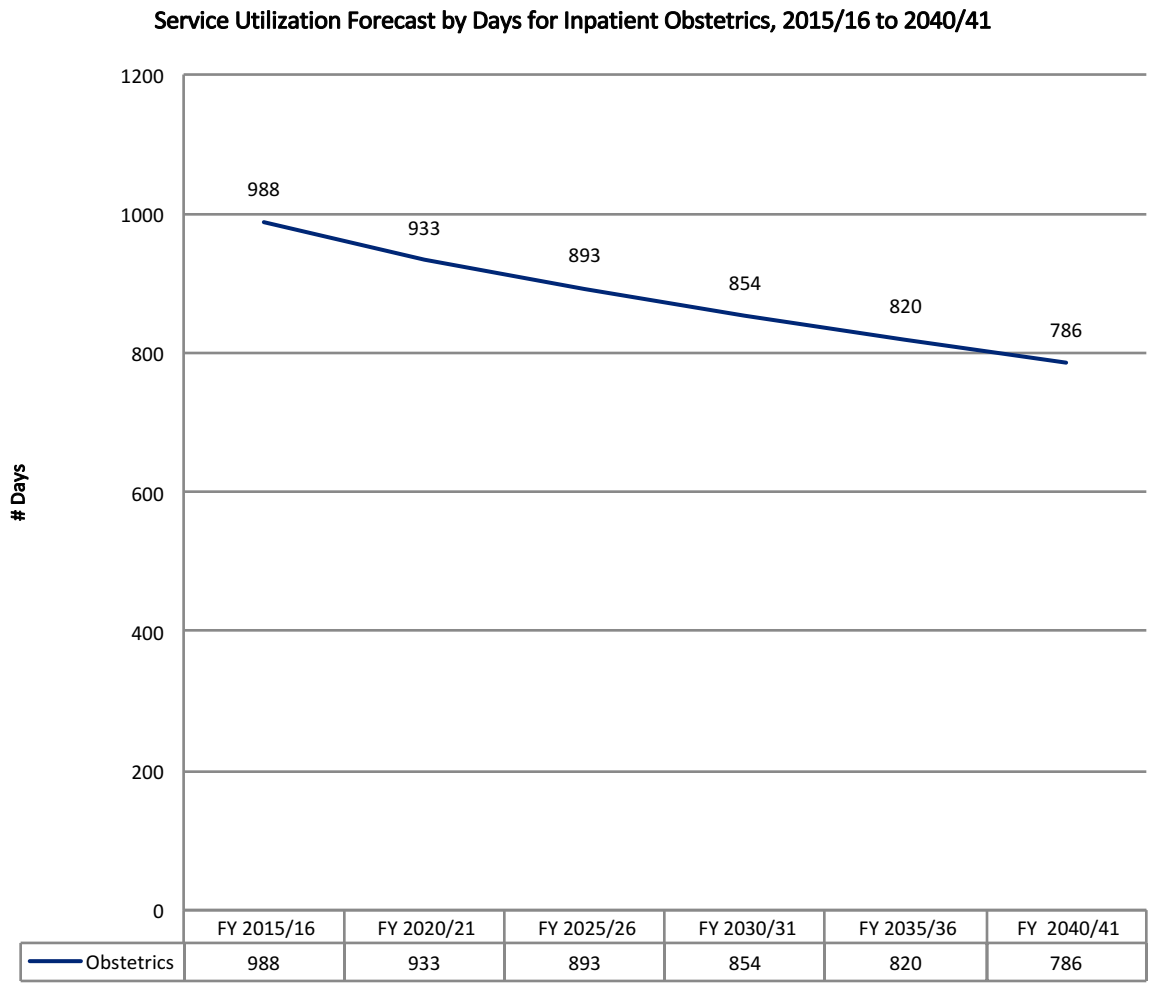
	Summary for NHH			Other NE Cluster Hospitals				Other Regions					
Patient Municipality	Total Discharges	NHH	%Share - NHH	RMH	PRHC	HHHS	CMH	CELHIN-Other	Toronto-Other	Toronto-Teaching	Kingston	Ottawa	Other
COBOURG	177	135	76.3%	-	11	-	-	21	-	8	-	-	2
CRAMAHE	48	30	62.5%	-	7	-	-	3	-	2	-	-	6
PORT HOPE	138	72	52.2%	1	28	-	-	27	1	9	-	-	-
ALNWICK/HALDIMAND	34	17	50.0%	-	7	-	-	7	-	3	-	-	-
HAMILTON	69	34	49.3%	-	15	-	-	11	1	2	-	-	6
TRENT HILLS	115	22	19.1%	-	56	-	1	4	-	4	3	-	25
BRIGHTON	107	15	14.0%	-	2	-	-	5	1	1	6	-	77
CLARINGTON	1,038	123	11.8%	-	12	-	-	811	9	49	-	-	34
ASPHODEL-NORWOOD	35	1	2.9%	-	32	-	-	-	-	2	-	-	-
TWEED	46	1	2.2%	-	-	-	-	-	-	-	8	-	37
STIRLING-RAWDON	71	1	1.4%	-	1	-	-	-	-	-	5	1	63
QUINTE WEST	442	6	1.4%	-	2	-	-	3	-	3	8	-	420
Other	8,095	41	3.7%	359	1,025	-	-	4,446	276	519	41	4	1,349

Key Highlights

- For local residents not receiving their inpatient obstetric care at NHH in 2015/16, PRHC is the next most frequently visited hospital.
- Local residents attended other hospitals in the CE LHIN, as well as Toronto teaching hospitals; very few went to Kingston.

Future Projections

Service Utilization Forecast for Inpatient Obstetrics



Key Highlights

- Total patient days for inpatient obstetrics patients are expected to decrease 20.4% between 2015/16 and 2040/41
- Such a decline will put the program at NHH at risk as the health human resources model depends on shared resources across specialty areas to maintain full time expertise (e.g. anesthesiologist's case load include obstetric patients). Reliance on patients from outside the catchment area and/or reliance on one particular physician's clientele pose additional risks to the program.

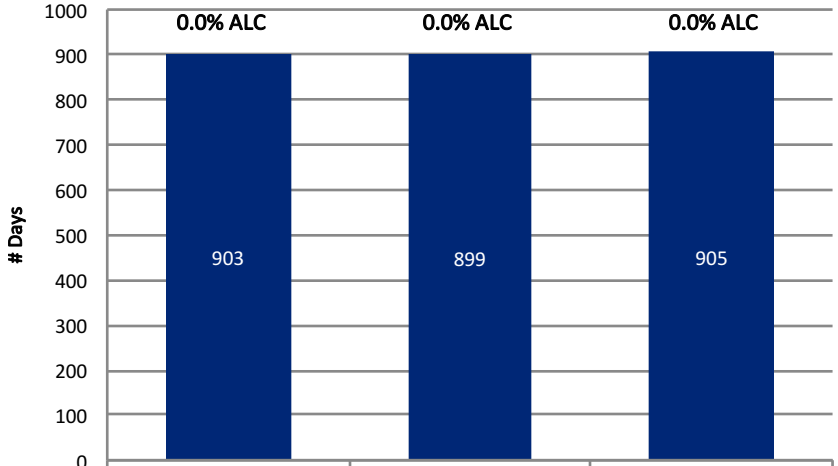
Source: Intellihealth Ontario

Inpatient Newborn

Clinical Utilization

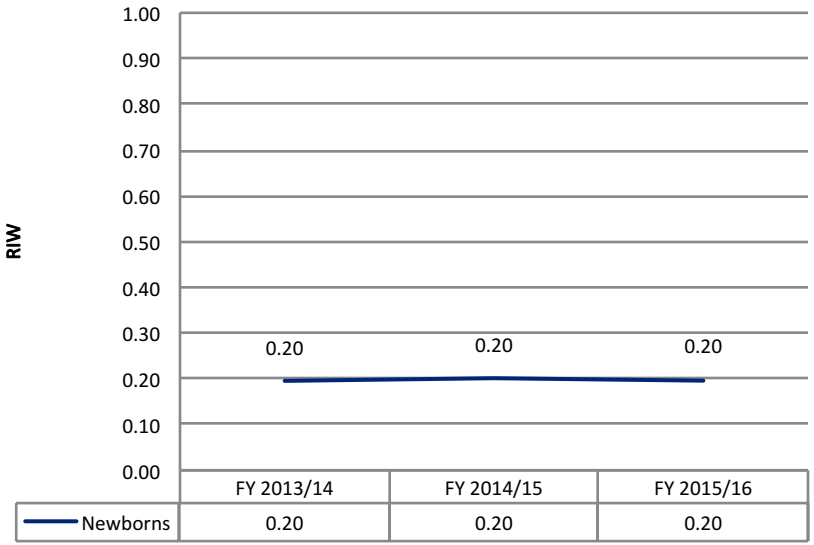
Acute / ALC Days / RIW for Inpatient Newborns

Acute/ALC Inpatient Newborns Days, 2013/14 to 2015/16



	FY 2013/14	FY 2014/15	FY 2015/16
ALC	0	0	0
Acute	903	899	905

Average Weighted Case for Inpatient Newborns, 2013/14 to 2015/16



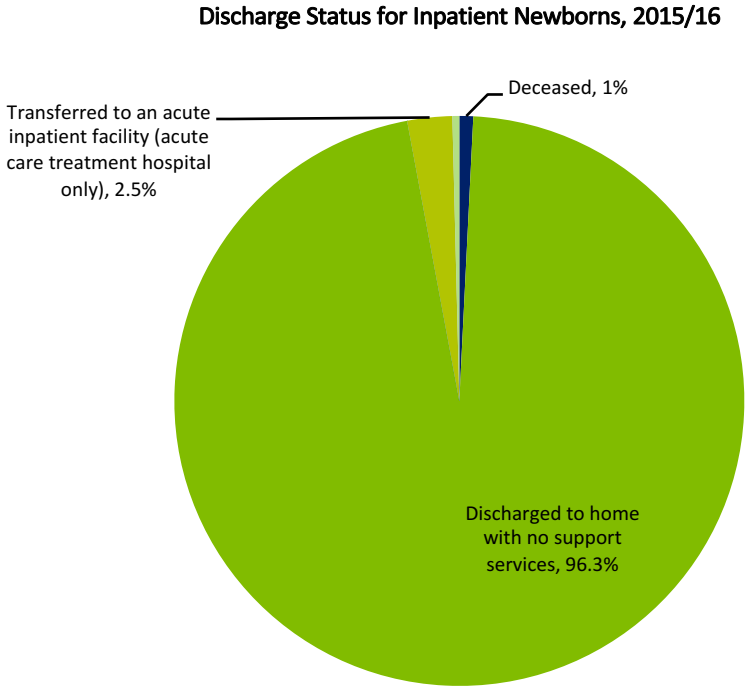
	FY 2013/14	FY 2014/15	FY 2015/16
Newborns	0.20	0.20	0.20

Key Highlights

- There were 511 discharges for newborns in 2015/16
- The number of acute days per year remained relatively stable between 2013/14 and 2015/16
- The average RIW for newborns at NHH has remained steady over the past three years at 0.2, compared with a hospital average of 1.0 (i.e., newborns consume, on average, approximately 20% of the resources per case as other hospital patients), as would be expected given the focus on lower risk births at NHH.

Discharge Status

Proportion for Inpatient Newborns



Key Highlights

- Most newborn patients are discharged home from hospital with no support services
- 2.5% of newborn patients are transferred from NHH to an acute inpatient facility

Referral Patterns

Cases by Residence for Inpatient Newborns

Patient Volumes by Residence for Inpatient Newborns, 2015/16

Patient Municipality	# Discharges	% Total Cases
COBOURG	132	25.8%
CLARINGTON	125	24.5%
PORT HOPE	71	13.9%
HAMILTON	35	6.8%
CRAMAHE	32	6.3%
TRENT HILLS	21	4.1%
ALNWICK/HALDIMAND	19	3.7%
WHITBY	19	3.7%
BRIGHTON	15	2.9%
OTHER	42	8.2%

Key Highlights

- Nearly half (50.3%) of inpatient newborn cases at NHH are from residents of Cobourg and Clarington

Source: Intellihealth Ontario

Market Share

3-Year Trend for Inpatient Newborns

Market Share Trend for Inpatient Newborns Services, 2013/14 to 2015/16

	2013/14			2014/15			2015/16			
Geography	Total Cases	For NHH	% for NHH	Total Cases	For NHH	% for NHH	Total Cases	For NHH	% for NHH	Absolute Change at NHH*
Alnwick/Haldimand	45	33	73.3%	31	18	58.1%	33	19	57.6%	**-15.7%**
Cobourg	186	135	72.6%	193	151	78.2%	187	132	70.6%	**-2.0%**
Port Hope	107	75	70.1%	134	86	64.2%	145	71	49.0%	**-21.1%**
Cramahe	65	45	69.2%	65	35	53.8%	51	32	62.7%	**-6.5%**
Hamilton	53	28	52.8%	76	43	56.6%	76	35	46.1%	**-6.7%**
TOTAL	456	316	69.3%	499	333	66.7%	492	289	58.7%	**-10.6%**

**Change from 2013/14 to 2015/16*

Key Highlights

- While the number of newborn cases has increased from 462 to 511 over the past three years, market share for newborn patients has decreased across all local population sources, totaling a decrease of 10.6% of the market share since 2013/14
- NHH captures the highest inpatient newborn market share among residents of Cobourg, however in 2013/14 the highest market share was for Alnwick/Haldimand which has now decrease by 15.7%

Market Share

Detailed Cases for Inpatient Newborns

Market Share for Inpatient Newborns Services, 2015/16

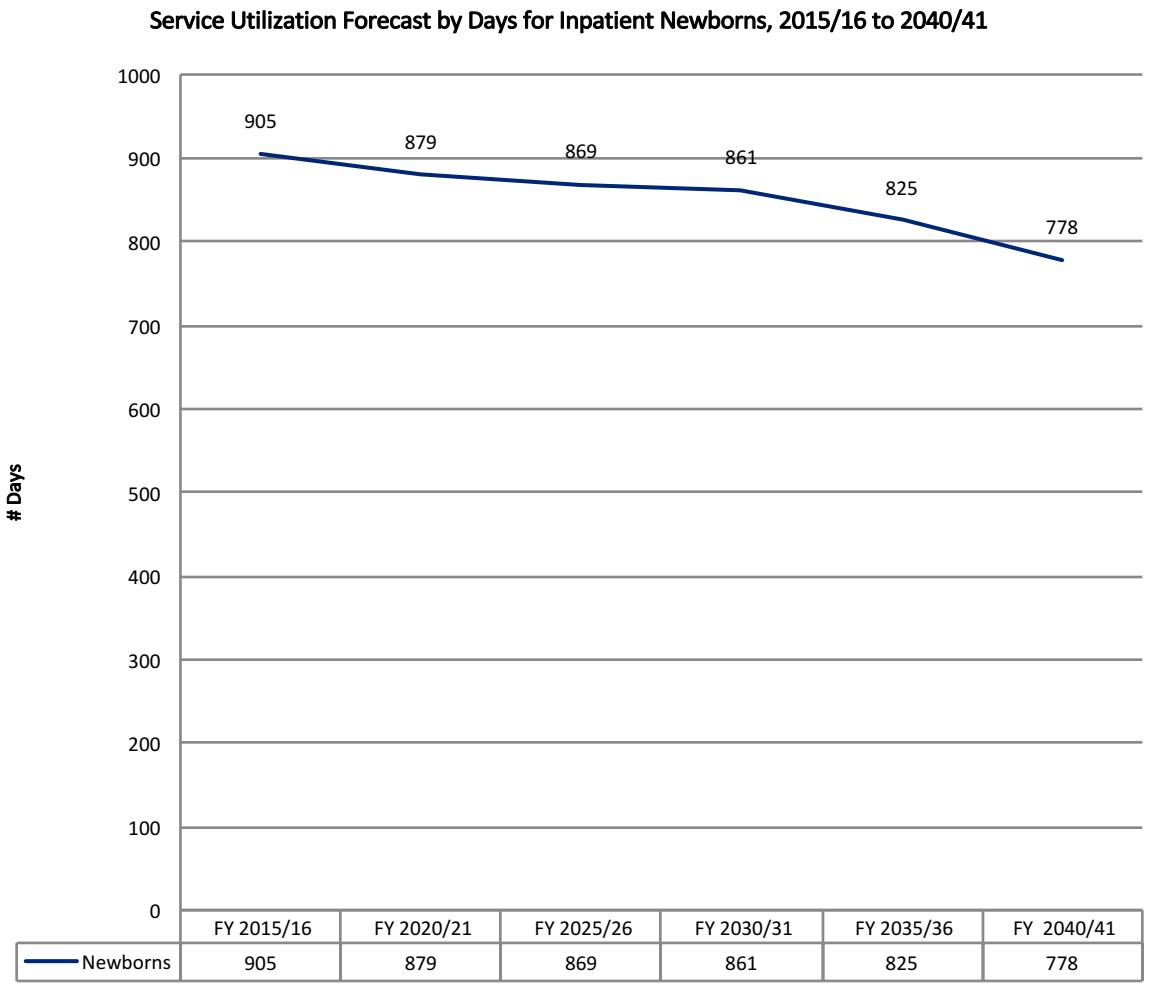
	Summary for NHH			Other NE Cluster Hospitals				Other Regions					
Patient Municipality	Total Discharges	NHH	%Share - NHH	RMH	PRHC	HHHS	CMH	CELHIN-Other	Toronto-Other	Toronto-Teaching	Kingston	Ottawa	Other
COBOURG	187	132	70.6%	-	12	-	-	28	-	12	-	-	3
CRAMAHE	51	32	62.7%	-	9	-	-	3	-	1	-	-	6
ALNWICK/HALDIMAND	33	19	57.6%	-	7	-	-	5	-	2	-	-	-
PORT HOPE	145	71	49.0%	1	30	-	-	31	1	10	1	-	-
HAMILTON	76	35	46.1%	-	16	-	-	14	2	3	-	-	6
TRENT HILLS	119	21	17.6%	-	59	-	-	5	-	4	5	-	25
BRIGHTON	106	15	14.2%	-	3	-	-	5	1	1	2	-	79
CLARINGTON	1,067	125	11.7%	-	16	-	-	830	10	56	-	-	30
ASPHODEL-NORWOOD	40	1	2.5%	1	33	-	-	2	-	3	-	-	-
WHITBY	1,342	19	1.4%	-	1	-	-	905	41	120	-	-	255
STIRLING-RAWDON	76	1	1.3%	-	1	-	-	-	-	1	8	-	65
QUINTE WEST	445	5	1.1%	-	1	-	-	3	-	6	17	-	413
Other	6,644	25	2.6%	325	1,037	-	-	3,479	230	370	44	6	1,096

Key Highlights

- For patients not receiving their inpatient newborn care at NHH in 2015/16, PRHC is the next most frequently visited hospital.
- Local residents attended other hospitals in the CE LHIN, as well as Toronto teaching hospitals.

Future Projections

Service Utilization Forecast for Inpatient Newborns



Key Highlights

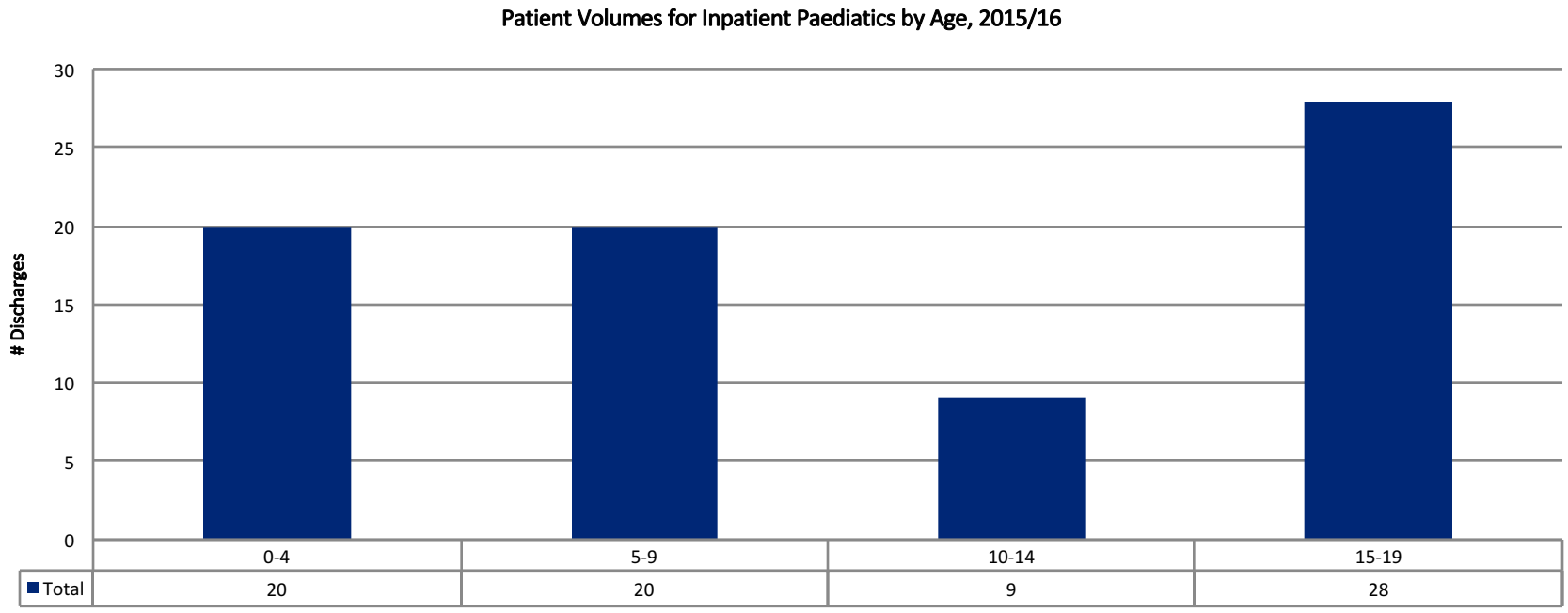
- Total patient days for inpatient newborn patients are expected to decrease by 14.0% between 2015/16 and 2040/41

Source: Intellihealth Ontario

Inpatient Paediatrics

Clinical Utilization

Patient Volumes for Inpatient Paediatrics



Key Highlights

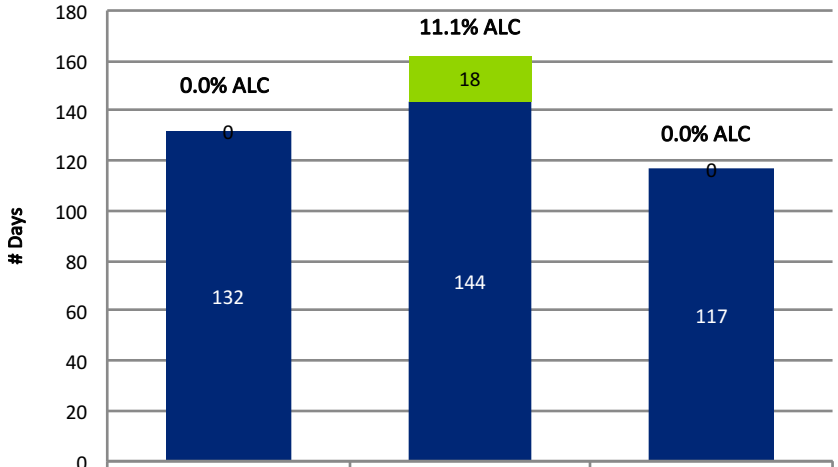
- There were 77 discharges from inpatient paediatric beds in 2015/16
- 63.6% of discharges were patients below the age of 14
- As NHH only has 2 inpatient paediatric beds, and most often sends patients that need to be admitted to the regional centre, it is interesting that there was such large (recent) volume of paediatric patients
- Note that 26% of the paediatric population are cases due to appendectomies

Source: Intellihealth Ontario

Clinical Utilization

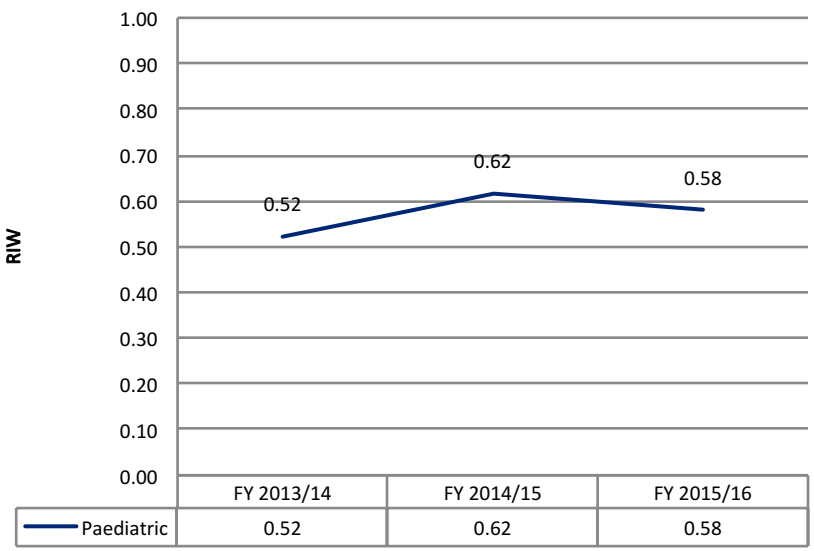
Acute / ALC Days / RIW for Inpatient Paediatrics

Acute/ALC Inpatient Paediatrics Days, 2013/14 to 2015/16



	FY 2013/14	FY 2014/15	FY 2015/16
ALC	0	18	0
Acute	132	144	117

Average Weighted Case for Inpatient Paediatrics, 2013/14 to 2015/16



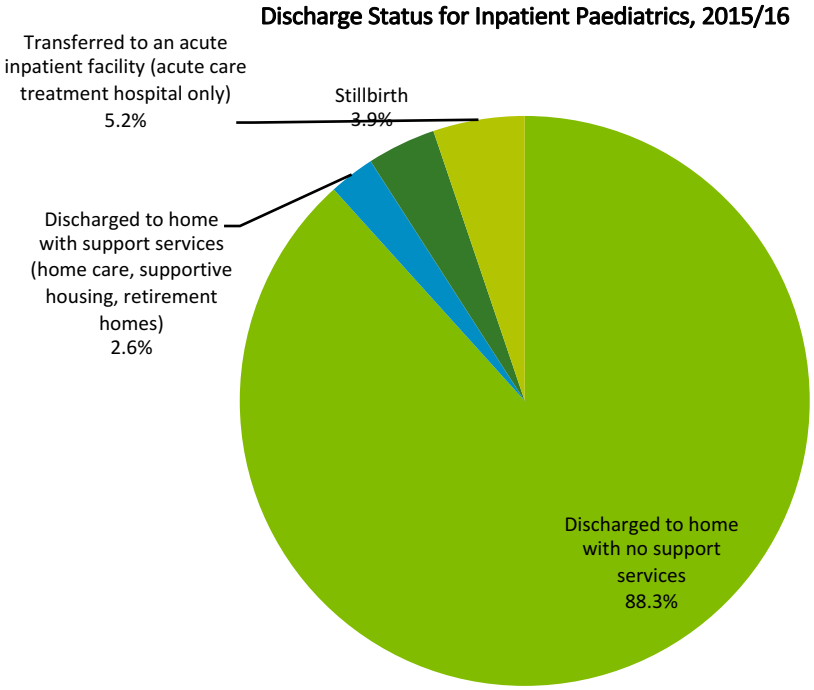
	FY 2013/14	FY 2014/15	FY 2015/16
Paediatric	0.52	0.62	0.58

Key Highlights

- The average RIW for inpatient paediatric patients has fluctuated over the past three years, averaging 0.57, compared with a hospital average of 1.0. Fluctuations are likely due to relatively low patient volumes on an annual basis.

Discharge Status

Proportion for Inpatient Paediatrics



Key Highlights

- Most paediatric patients are discharged home from hospital with no support services
- Of those with different discharge status, equal portions are stillbirths, discharged with support services and/or transferred to an acute facility

Source: Intellihealth Ontario

Referral Patterns

Cases by Residence for Inpatient Paediatrics

Patient Volumes by Residence for Inpatient Paediatrics, 2015/16

Patient Municipality	# Discharges	% Total Cases
COBOURG	23	29.9%
PORT HOPE	13	16.9%
CRAMAHE	10	13.0%
HAMILTON	7	9.1%
ALNWICK/HALDIMAND	5	6.5%
PETERBOROUGH	5	6.5%
KAWARTHA LAKES	4	5.2%
TRENT HILLS	2	2.6%
BRIGHTON	2	2.6%
OTHER	6	7.8%

Key Highlights

- The largest portion of inpatient paediatric cases at NHH are from residents of Cobourg (29.9%)

Market Share

3-Year Trend for Inpatient Paediatrics

Market Share Trend for Inpatient Paediatrics Services, 2013/14 to 2015/16

	2013/14			2014/15			2015/16			
Geography	Total Cases	For NHH	% for NHH	Total Cases	For NHH	% for NHH	Total Cases	For NHH	% for NHH	Absolute Change at NHH*
Hamilton	26	10	38.5%	41	7	17.1%	29	7	24.1%	**-14.4%**
Cramahe	32	8	25.0%	36	4	11.1%	31	10	32.3%	**7.3%**
Alnwick/Haldimand	23	5	21.7%	42	3	7.1%	39	4	10.3%	**-11.4%**
Cobourg	107	23	21.5%	103	19	18.4%	109	22	20.2%	**-1.3%**
Port Hope	66	11	16.7%	92	19	20.7%	94	12	12.8%	**-3.9%**
TOTAL	254	57	22.4%	314	52	16.6%	302	55	18.2%	**-4.2%**

**Change from 2013/14 to 2015/16*

Key Highlights

- Market share for inpatient paediatrics patients is low overall and has decreased by 4.2% since 2013/14
- NHH captures the highest inpatient paediatrics market share among residents of Cramahe (32.3%) in 2015/16; however only 18.2% of the local population receiving their inpatient paediatrics care at NHH in 2015/16
- The most impact in lost market share for paediatrics patients in NHH's catchment area is from Hamilton, with 14.4% decline since 2013/14

Market Share

Cases for Inpatient Paediatrics

Market Share for Inpatient Paediatrics Services, 2015/16

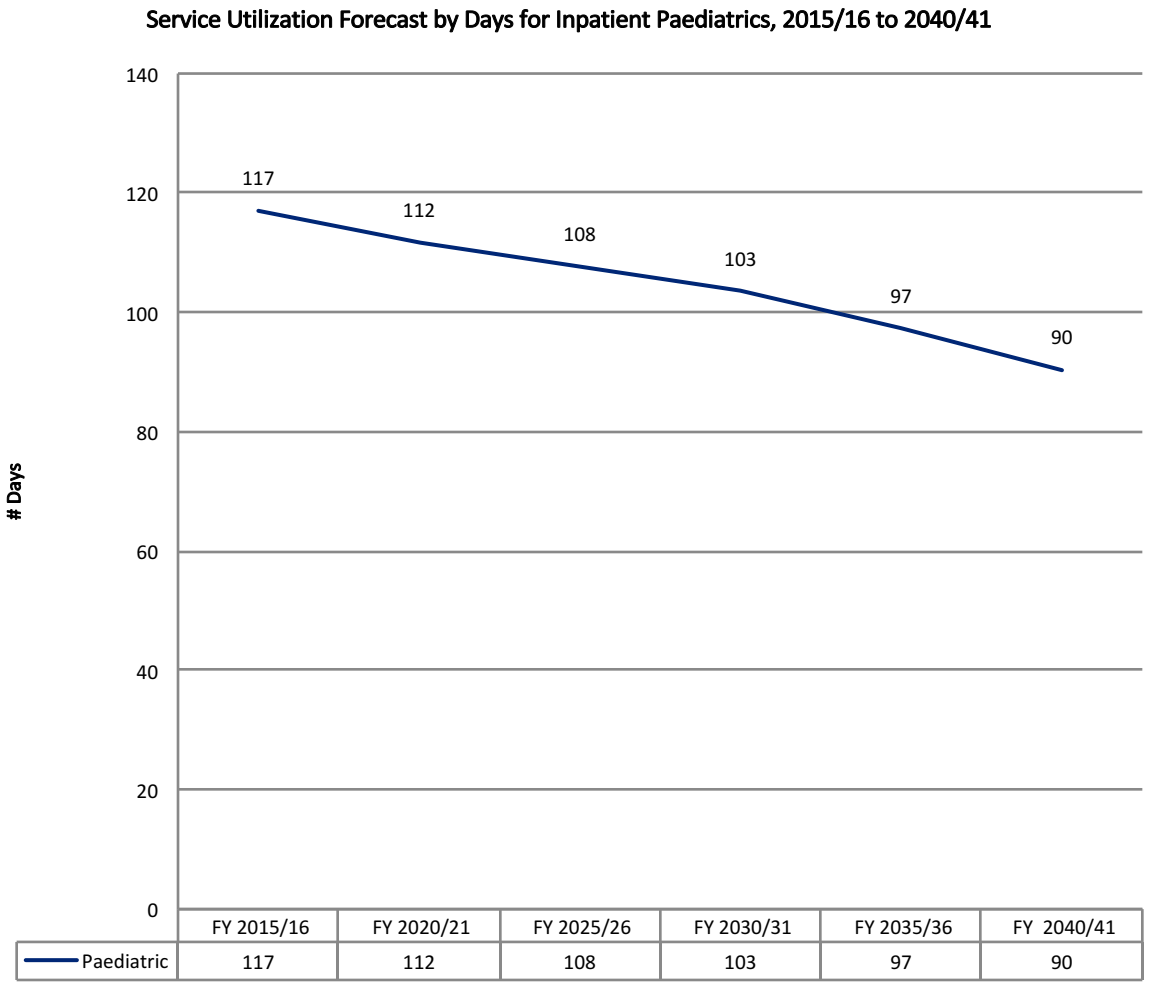
	Summary for NHH			Other NE Cluster Hospitals					Other Regions				
Patient Municipality	Total Discharges	NHH	%Share - NHH	RMH	PRHC	HHHS	CMH	CELHIN-Other	Toronto-Other	Toronto-Teaching	Kingston	Ottawa	Other
CRAMAHE	31	10	32.3%	-	13	-	-	-	-	3	2	1	2
HAMILTON	29	7	24.1%	-	10	-	-	1	1	7	1	-	2
COBOURG	109	22	20.2%	-	48	-	-	7	1	28	2	-	1
PORT HOPE	94	12	12.8%	-	39	-	-	9	1	28	-	3	2
ALNWICK/HALDIMAND	39	4	10.3%	-	9	-	-	2	2	18	2	1	1
BRIGHTON	45	2	4.4%	-	2	-	-	4	1	1	14	1	20
DYSART ET AL	29	1	3.4%	-	14	-	-	1	-	9	-	-	1
TRENT HILLS	64	2	3.1%	-	29	-	2	1	-	18	1	1	10
ASPHODEL-NORWOOD	32	1	3.1%	-	22	-	-	1	-	4	1	1	2
CAVAN MONAGHAN	58	1	1.7%	-	42	-	-	2	-	12	1	-	-
KAWARTHA LAKES	375	4	1.1%	39	155	-	-	56	1	107	1	2	3
SELWYN	103	1	1.0%	-	81	-	-	1	1	17	1	1	-
Other	1,160	6	1.0%	1	481	-	1	297	29	291	4	5	45

Key Highlights

- For patients not receiving their care at NHH in 2015/16, PRHC is the next most frequently visited hospital.
- Local residents attended other hospitals in the CE LHIN, as well as Toronto teaching hospitals in some cases.

Future Projections

Service Utilization Forecast for Inpatient Paediatrics



Key Highlights

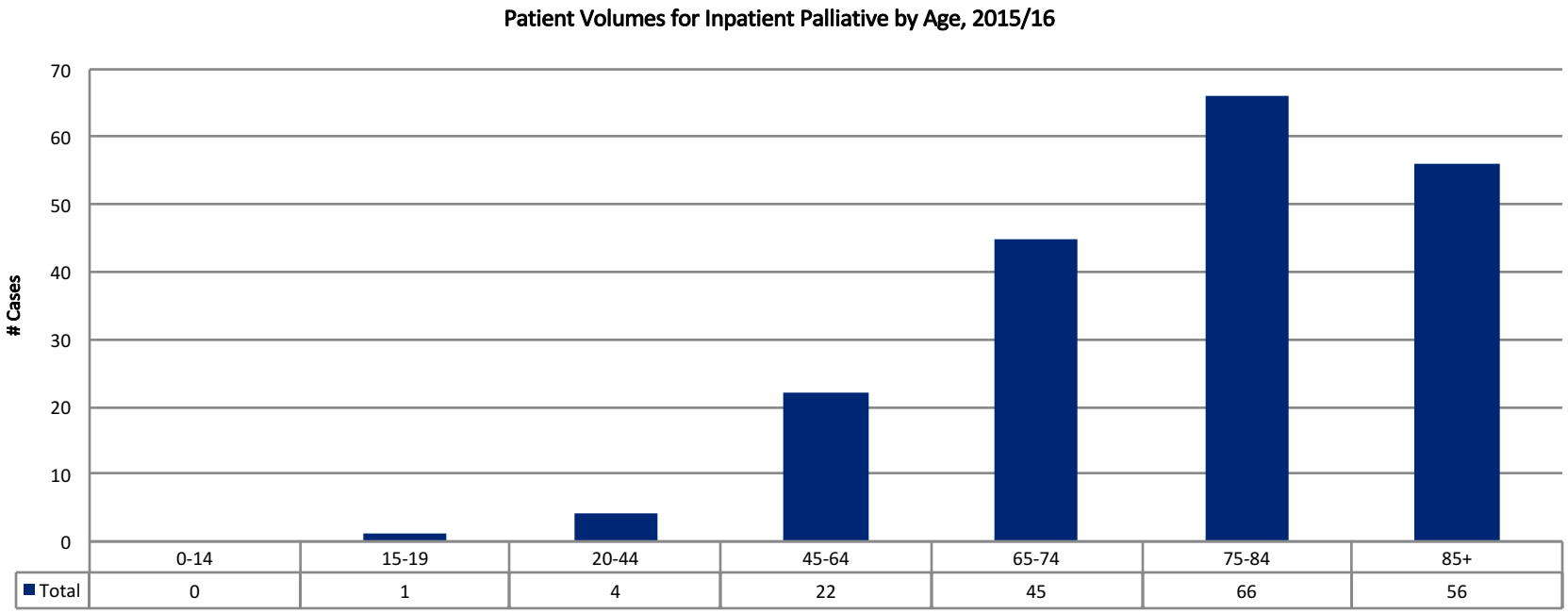
- Total patient days for inpatient paediatric patients are expected to decrease by 22.8% between 2015/16 and 2040/41

Source: Intellihealth Ontario

Inpatient Palliative

Clinical Utilization

Patient Volumes for Inpatient Palliative



Key Highlights

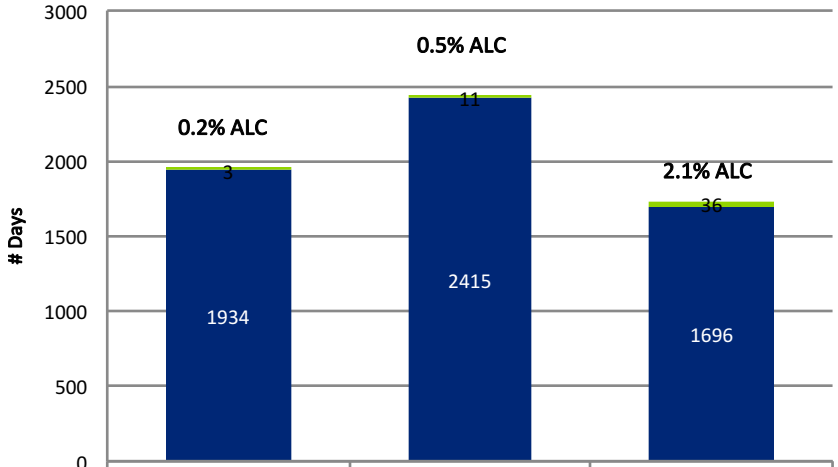
- There were 194 discharges from inpatient medical beds in 2015/16
- 62.9% of discharges were patients age 75+

Source: Intellihealth Ontario

Clinical Utilization

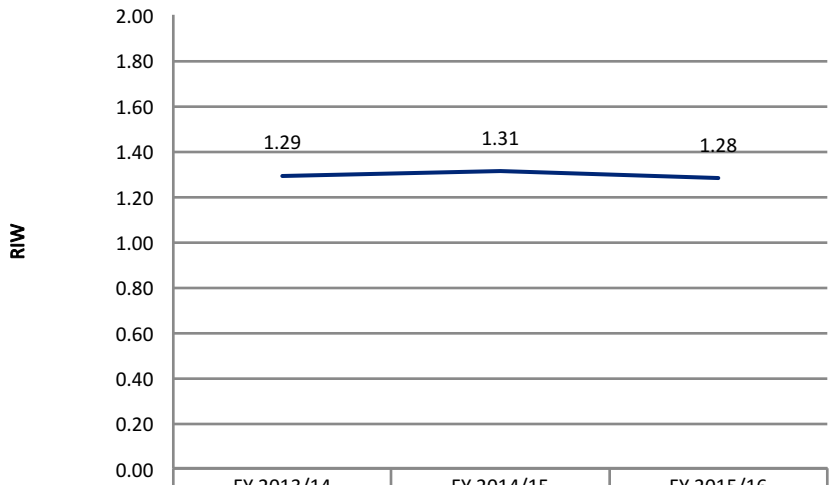
Acute / ALC Days / RIW for Inpatient Palliative

Acute/ALC Inpatient Palliative Days, 2013/14 to 2015/16



	FY 2013/14	FY 2014/15	FY 2015/16
ALC	3	11	36
Acute	1934	2415	1696

Average Weighted Case for Inpatient Palliative, 2013/14 to 2015/16



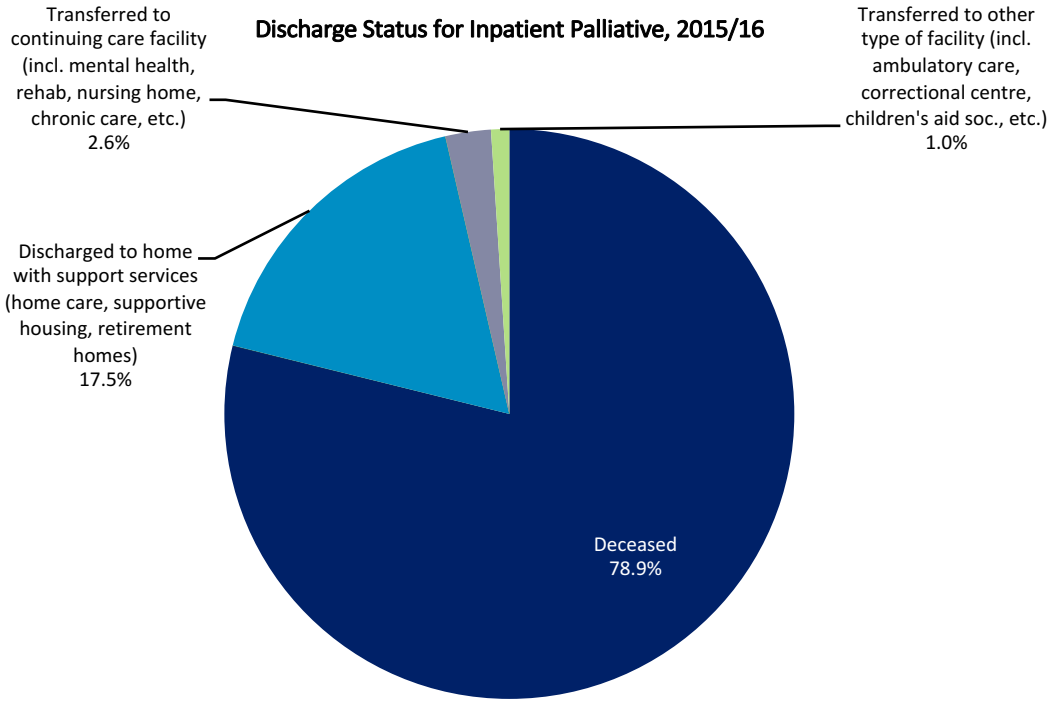
	FY 2013/14	FY 2014/15	FY 2015/16
Palliative	1.29	1.31	1.28

Key Highlights

- The number of acute days for NHH decreased by 12.3% between 2013/14 and 2015/16 (by 238 inpatient days)
- The average RIW for palliative care patients at NHH has remained steady over the past three years at 1.3, slightly higher than the hospital average of 1.0.

Discharge Status

Proportion for Inpatient Palliative



Key Highlights

- Most palliative patients, if discharged home, are discharged with support services
- Approximately one fifth (17.5%) of patients are discharged home with support services such as home care, or to a retirement home or supportive housing

Source: Intellihealth Ontario

Referral Patterns

Cases by Residence for Inpatient Palliative

Patient Volumes for Inpatient Palliative by Residence , 2015/16

Patient Municipality	# Discharges	% Total Cases
COBOURG	95	49.0%
PORT HOPE	54	27.8%
CRAMAHE	12	6.2%
HAMILTON	12	6.2%
ALNWICK/HALDIMAND	8	4.1%
BRIGHTON	8	4.1%
OTONABEE-S MONAGHAN	2	1.0%
KAWARTHA LAKES	1	0.5%
OTHER	2	1.0%

Key Highlights

- Nearly half (49.0%) of inpatient palliative cases at NHH are from residents of Cobourg

Source: Intellihealth Ontario

Market Share

3-Year Trend for Inpatient Palliative

Market Share Trend for Inpatient Palliative Services, 2013/14 to 2015/16

	2013/14			2014/15			2015/16			
Geography	Total Cases	For NHH	% for NHH	Total Cases	For NHH	% for NHH	Total Cases	For NHH	% for NHH	Absolute Change at NHH*
Cobourg	94	93	98.9%	160	158	98.8%	97	95	97.9%	-1.0%
Port Hope	68	65	95.6%	65	63	96.9%	55	54	98.2%	2.6%
Cramahe	17	16	94.1%	19	17	89.5%	16	12	75.0%	-19.1%
Alnwick/Haldimand	14	13	92.9%	13	13	100.0%	10	8	80.0%	-12.9%
Hamilton	11	10	90.9%	13	13	100.0%	14	12	85.7%	-5.2%
TOTAL	204	197	96.6%	270	264	97.8%	192	181	94.3%	-2.3%

**Change from 2013/14 to 2015/16*

Key Highlights

- Market share for inpatient palliative patients is very high, but has decreased slightly since FY2013/14
- NHH captures the highest inpatient palliative market share among residents of Port Hope (98.2%) and Cobourg (97.9%)
- NHH captures a large portion of the inpatient palliative patients from the Township of Alnwick/Haldimand (80% in FY 2015/16, decreased from 100% in FY2014/15). As this municipality surrounds the Alderville First Nation community, it may be important to consider in planning for palliative programs to meet the needs of this community.
- NHH provides the local population with 94.3% of their required palliative care services in 2015/16, indicating that there is not significant market share to be repatriated going forward

Source: Intellihealth Ontario

Market Share

Detailed Cases for Inpatient Palliative

Market Share for Inpatient Palliative Services, 2015/16

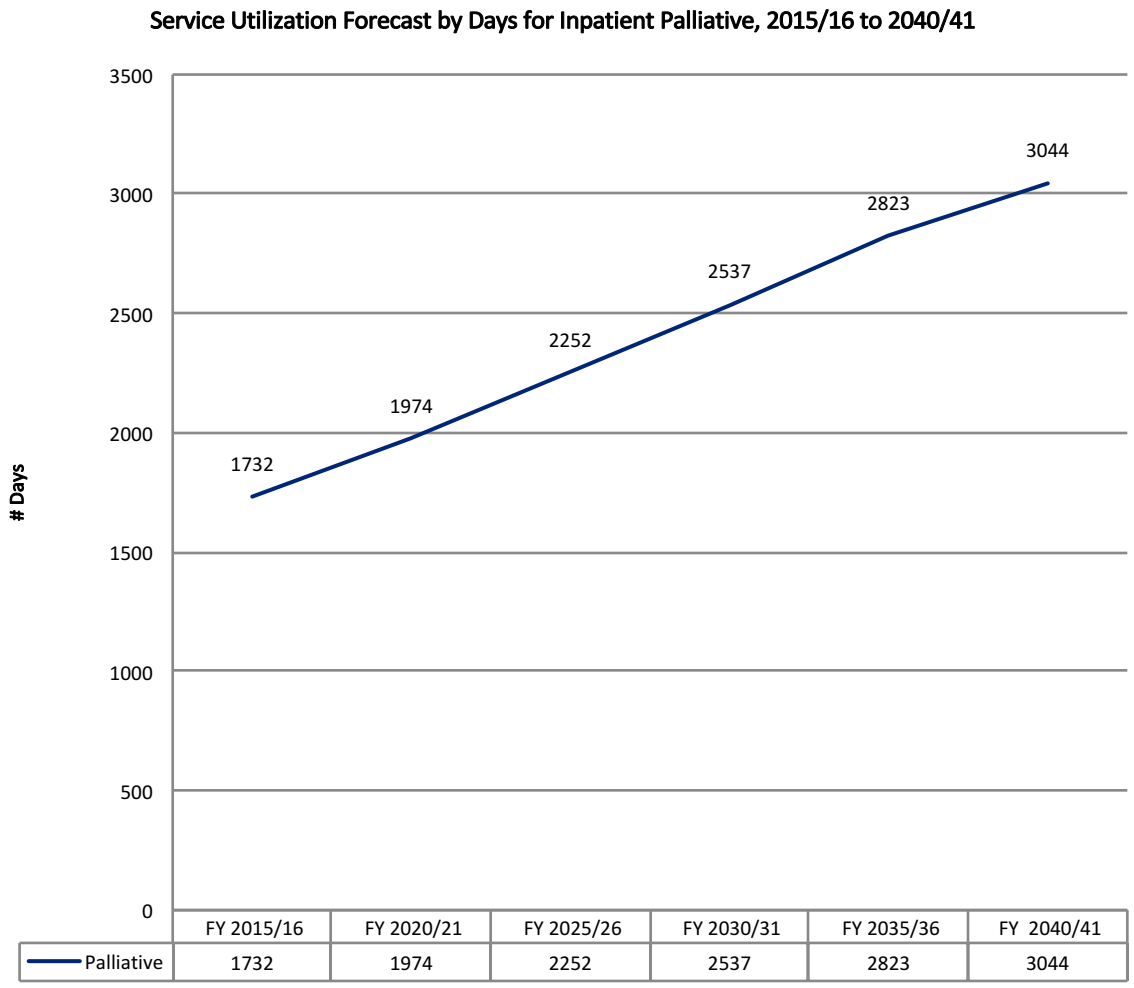
	Summary for NHH			Other NE Cluster Hospitals					Other Regions				
Patient Municipality	Total Discharges	NHH	%Share - NHH	RMH	PRHC	HHHS	CMH	CELHIN-Other	Toronto-Other	Toronto-Teaching	Kingston	Ottawa	Other
PORT HOPE	55	54	98.2%	-	1	-	-	-	-	-	-	-	-
COBOURG	97	95	97.9%	-	-	-	-	1	-	1	-	-	-
HAMILTON	14	12	85.7%	-	-	-	-	-	-	-	-	-	2
ALNWICK/HALDIMAND	10	8	80.0%	-	1	-	1	-	-	-	-	-	-
CRAMAHE	16	12	75.0%	-	-	-	2	-	-	-	-	-	2
BRIGHTON	22	8	36.4%	-	-	-	-	-	-	-	-	-	14
OTONABEE-S MONAGHAN	18	2	11.1%	-	16	-	-	-	-	-	-	-	-
KAWARTHA LAKES	189	1	0.5%	144	31	3	-	6	-	2	-	-	1

Key Highlights

- Only a very small proportion of patients in the NHH catchment do not receive their inpatient palliative care at NHH in 2015/16

Future Projections

Service Utilization Forecast for Inpatient Palliative



Key Highlights

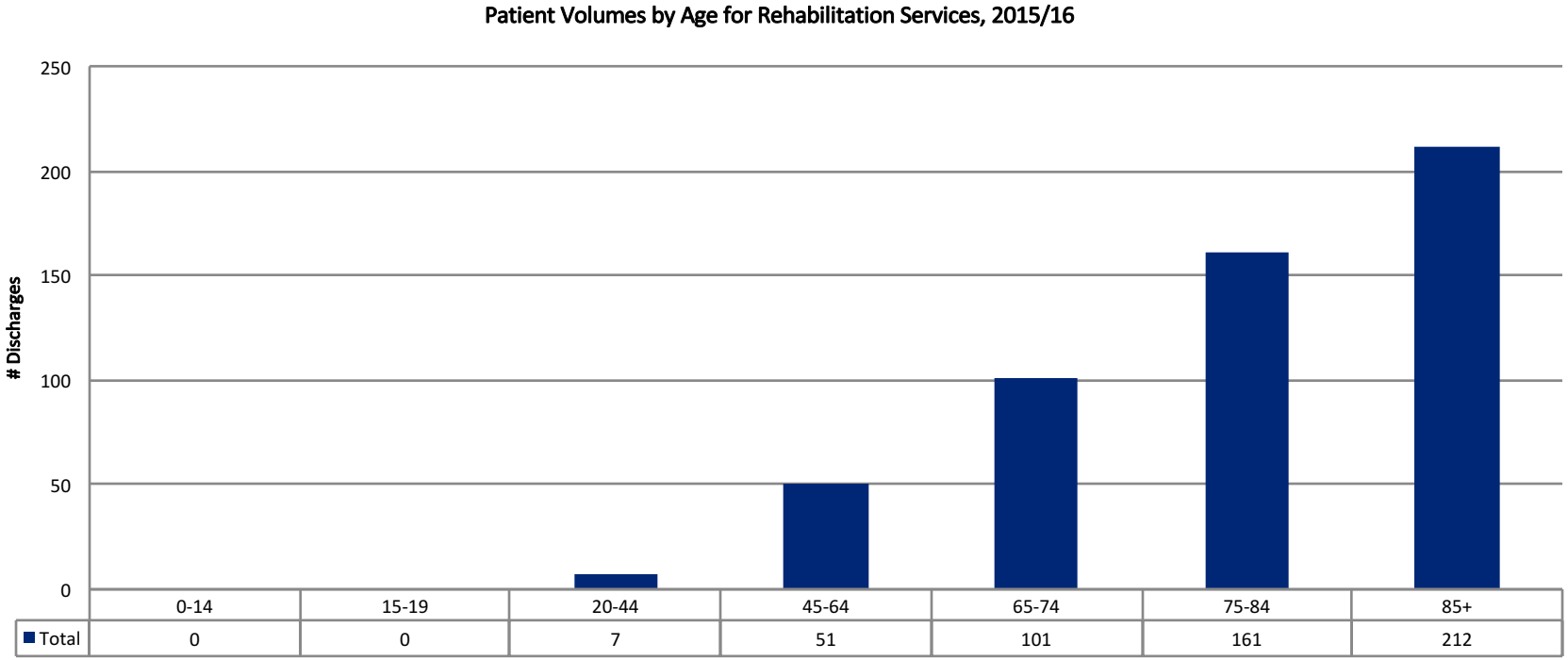
- Total patient days for inpatient palliative patients are expected to increase by 75.8% between 2015/16 and 2040/41
- Discussion may consider the influence that end of life regulations may have on the outcomes of these projections
- With this increase, assuming 95% occupancy, there is anticipated to be a requirement for 9 beds by FY2040/41 (this is an increase from 5 beds in FY2015/16)

Source: Intellihealth Ontario

Rehabilitation Services

Clinical Utilization

Patient Volumes for Rehabilitation Services

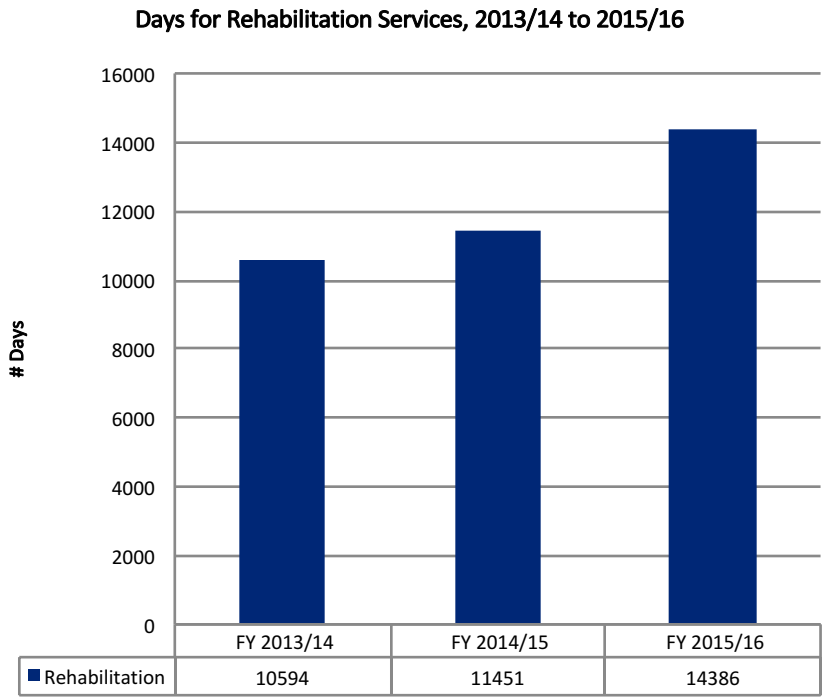


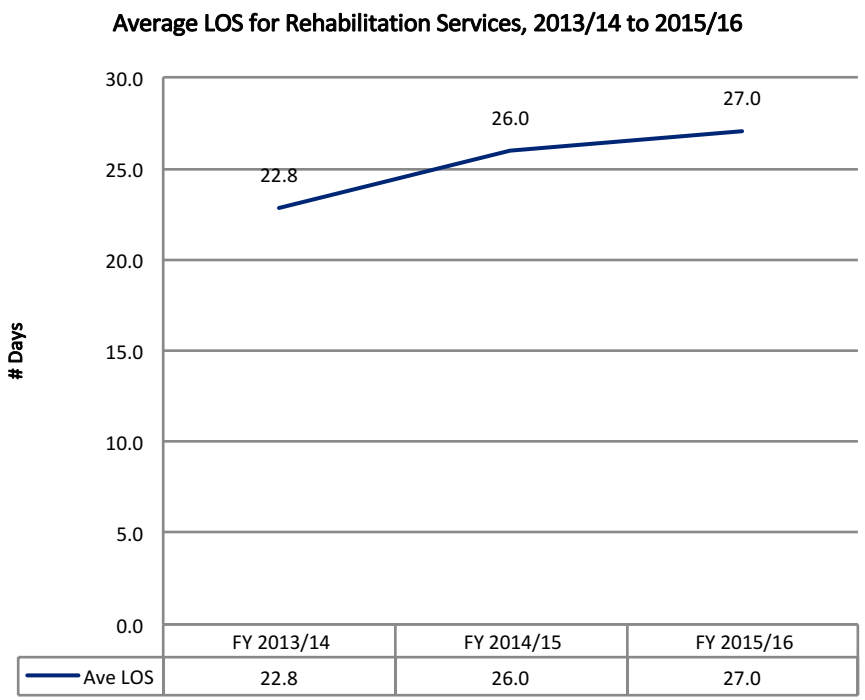
Key Highlights

- There were 532 discharges for patients identified as receiving rehabilitation services in 2015/16
- 89.1% of discharges were for patients age 65+

Clinical Utilization

Average LOS for Rehabilitation Services





Key Highlights

- There was a 35.8% increase in the number of rehabilitation days at NHH in 2015/16 when compared to 2013/14; increasing from 10,594 days to 14,386 days
- The average length of stay (LOS) increased by 4.2 days between 2013/14 and 2015/16

Source: Intellihealth Ontario

Referral Patterns

Cases by Residence for Rehabilitation Services

Patient Volumes for Inpatient Rehabilitation by Residence, 2015/16

Patient Municipality	# Discharges	% Total Cases
COBOURG	263	49.4%
PORT HOPE	129	24.2%
CRAMAHE	39	7.3%
HAMILTON	37	7.0%
ALNWICK/HALDIMAND	29	5.5%
OTHER	35	6.2%

Key Highlights

- Over half (63.6%) of patients at NHH who are receiving rehabilitation services are residents of Peterborough

Market Share

3-Year Trend for Rehabilitation Services

Market Share Trend for Rehabilitation Services, 2013/14 to 2015/16

	2013/14			2014/15			2015/16			Delta*
Geography	Total Cases	For NHH	% for NHH	Total Cases	For NHH	% for NHH	Total Cases	For NHH	% for NHH	Absolute Change*
COBOURG	280	261	93.2%	266	252	94.7%	263	240	91.3%	-2.0%
PORT HOPE	125	115	92.0%	108	95	88.0%	139	126	90.6%	-1.4%
ALNWICK/HALDIMAND	27	25	92.6%	27	21	77.8%	31	28	90.3%	-2.3%
HAMILTON	29	23	79.3%	43	28	65.1%	44	34	77.3%	-2.0%
CRAMAHE	18	15	83.3%	20	14	70.0%	41	36	87.8%	4.5%
TRENT HILLS	16	5	31.3%	9	3	33.3%	13	4	30.8%	-0.5%
OTONABEE-S MONAGHAN	26	2	7.7%	39	4	10.3%	25	1	4.0%	-3.7%
BRIGHTON	32	2	6.3%	42	7	16.7%	33	7	21.2%	15.0%
STIRLING-RAWDON	29	1	3.4%	24	2	8.3%	22	2	9.1%	5.6%
TOTAL	1,945	457	23.5%	1,914	435	22.7%	2,194	491	22.4%	-1.1%

**Change from 2013/14 to 2015/16*

Key Highlights

- Market share for rehabilitation services at NHH has decreased by 1.1% since 2013/14
- NHH captures the highest number of patients for rehabilitation services among residents of Cobourg

Source: Intellihealth Ontario

Market Share

Detailed Cases for Rehabilitation Services

Market Share for Inpatient Rehabilitation Services, 2015/16

	Summary for NHH			Other NE Cluster Hospitals				Other Regions					
Patient Municipality	Total	NHH	% for NHH	RMH	PRHC	HHHS	CMH	CE LHIN-Other	Tor-Other	Tor-Teaching	Kingston	Ottawa	Other
COBOURG	263	240	91.3%	-	7	-	-	3	-	13	-	-	-
PORT HOPE	139	126	90.6%	-	2	-	-	3	4	4	-	-	-
CRAMAHE	41	36	87.8%	-	3	-	-	-	1	1	-	-	-
HAMILTON	44	34	77.3%	-	3	-	-	-	1	6	-	-	-
ALNWICK/HALDIMAND	31	28	90.3%	-	1	-	-	-	1	1	-	-	-
BRIGHTON	33	7	21.2%	-	1	-	-	-	2	2	-	-	-
CLARINGTON	223	6	2.7%	1	1	-	-	172	10	31	-	-	-
TRENT HILLS	13	4	30.8%	-	4	-	-	-	1	3	-	-	-
STIRLING-RAWDON	22	2	9.1%	-	5	-	-	-	2	3	-	-	-
OSHAWA	568	2	0.4%	-	2	-	-	473	21	68	-	-	-
HAVELOCK-BELMONT-METH	9	1	11.1%	-	4	-	-	-	1	3	-	-	-
MARMORA AND LAKE	16	1	6.3%	-	4	-	-	-	3	1	-	-	-
OTONABEE-S MONAGHAN	25	1	4.0%	-	18	-	-	2	1	3	-	-	-

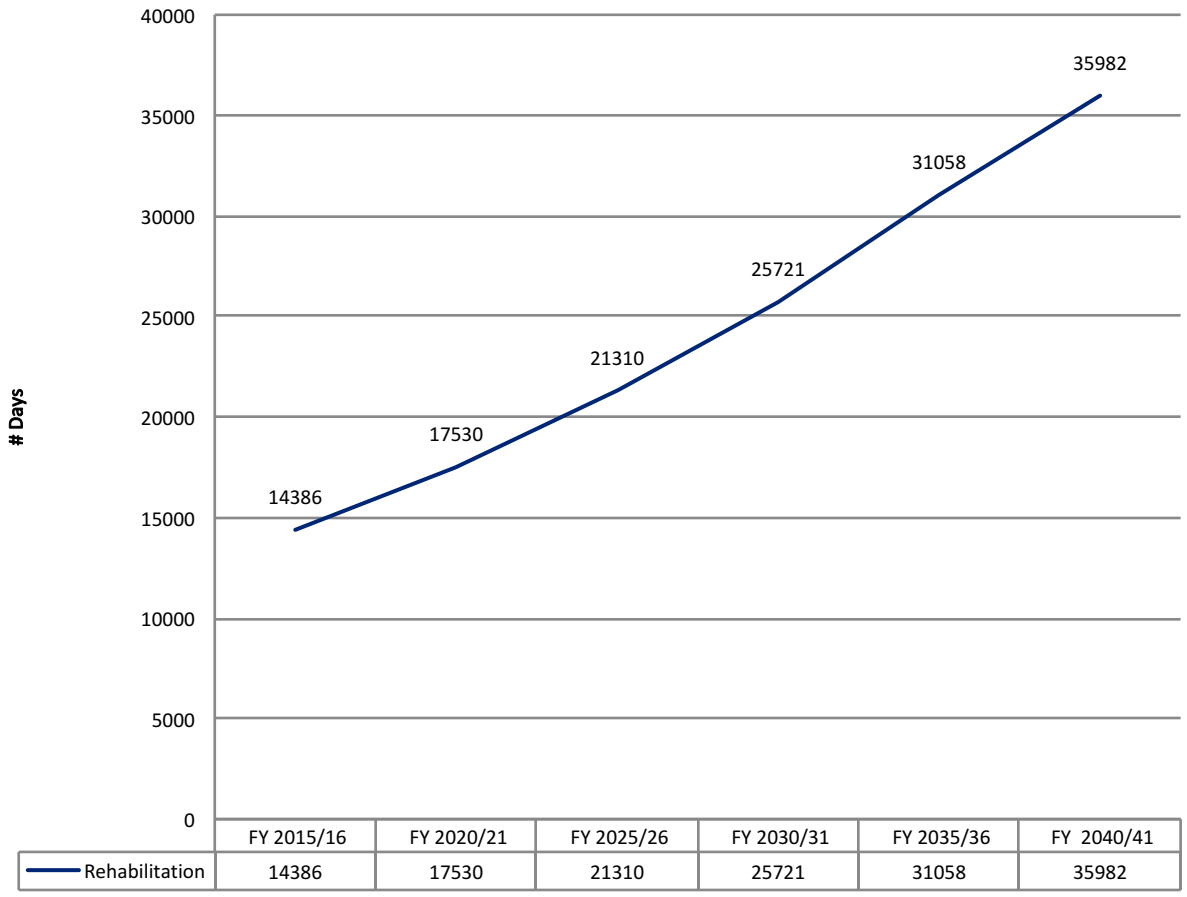
Key Highlights

- For the patients that do not receive their rehabilitation services from NHH in 2015/16, PRHC or Toronto hospitals (including teaching hospitals) are the most common alternative locations to provide care to these patients

Future Projections

Service Utilization Forecast for Rehabilitation Services

Inpatient Service Utilization Forecast by Days for Inpatient Rehabilitation Services, 2015/16 to 2040/41



	FY 2015/16	FY 2020/21	FY 2025/26	FY 2030/31	FY 2035/36	FY 2040/41
Rehabilitation	14386	17530	21310	25721	31058	35982

Key Highlights

- Total patient days for rehabilitation services are expected to increase by 150.1% between 2015/16 and 2040/41
- With this increase, assuming 95% occupancy, there is anticipated to be a requirement for 104 beds by 2040/41 (this is an increase from 41 beds in 2015/16)

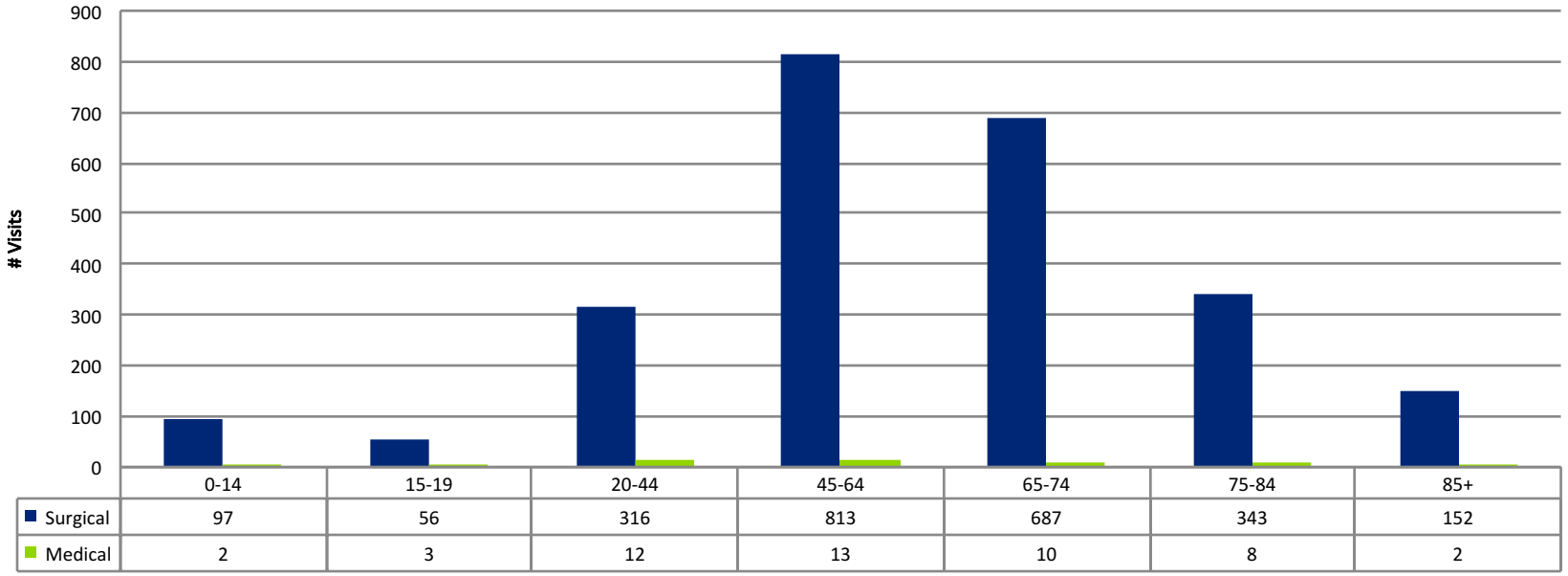
Source: Intellihealth Ontario

Outpatient Medical and Surgery Programs

Clinical Utilization

Patient Visit Volumes for Outpatient Medical and Surgical

Patient Volumes for Outpatient Medical and Surgical Programs by Age, 2015/16



	0-14	15-19	20-44	45-64	65-74	75-84	85+
Surgical	97	56	316	813	687	343	152
Medical	2	3	12	13	10	8	2

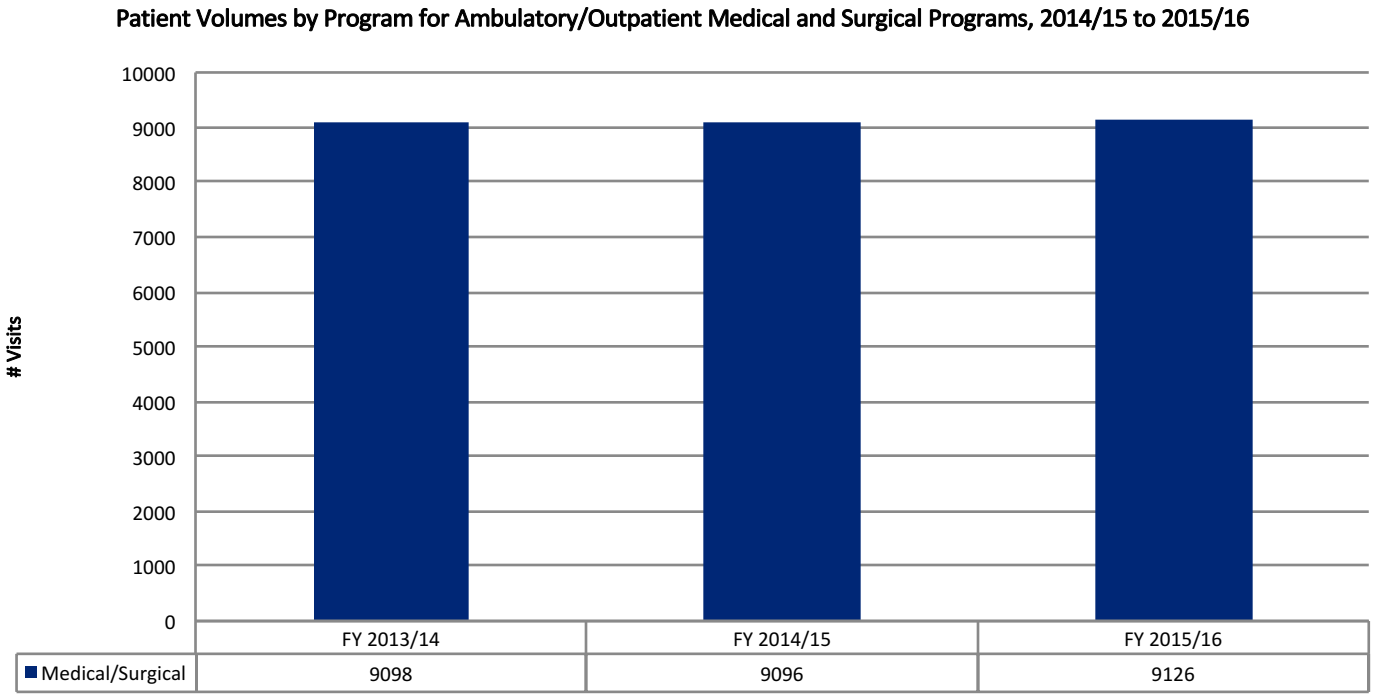
Key Highlights

- There were 4549 visits to outpatient clinics in 2015/16, 75 of which were designated as “medical” visits (typically cases in which the surgical procedure was not performed)

Source: Intellihealth Ontario

Clinical Utilization

Patient Visit Volumes for Outpatient Medical and Surgical



Key Highlights

- Both medical and surgical programs have offered consistent volumes of services per year over the past three years. There has only been a change by 0.3% in volumes between 2013/14 and 2015/16
- The surgical program at NHH provides the highest volume of patient visits compared to the other ambulatory/outpatient services assessed in this report. There were 8,972 patient visits reported in 2015/16, with renal dialysis reporting 6,335 as the next highest in patient volumes

Source: Intellihealth Ontario

Referral Patterns

Cases by Residence for Outpatient Medical and Surgical

Patient Visit Volumes for Outpatient Medical and Surgical by Residence, 2015/16

Patient Municipality	# Visits	% Total Visits
COBOURG	1520	33.3%
PORT HOPE	801	17.6%
CRAMAHE	307	6.7%
HAMILTON	305	6.7%
ALNWICK/HALDIMAND	270	5.9%
BRIGHTON	188	4.1%
PETERBOROUGH	124	2.7%
WELLAND	123	2.7%
TRENT HILLS	102	2.2%
OTHER	823	18.0%

Key Highlights

- The majority of outpatient cases at NHH are from residents of Cobourg

Source: Intellihealth Ontario

Market Share

3-Year Trend for Outpatient Medical and Surgical

Market Share Trend for Outpatient Medical and Surgical Services, 2013/14 to 2015/16

	2013/14			2014/15			2015/16			
Geography	Total Visits	For NHH	% for NHH	Total Visits	For NHH	% for NHH	Total Visits	For NHH	% for NHH	Absolute Change at NHH*
Cobourg	2,900	1,613	56%	3,008	1,579	52%	3,094	1,520	49%	-6%
Alnwick/Haldimand	1,849	833	45%	1,910	819	43%	1,953	801	41%	-4%
Port Hope	512	241	47%	577	250	43%	624	270	43%	-4%
Hamilton	721	246	34%	790	320	41%	825	307	37%	3%
Cramahe	761	327	43%	818	325	40%	839	305	36%	-7%
TOTAL	6,743	3,260	48%	7,103	3,293	46%	7,335	3,203	44%	-5%

**Change from 2013/14 to 2015/16*

Key Highlights

- Market share for surgical/medical Outpatients has decreased by 5% since 2013/14
- NHH captures the highest surgical/medical Outpatient market share among residents of Cobourg, with 44% of the local population receiving their surgical/medical Outpatient care at NHH in 2015/16

Market Share

Detailed Cases for Outpatient Medical

Market Share for Outpatient Medical Services, 2015/16

	Summary for NHH			Other NE Cluster Hospitals				Other Regions					
Patient Municipality	Total Visits	NHH	%Share - NHH	RMH	PRHC	HHHS	CMH	CELHIN-Other	Toronto-Other	Toronto-Teaching	Kingston	Ottawa	Other
CRAMAHE	32	8	25.0%	-	14	-	-	4	-	-	5	-	1
ALNWICK/HALDIMAND	18	4	22.2%	-	11	-	-	1	-	-	2	-	-
PORT HOPE	74	15	20.3%	1	42	-	-	6	3	5	1	-	1
COBOURG	120	24	20.0%	-	67	-	-	6	3	13	4	-	3
HAMILTON	25	5	20.0%	-	8	-	-	4	-	7	1	-	-
OTONABEE-S MONAGHAN	49	2	4.1%	-	41	-	-	1	-	5	-	-	-
BRIGHTON	91	3	3.3%	-	10	-	1	3	-	2	9	-	63
DYSART ET AL	45	1	2.2%	2	29	-	-	-	6	4	-	-	1
CLARINGTON	328	4	1.2%	2	28	-	-	184	8	94	-	-	8
SELWYN	116	1	0.9%	-	96	-	-	5	1	8	4	-	1
KAWARTHA LAKES	518	3	0.6%	65	339	-	-	40	4	48	9	-	4
QUINTE WEST	279	1	0.4%	-	15	-	1	3	-	4	38	-	217
WHITBY	357	1	0.3%	-	20	-	-	195	15	113	-	-	11
PETERBOROUGH	593	1	0.2%	6	533	-	-	5	11	29	6	-	2

Key Highlights

- For patients not receiving their care at NHH in 2015/16, RMH or PRHC are the next most frequently visited hospital for medical Outpatient services
- Local residents also attended other hospitals in the CE LHIN, as well as a relatively small portion attended hospitals in Toronto or Kingston

Market Share

Detailed Cases for Outpatient Surgical

Market Share for Outpatient Surgical Services, 2015/16

	Summary for NHH			Other NE Cluster Hospitals				Other Regions					
Patient Municipality	Total Visits	NHH	%Share - NHH	RMH	PRHC	HHHS	CMH	CELHIN-Other	Toronto-Other	Toronto-Teaching	Kingston	Ottawa	Other
COBOURG	2,974	1,496	50.3%	3	615	-	10	468	62	60	42	9	108
ALNWICK/HALDIMAND	606	266	43.9%	1	108	-	5	114	36	34	11	-	31
PORT HOPE	1,879	786	41.8%	6	414	-	5	478	41	108	14	-	26
CRAMAHE	793	299	37.7%	-	127	-	32	127	7	13	25	2	161
HAMILTON	814	300	36.9%	1	135	-	2	178	42	84	6	2	64
BRIGHTON	1,971	185	9.4%	-	66	-	171	82	22	23	101	6	1,315
TRENT HILLS	1,986	102	5.1%	12	930	-	492	86	18	57	66	6	215
CARLOW/MAYO	76	3	3.9%	-	18	-	-	10	-	-	-	3	42
OTONABEE-S MONAGHAN	895	29	3.2%	5	776	-	6	41	10	19	5	-	4
MADOC	145	4	2.8%	-	14	-	7	7	2	2	19	2	87
TUDOR AND CASHEL	115	3	2.6%	-	26	-	4	-	1	3	11	-	67
ASPHODEL-NORWOOD	489	11	2.2%	2	343	-	58	20	11	27	3	-	14
Other	97,976	505	22.9%	5,642	19,885	- -	968	42,068	2,731	4,481	1,235	110	19,531

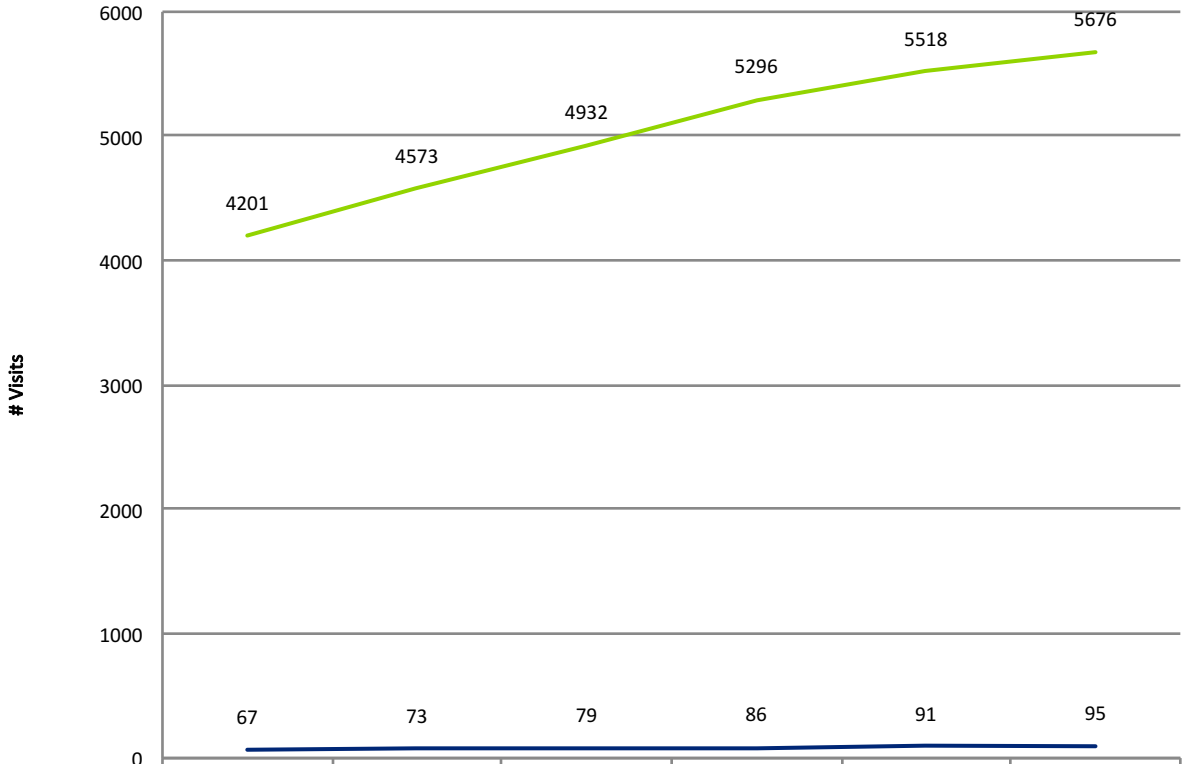
Key Highlights

- For patients not receiving their care at NHH in 2015/16, RMH or PRHC are the next most frequently visited hospital for surgical Outpatient services
- Local residents attended other hospitals in the CE LHIN, as well as a relatively small portion attended hospitals in Toronto, Kingston or Ottawa

Future Projections

Service Utilization Forecast for Outpatient Medical and Surgical

Ambulatory/Outpatient Medical and Surgical Service Utilization Forecast by Discharges, 2015/16 to 2040/41



	FY 2015/16	FY 2020/21	FY 2025/26	FY 2030/31	FY 2035/36	FY 2040/41
Medical	67	73	79	86	91	95
Surgical	4201	4573	4932	5296	5518	5676

Key Highlights

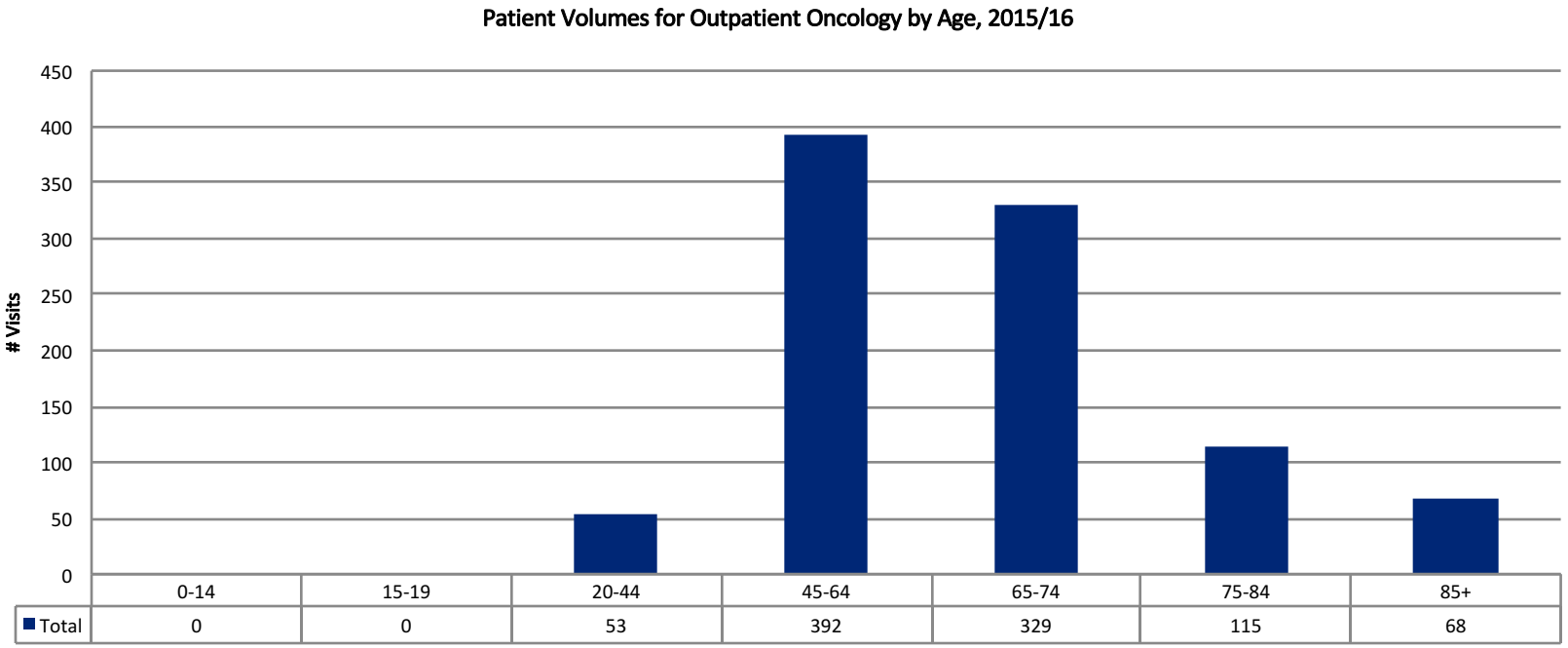
- Ambulatory care volumes are expected to increase by 2040/41, with ambulatory medical and surgical volumes anticipated to increase by 35.2% on average
- Ambulatory care volumes for medical services are anticipated to grow by 42.0% (equal to 95 visits) by 2040/41; whereas surgical services are anticipated to grow by 35.1% (equal to 1,475 visits)

Source: Intellihealth Ontario

Outpatient Oncology

Clinical Utilization

Patient Visit Volumes for Outpatient Oncology



	0-14	15-19	20-44	45-64	65-74	75-84	85+
Total	0	0	53	392	329	115	68

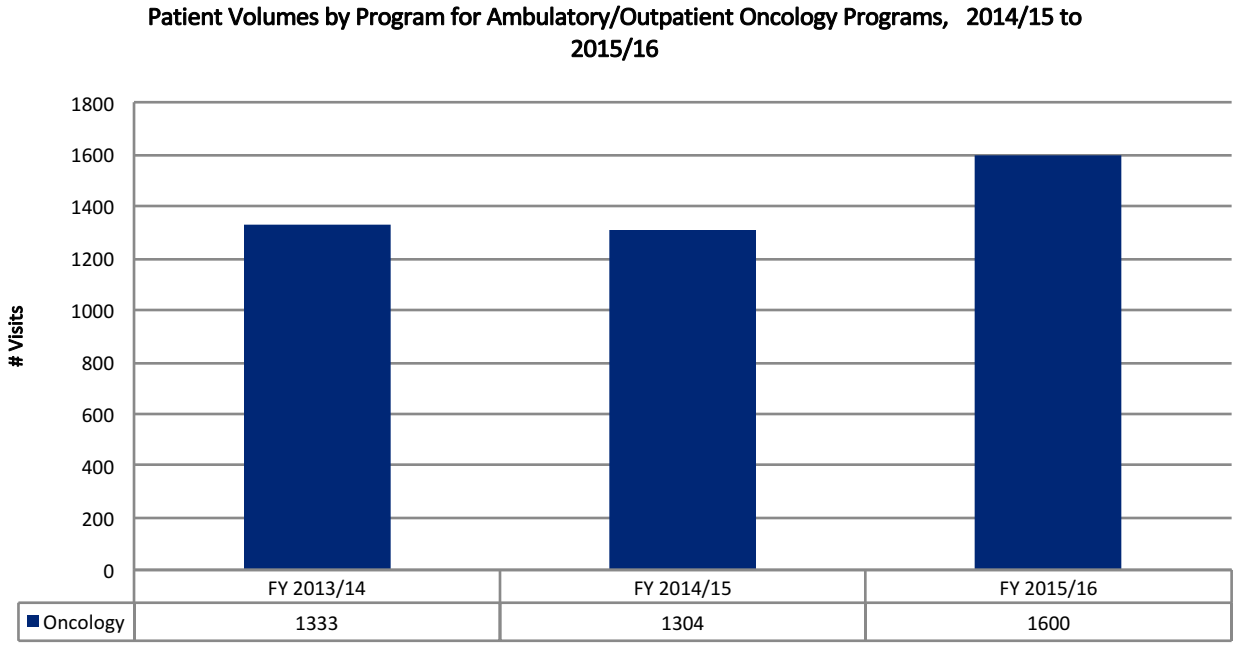
Key Highlights

- There were 1600 visits to the outpatient oncology program in 2015/16
- The highest proportion of the population that used oncology services were within the 45-74 age range

Source: Intellihealth Ontario

Clinical Utilization

Patient Visit Volumes for Outpatient Oncology



Key Highlights

- There has been an increase in the number of oncology patients seen through outpatient services at NHH in 2015/16 (20..0%, equal to 267 patient visits)

Source: Intellihealth Ontario

Referral Patterns

Cases by Residence for Outpatient Oncology

Patient Visit Volumes for Outpatient Oncology by Residence , 2015/16

Patient Municipality	# Visits	% Total Visits
COBOURG	2906	39.1%
PORT HOPE	1903	17.3%
HAMILTON	460	12.3%
ALNWICK/HALDIMAND	295	8.4%
CRAMAHE	280	6.3%
QUINTE WEST	3	4.7%
BRIGHTON	58	4.3%
TRENT HILLS	229	3.3%
BELLEVILLE	0	2.3%
OTHER	34	2.1%

Key Highlights

- The majority of outpatient visits at NHH are from residents of Cobourg

Market Share

3-Year Trend for Outpatient Oncology

Market Share Trend for Outpatient Oncology Services, 2013/14 to 2015/16

	2013/14			2014/15			2015/16			
Geography	Total Visits	For NHH	% for NHH	Total Visits	For NHH	% for NHH	Total Visits	For NHH	% for NHH	Absolute Change at NHH*
Alnwick/Haldimand	431	120	27.8%	442	98	22.2%	404	134	33.2%	**5.4%**
Cobourg	2,419	551	22.8%	2,375	480	20.2%	2,569	626	24.4%	**1.6%**
Port Hope	1,335	252	18.9%	1,295	184	14.2%	1,555	276	17.7%	**-1.2%**
Cramahe	547	95	17.4%	665	110	16.5%	527	101	19.2%	**1.8%**
Hamilton	732	66	9.0%	681	157	23.1%	1,075	197	18.3%	**9.3%**
TOTAL	5,464	1,084	19.8%	5,458	1,029	18.9%	6,130	1,334	21.8%	**2.0%**

**Change from 2013/14 to 2015/16*

Key Highlights

- Only one-fifth of local residents are receiving outpatient oncology services at their local hospital.
- Market share for oncology Outpatients has increased by 2% since 2013/14
- NHH captures the highest oncology Outpatient market share among residents of Alnwick/Haldimand, with 21.8% of the local population receiving their oncology Outpatient care at NHH in 2015/16

Source: Intellihealth Ontario

Market Share

Detailed Cases for Outpatient Oncology

Market Share for Outpatient Oncology Services, 2015/16

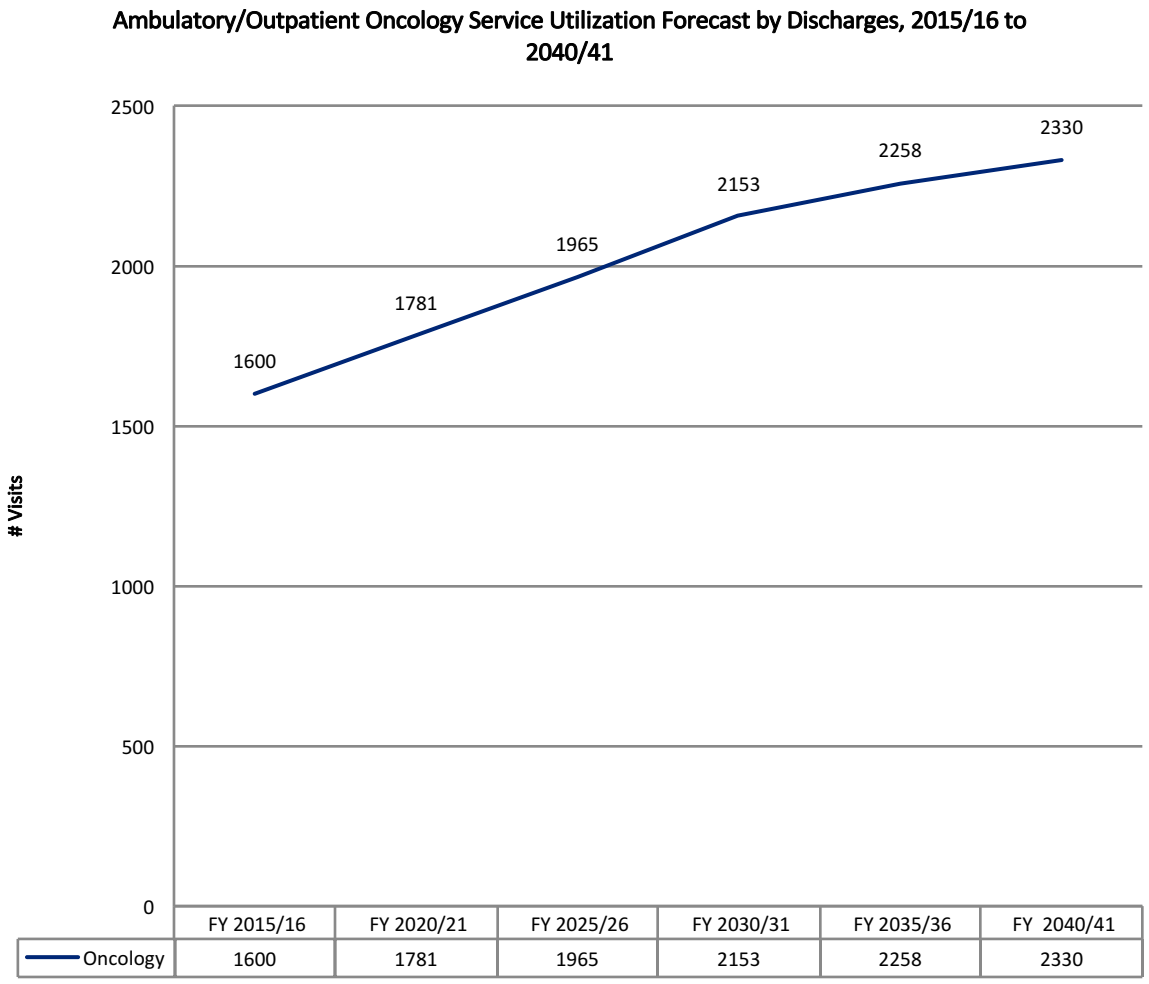
	Summary for NHH			Other NE Cluster Hospitals					Other Regions				
Patient Municipality	Total Visits	NHH	%Share - NHH	RMH	PRHC	HHHS	CMH	CELHIN-Other	Toronto-Other	Toronto-Teaching	Kingston	Ottawa	Other
ALNWICK/HALDIMAND	404	134	33.2%	-	14	-	-	170	2	6	78	-	-
COBOURG	2,569	626	24.4%	-	3	-	-	1,374	4	306	119	-	104
CRAMAHE	527	101	19.2%	-	17	-	-	213	2	64	126	-	4
HAMILTON	1,075	197	18.3%	-	72	-	-	541	-	200	64	-	1
PORT HOPE	1,555	276	17.7%	-	116	-	-	829	3	269	51	-	11
BRIGHTON	1,376	68	4.9%	-	3	-	-	238	16	117	744	-	190
TRENT HILLS	1,146	53	4.6%	-	277	-	-	368	2	67	326	34	19
QUINTE WEST	3,188	75	2.4%	-	-	-	-	92	2	110	2,090	8	811
HAVELOCK-BELMONT-METH	505	7	1.4%	-	152	-	-	232	-	79	14	-	21
BELLEVILLE	4,903	36	0.7%	-	5	-	-	24	1	102	3,217	-	1,518
SELWYN	1,742	3	0.2%	-	550	-	-	837	2	265	18	12	52
CLARINGTON	6,017	8	0.1%	-	2	-	-	4,450	20	1,316	27	-	194
PETERBOROUGH	6,124	4	0.1%	-	1,994	-	-	3,228	6	681	183	-	27
AJAX	8,121	1	0.0%	-	-	-	-	5,261	146	2,618	8	1	86

Key Highlights

- For patients not receiving their oncology care at NHH in 2015/16, most residents are attending another CE LHIN hospital. Unlike most other program, PRHC is not the next most frequently visited hospital. This means that oncology patients residing in the NHH catchment area (who collectively had 6,130 outpatient oncology visits in 2015/16) may be travelling longer distances to receive their care.
- Local residents attended other hospitals on a frequent basis, including those in the CE LHIN, Toronto-based hospitals and/or travelled to Kingston

Future Projections

Service Utilization Forecast for Outpatient Oncology



Key Highlights

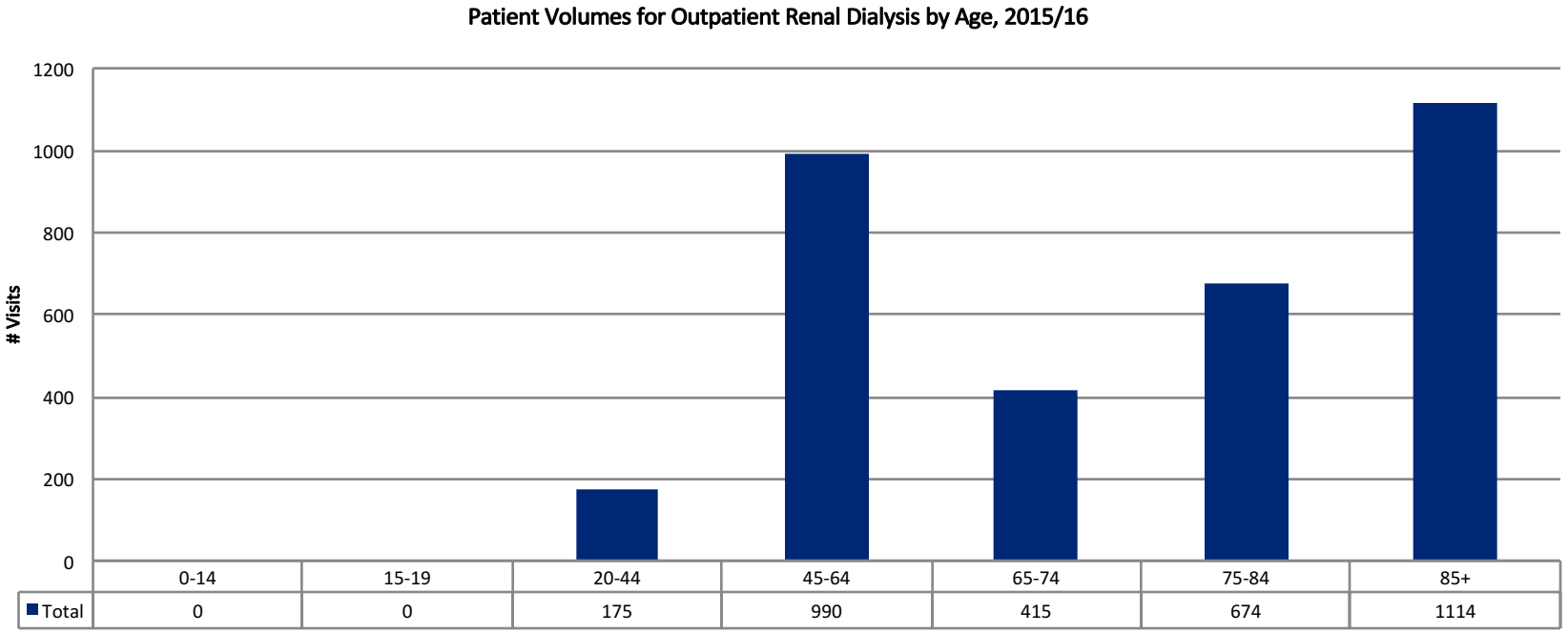
- Ambulatory care volumes are expected to increase by 2040/41, with oncology visits anticipated to increase by 45.6% (equal to 730 visits)
- This is a relatively large growth in program volumes for NHH; however is not the largest growth area for outpatient services at NHH

Source: Intellihealth Ontario

Outpatient Renal Dialysis

Clinical Utilization

Patient Visit Volumes for Outpatient Renal Dialysis

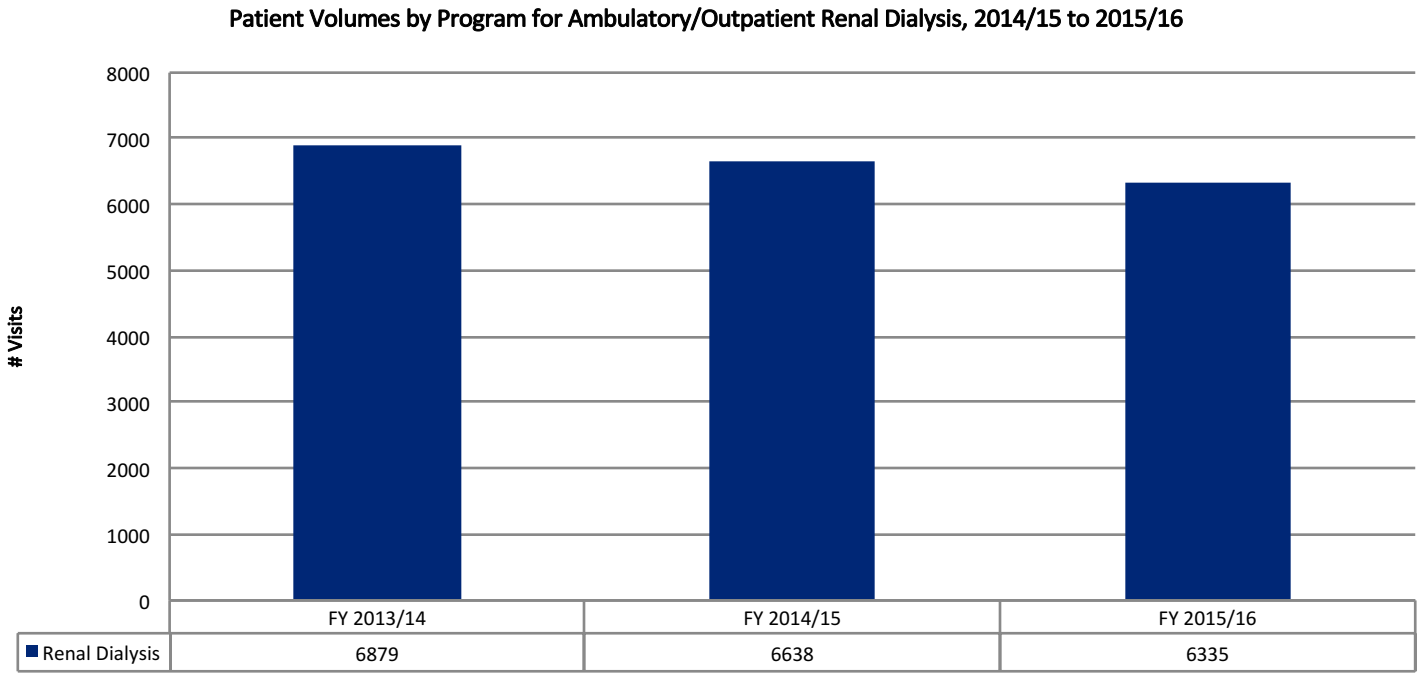


Key Highlights

- There were 6335 visits to the outpatient renal dialysis program in 2015/16; resulting in renal dialysis as being the highest in demand of the 4 services captured
- The majority of services are provided to patients over the age of 45

Clinical Utilization

Patient Visit Volumes for Outpatient Renal Dialysis



Key Highlights

- There has been a slight decline in demand for renal dialysis services since 2013/14 (by 7.9%), which is equal to 544 patient visits

Referral Patterns

Cases by Residence for Outpatient Renal Dialysis

Patient Visit Volumes for Outpatient Renal Dialysis by Residence, 2015/16

Patient Municipality	# Visits	% Total Visits
COBOURG	2906	45.9%
PORT HOPE	1903	30.0%
HAMILTON	460	7.3%
ALNWICK/HALDIMAND	295	4.7%
CRAMAHE	280	4.4%
TRENT HILLS	229	3.6%
CLARINGTON	107	1.7%
BRIGHTON	58	0.9%
PICKERING	37	0.6%
OTHER	60	0.9%

Key Highlights

- The majority of Outpatient renal dialysis visits at NHH are from residents of Cobourg
- Both Cobourg and Port Hope comprise three quarters (75.9%) of renal dialysis patients

Source: Intellihealth Ontario

Market Share

3-Year Trend for Outpatient Renal Dialysis

Market Share Trend for Outpatient Renal Dialysis Services, 2013/14 to 2015/16

	2013/14			2014/15			2015/16			
Geography	Total Visits	For NHH	% for NHH	Total Visits	For NHH	% for NHH	Total Visits	For NHH	% for NHH	Absolute Change at NHH*
Cobourg	3,490	3,273	93.8%	3,511	3,392	96.6%	3,014	2,906	96.4%	**2.6%**
Alnwick/Haldimand	158	148	93.7%	245	229	93.5%	301	295	98.0%	**4.3%**
Hamilton	614	570	92.8%	384	367	95.6%	479	460	96.0%	**3.2%**
Port Hope	2,175	1,885	86.7%	2,022	1,784	88.2%	2,319	1,903	82.1%	**-4.6%**
Cramahe	521	407	78.1%	475	468	98.5%	298	280	94.0%	**15.9%**
TOTAL	6,958	6,283	90.3%	6,637	6,240	94.0%	6,411	5,844	91.2%	**0.9%**

**Change from 2013/14 to 2015/16*

Key Highlights

- Market share for renal dialysis patients has slightly increased by 0.9% since 2013/14
- NHH has a strong market share for renal dialysis, including capturing the majority of residents from: Cobourg (96.4%), Alnwick/Haldimand (98%), Hamilton (96%) and Cramahe (94%)
- 91.2% of the local population receive their renal dialysis services at NHH in 2015/16

Source: Intellihealth Ontario

Market Share

Detailed Cases for Outpatient Renal Dialysis

Market Share for Outpatient Renal Dialysis Services, 2015/16

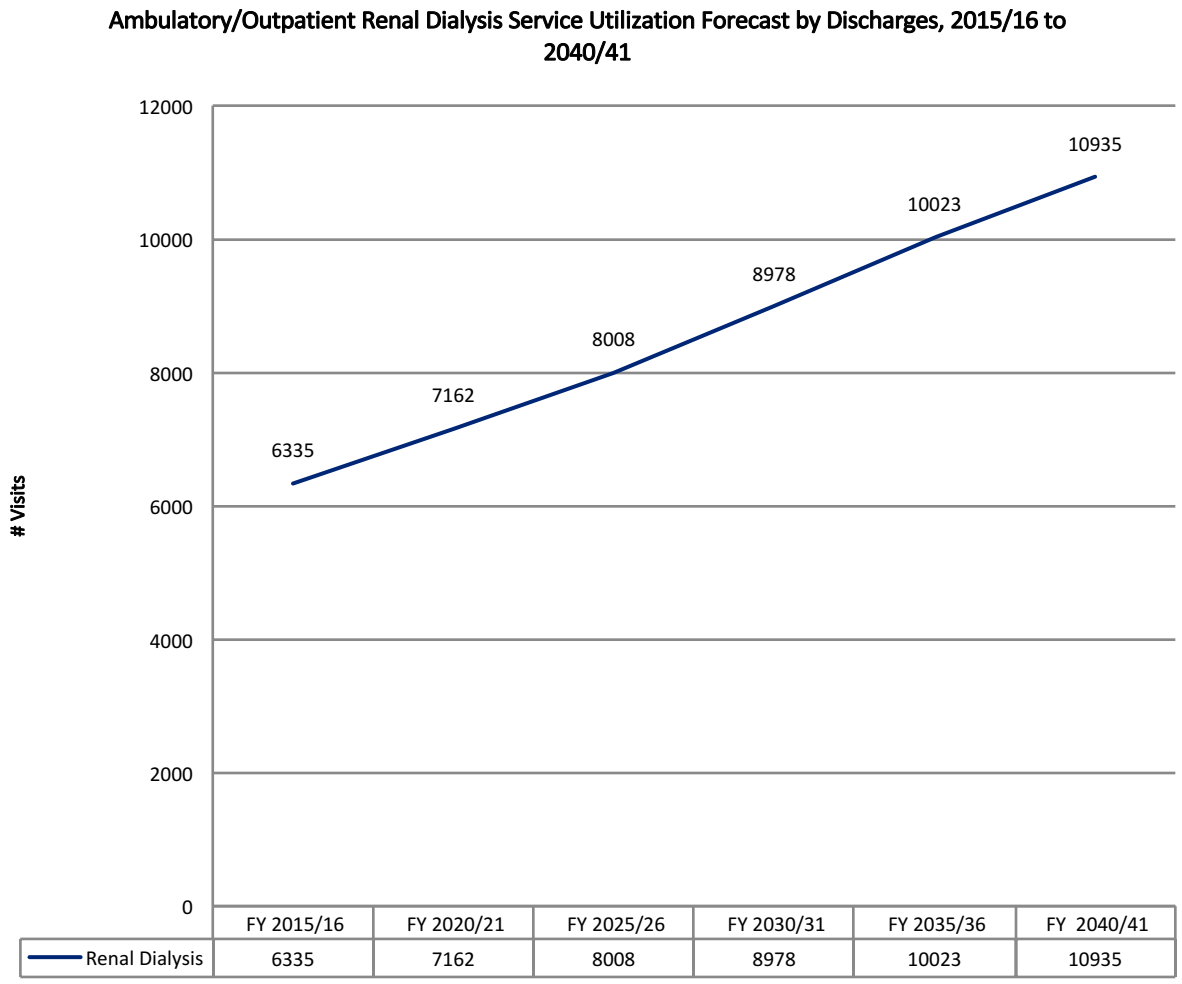
	Summary for NHH			Other NE Cluster Hospitals					Other Regions				
Patient Municipality	Total Visits	NHH	%Share - NHH	RMH	PRHC	HHHS	CMH	CELHIN-Other	Toronto-Other	Toronto-Teaching	Kingston	Ottawa	Other
ALNWICK/HALDIMAND	301	295	98.0%	-	5	-	-	-	-	-	-	-	1
COBOURG	3,014	2,906	96.4%	-	94	-	-	-	-	-	-	-	14
HAMILTON	479	460	96.0%	-	14	-	-	-	4	-	-	1	-
CRAMAHE	298	280	94.0%	-	18	-	-	-	-	-	-	-	-
PORT HOPE	2,319	1,903	82.1%	-	342	-	-	73	-	-	-	-	1
TRENT HILLS	995	229	23.0%	-	589	-	-	5	-	-	157	-	15
BRIGHTON	711	58	8.2%	-	3	-	-	13	-	-	637	-	-
CLARINGTON	4,942	107	2.2%	-	150	-	-	4,451	-	208	-	-	26
PICKERING	4,210	37	0.9%	-	-	-	-	3,708	-	313	-	2	148
AJAX	7,003	8	0.1%	-	-	-	-	6,018	-	943	-	-	34
PETERBOROUGH	9,949	11	0.1%	-	9,919	-	-	-	-	9	6	-	4
QUINTE WEST	3,990	3	0.1%	-	22	-	-	-	-	-	3,965	-	-

Key Highlights

- For patients not receiving their renal dialysis care at NHH in 2015/16, PRHC is the next most frequently visited hospital.
- Local residents attended other hospitals in the CE LHIN, as well as Toronto teaching hospitals in very few cases.

Future Projections

Service Utilization Forecast for Outpatient Renal Dialysis



Key Highlights

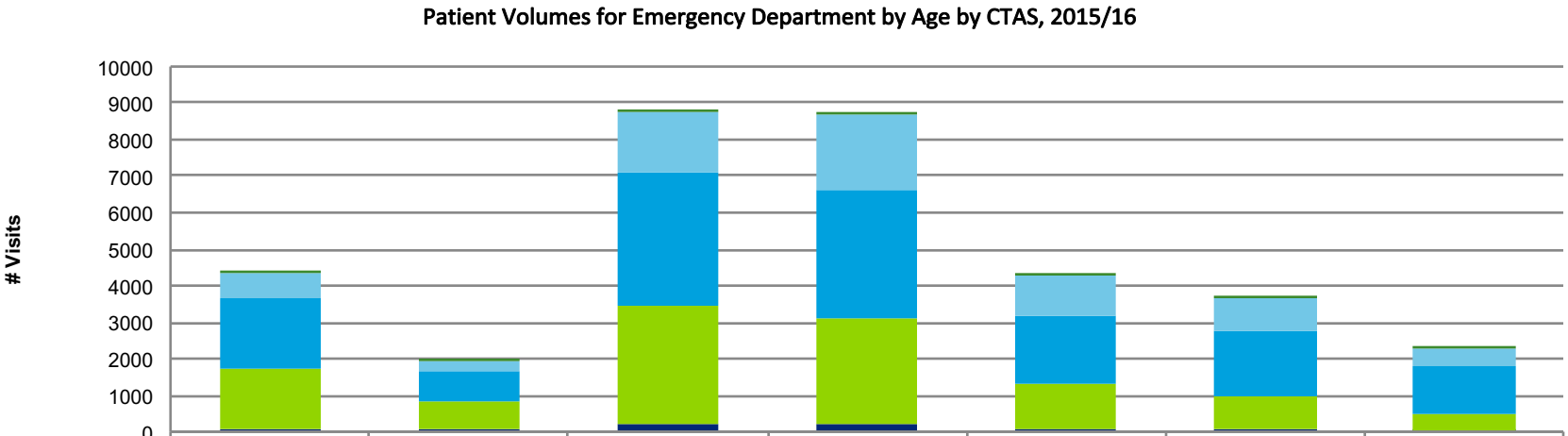
- Renal dialysis visits are expected to increase by 72.6% by 2040/41
- Renal dialysis volumes have decreased slightly over the past three years (by 7.9%). The projected increases are attributable to the expected change in the age/gender mix of the patient populations currently using this service.

Source: Intellihealth Ontario

Emergency Department

Clinical Utilization

Patient Volumes for Emergency Department



	0-14	15-19	20-44	45-64	65-74	75-84	85+
CTAS Level 1	36	4	43	80	38	45	24
CTAS Level 2	677	318	1651	2081	1104	892	516
CTAS Level 3	1965	776	3665	3486	1866	1826	1292
CTAS Level 4	1662	800	3189	2922	1230	897	468
CTAS Level 5	57	62	232	205	93	53	32

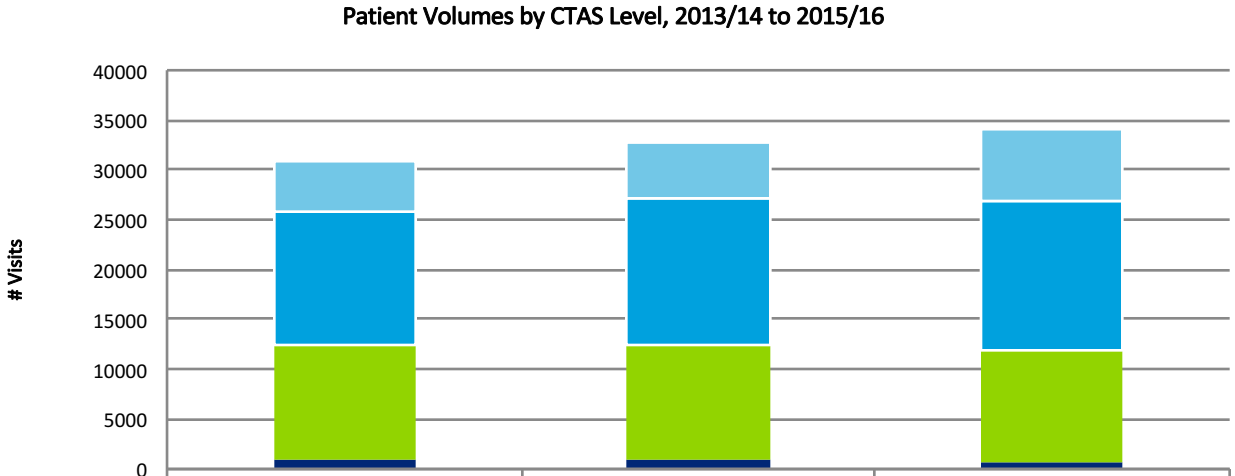
Key Highlights

- There were 40,644 visits to the emergency department in 2015/16
- The majority of emergency department patients were between the ages of 20 and 64

Source: Intellihealth Ontario

Clinical Utilization

Patient Volumes by CTAS Level



	FY 2013/14	FY 2014/15	FY 2015/16
CTAS LEVEL 1	264	242	270
CTAS LEVEL 2	5143	5655	7239
CTAS LEVEL 3	13484	14565	14876
CTAS LEVEL 4	11326	11652	11168
CTAS LEVEL 5	999	829	734

Key Highlights

- There is a relatively consistent proportion of patients for each CTAS level between 2013/14 and 2015/16
- The largest portion of population is offered care in the emergency department at CTAS Level 3 (14,876 patient visits in 2015/16)
- Over the past three years, there has been an increase in the number of cases that are classified as CTAS level 1, 2 and 3; while there being a decrease in the number of cases classified as CTAS level 4 and 5. The changes in volumes by acuity level will directly impact the ED staff, as the higher acuity cases require additional work effort and/or additional support such as admission to ICU, transfer to a regional facility, etc.

Source: Intellihealth Ontario

Referral Patterns

Cases by Residence for Emergency Department

Patient Volumes for Emergency Department by Residence , 2015/16

Patient Municipality	# Visits	% Total Visits
COBOURG	15051	43.9%
PORT HOPE	6888	20.1%
CRAMAHE	2648	7.7%
HAMILTON	2361	6.9%
ALNWICK/HALDIMAND	2342	6.8%
BRIGHTON	820	2.4%
CLARINGTON	525	1.5%
TRENT HILLS	505	1.5%
TORONTO	354	1.0%
OTHER	2793	8.1%

Key Highlights

- 64% of emergency department visits at NHH are from residents of Cobourg and Port Hope

Source: Intellihealth Ontario

Market Share

3-Year Trend for Emergency Department Cases

Market Share Trend for Emergency Department Services, 2013/14 to 2015/16

	2013/14			2014/15			2015/16			
Geography	Total Cases	For NHH	% for NHH	Total Cases	For NHH	% for NHH	Total Cases	For NHH	% for NHH	Absolute Change for NHH*
COBOURG	15,155	13,939	92%	15,837	14,536	92%	16,431	15,051	92%	**0%**
PORT HOPE	7,416	6,204	84%	7,997	6,647	83%	8,255	6,888	83%	**-1%**
CRAMAHE	2,491	1,995	80%	2,598	2,088	80%	3,669	2,570	70%	**-10%**
HAMILTON	3,405	2,297	67%	3,581	2,510	70%	3,355	2,344	70%	**3%**
ALNWICK/HALDIMAND	3,074	2,289	74%	3,575	2,573	72%	2,941	2,331	79%	**5%**
TOTAL	31,541	26,724	85%	33,588	28,354	84%	34,651	29,184	84%	**-1%**

**Change from 2013/14 to 2015/16*

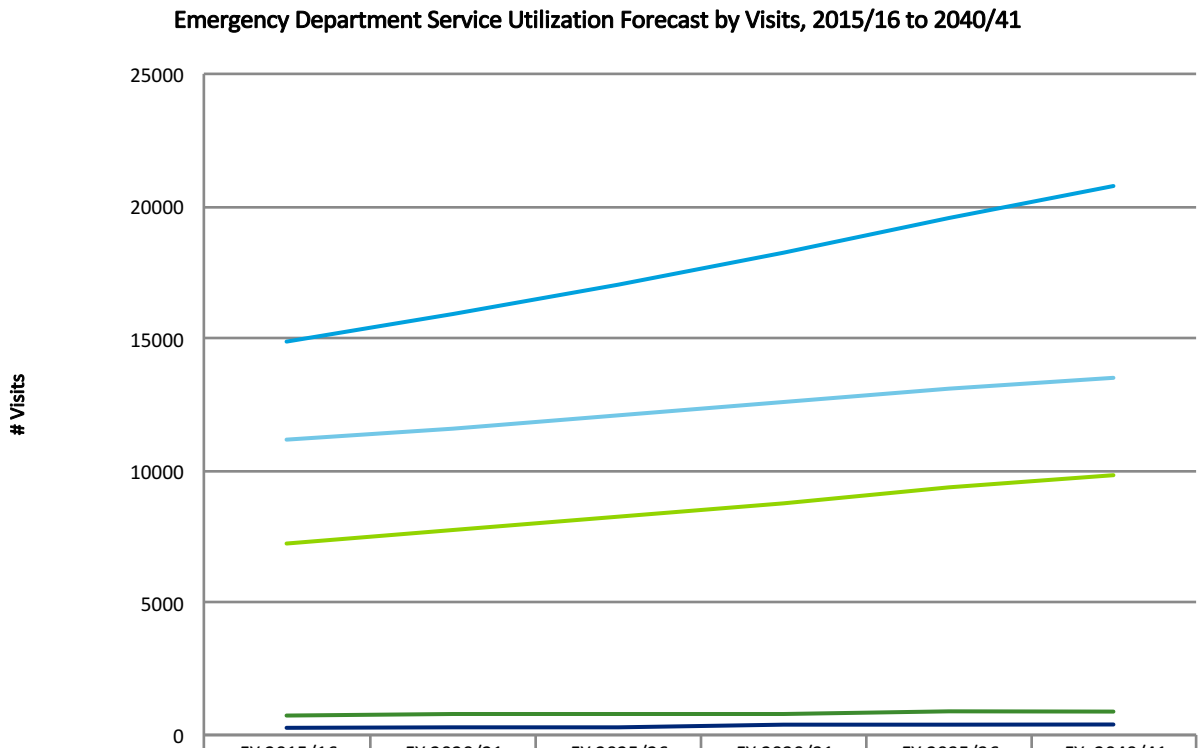
Key Highlights

- Overall market share for NHH Emergency Department Services has declined slightly (by 1%) since 2013/14
- 84% of residents who live within the catchment area of NHH receive their emergency department care at NHH. Based on past environmental scans completed by the hospital, this rate has remained steady since 2010/11
- NHH captures the highest market share among residents of Cobourg and the least share among residents of Hamilton Township and Alnwick/Haldimand

Source: Intellihealth Ontario

Future Projections

Service Utilization Forecast for Emergency Department



	FY 2015/16	FY 2020/21	FY 2025/26	FY 2030/31	FY 2035/36	FY 2040/41
CTAS Level 1	270	292	317	343	370	396
CTAS Level 2	7239	7723	8245	8783	9327	9824
CTAS Level 3	14876	15882	17039	18256	19560	20759
CTAS Level 4	11168	11620	12110	12594	13075	13506
CTAS Level 5	734	764	794	825	857	884

Key Highlights

- Emergency department visits are expected to increase significantly from 34,287 visits in 2015/15 to 45,370 visits by 2040/41.
- As measured by acuity, the highest volume cases are the CTAS 3 cases, which are expected to grow by 39.5% (5,883 visits) by 2040/41. This is higher than the average expected growth 32.3%.
- Combined, the highest acuity cases (CTAS 1-3) are expected to grow by 40.7%, which will place considerable pressure on ED resources as volumes increase.

Source: Intellihealth Ontario

Summary of Themes and Insights for NHH

Summary of Themes and Insights

Following detailed analysis of the quantitative data set derived from the design parameters defined by the Steering Committee, critical insights were collated to provide NHH Leaders with potential considerations during their strategic assessment of future opportunities and areas of growth for the organization.

Key Insight	*Considerations to Highlight*
Ontario's health care system is continuing to transform	Transformation demands that hospitals become even more collaborative. Further integration may impact on how services are structured and delivered. Implementation of the LHIN sub-regions and further changes to community service provision will need to be monitored closely.
Demonstrating value will continue to be a priority for the ministry and LHINs	NHH has demonstrated regional leadership (e.g. PATH project) and will carry lessons learned into other initiatives that enable improved service delivery. Recent HIS Recommendations, Bill 41, HSFR and changes to consumer expectations of health service delivery (i.e. data driven population health analysis, technology-enabled care, etc.), provide opportunities for NHH to play to its strengths with regional partners.
Market share findings suggest opportunities to grow and focus.	Areas of low market share suggest gaps in service to local residents and opportunities to grow. However, growth must carefully weighed against cost, the ability to provide services within available resources (i.e., QBPs), quality of care, ongoing program sustainability and overall value delivered to patients.
Impact of population growth will be substantial	By 2025, it is anticipated that there will be a 59% and 66% growth in the population of Northumberland county that is above the age of 75 years, and 85 years, respectively. These changes will impact both the overall volume and mix of services provided at NHH.

Appendices

Appendix A

Glossary of Definitions

Glossary of Terms

Various data points were included in the methodology to generate a current state understanding of the NE Cluster Hospital Partners. Descriptions of those variables analyzed are provided below.

Term	Description
ALOS	**Average Length of Stay** – normal number of days that an inpatient spends in hospital
ALC	**Alternate Level of Care** – when a patient is occupying a bed in a hospital and does not require the intensity of resources/services provided in this care setting (Acute, Complex Continuing Care, Mental Health or Rehabilitation), the patient must be designated Alternate Level of Care (ALC)[1] at that time by the physician or her/his delegate. The ALC wait period starts at the time of designation and ends at the time of discharge/transfer to a discharge destination[2] (or when the patient's needs or condition changes and the designation of ALC no longer applies).
CMG	**Case Mix Group** – classification system used to group patients together with similar characteristics
ELOS	**Estimated Length of Stay –** length of time an inpatient is expected to stay in hospital, based on the patient's age and case mix group complexity
HBAM	**Health Based Allocation Model** – estimates expected health care expenses based on demographics (age, gender, growth projections, socio economic status and geography) and clinical data (complexity of care and type of care)
HIS	**Hospital Information System** – an enterprise-wide clinical and administrative information management solution designed to enable hospital operations
HQO	**Health Quality Ontario** – provincial advisor on quality in health care in Ontario
HSFR	**Health System Funding Reform** – a new funding model in Ontario wherein hospitals, Community Care Access Centres and long-term care homes are compensated based on how many patients they look after, the services they deliver, the evidence-based quality of those services, and the specific needs of the broader population they serve
MCC	**Major Clinical Categories** – assigned according to Case Mix Grouping (CMG+) methodology. An MCC is a large grouping of diagnoses generally related to a body system, specific conditions, or trauma.
QBP	**Quality Based Procedure** – specific groups of patient services that offer opportunities for health care providers to share best practices that will allow the system to achieve even better quality and system efficiencies
RIW	**Resource Intensity Weight –** relative case weight for case mix groups used to measure the intensity of resource use (i.e., relative cost) associated with different diagnostic, surgical procedure and demographic characteristics of a patient

Source: Canadian Institute for Health Information, Cancer Care Ontario, Ministry of Health and Long Term Care

Appendix B

Methodology and Framework

Quantitative Analysis Framework and Methodology

The methodology for analyzing the quantitative data involved a system approach that was reviewed with the Steering Committee prior to commencing the analysis phase

Data Collection

Population data and inpatient (IP) and Outpatient care data for fiscal years (FY) 2012-13, 2013-14 and 2015-16 was pulled from IntelliHealth Ontario, including data from the CIHI Discharge Abstract Database (DAD) and National Outpatient Care Reporting System (NACRS). Additionally, selected clinic data was provided directly by NHH.

Program Categorization

Based on direction provided by the project Steering Committee, all clinical services delivered by the health centre were classified into five clinical programs

- Emergency Department (ED)
- Same Day Surgery
- Outpatient Services
- Inpatient Services, including:
  - Medical
  - Mental Health
  - Newborns
  - Obstetrics
  - Paediatrics
  - Palliative
  - Surgical
  - Critical Care
  - Rehabilitation

Sub-program and Age Grouping

Broad programs were subdivided to delineate areas of common service, and all patients were further segmented into sub-groups based on decision made by the project Steering Committee. Each sub-group was defined in 5 year increments (e.g. 0-4, 5-9, 10-14, etc.).

Inpatient Data Definition

Provider services were attributed to 1 of the 4 program groupings and patient data was mapped according to provider

Outpatient Data Definition

Outpatient clinics were assigned to one program and patients were mapped according to clinic*

- Same Day Surgery (SDS) patients were assigned to a program using the provider service approach*
- All Dialysis and Oncology visits in NACRS were attributed directly to the Medicine program; all ED visits in NACRS were assigned to Emergency

Note: Additional detail regarding methodology and data sources can be found in the Appendix.

Quantitative Analysis Framework and Methodology

Design parameters were defined by the Steering Committee to guide the quantitative data analysis process, enabling consistent analysis across hospitals to provide comparable data for discussion

Design Parameter	Definition	Source
Current and Projection Years	The last three years of complete data, namely FY 2013/14, FY 2014/15 and FY 2015/16 were analyzed. The services included in the project were projected at the noted program levels for the years FY 2020/21, FY 2025/26, FY 2030/31, FY 2035/36 and FY 2040/41.	2011 Census
Age Categorization	The population breakdowns for the communities identified in the project were developed by age and gender with 5 year age categories to 85+.	2011 Census
Market Share Geography	The market share analysis was undertaken at the level of Census Sub-Divisions, which comprise municipalities and townships.	2011 Census
Market Share Program Definition	Results were developed for each hospital, based on the common program definitions agreed to by all of the hospitals. This addressed program specific variations and allowed comparative analyses for the group.	As defined by NE Cluster Steering Committee, leveraging data from Intellihealth
Inpatient Programs	• Newborns were categorized based on their MCC designation (NEWBORNS AND NEONATES WITH PERINATAL CONDITIONS). • Obstetrics were categorized based on their MCC designation (PREGNANCY AND CHILDBIRTH) – all ages. • Remaining patients were split between paediatric and adults, using 0 – 19 for Paediatrics (excluding the categories above) and 20 + for adults • Adult patients were categorized into a palliative category using CMGs or Diagnoses of palliative • Mental health patients were categorized based on the MCC (MENTAL DISEASES AND DISORDERS), and split between paediatric and adult groupings	Intellihealth

Quantitative Analysis Framework and Methodology (continued)

(continued)

Design Parameter	Definition	Source
Inpatient Programs	• All remaining patients were categorized as medical or surgical, based on the MCC Partition code. Family Practice cases were assigned to an aggregate med/surg category. The categories were split between adult and paediatric groupings. • A sub-category were reviewed for patients that have a critical care stay, but these patients were not uniquely assigned to this category, rather they were analyzed as part of their broader category, i.e., medical, surgical, palliative, mental health or obstetrics.	Intellihealth
ED Programs	• Patients were split by triage level.	Intellihealth
Same Day Surgery Programs	• Patients were split between medical and surgical, based on their corresponding physician service.	Intellihealth
All other services	• All other services were reported as a line item for their corresponding service, with no further programmatic breakdown.	Intellihealth
Hospital Groupings	The following is methodology for grouping hospitals as part of the market share analysis: • Six participating hospitals individually identified • CE LHIN-Other • Toronto-Other • Toronto-Teaching • Kingston • Ottawa • North Simcoe Muskoka LHIN hospitals grouped together	Intellihealth
Benchmarking Data Exhibits	The following data exhibits were used to illustrate comparisons between the hospital, CE LHIN and province: • Population growth (CE LHIN and Ontario) • Population characteristics (CE LHIN and Ontario) • Health Status (CE LHIN and Ontario)	See above sources associated with each data exhibit.