

Northeastern Ontario Clinical Services Review

EXECUTIVE SUMMARY

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1.0 Executive Summary

1.1 Background and Objectives

1.1.1 Health System Funding Reform

Health System Funding Reform

Historically, hospitals have received global or base funding (an across-the-board increase each year). In April 2012 Ontario initiated funding reform, moving to a funding model that compensates health care organizations 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. Health system funding reform (HSFR) uses two funding models: the health-based allocation model (HBAM) and the Quality-Based Procedures model (QBP). Together it is hoped that these models will ensure that funding is allocated equitably to healthcare providers based on the delivery of high quality healthcare services.

1.1.2 Quality Based Procedures

Quality-Based Procedure is a term for selected medical procedures and surgeries for which evidence-based best-practices have been established

A Quality-Based Procedure (QBP) is a term for selected medical conditions and surgical procedures for which evidence-based best-practices have been established by clinical consensus alongside the evidence-based cost of the best-practice. Under the Quality Based Procedures model, hospitals (and soon other providers) will be paid a standard rate for providing selected services. Over time the fee for all QBP services will be based on the cost of efficiently providing ‘best practice’ models of care and providers will be compensated for the volume of service that they deliver. It is expected that the same fee will be paid to all providers delivering the service.

A fee for providing a QBP service

Under QBP funding providers will be paid a fee (the QBP Price) for delivering a defined QBP service. The total fees paid will replace the portion of the hospital’s funding that was devoted to the delivery of those services in the base year (the ‘carve out’) for that QBP service¹. QBP funding, initially, has not been applied to small hospitals².

QBP Price

The QBP price is initially being set at the provincial average cost per HBAM Inpatient Grouper (HIG) weighted case for the prior year.

¹ The ‘base year’ for most of the QBP services considered here is 2011/12.

² In Ontario, for funding purposes, a small hospital is defined to be a hospital that provides care for fewer than 2700 acute inpatient and SDS cases in a year.

This price will be paid to a hospital for each QBP weighted case³ cared for at the hospital, but only up to the QBP volume that has been assigned to the hospital by the LHIN/MOHLTC.

1.1.3 **Project Objectives**

Best approach to configuring the acute care clinical services currently anticipated for QBP funding

The 25 hospitals and the CCAC in the North East LHIN, in collaboration with the LHIN itself have engaged Hay Group to explore the best approach to configuring the clinical services currently anticipated for QBP funding. It is hoped that this will provide a feasible and realizable plan for achieving the best practice models of care for the delivery of QBP services in the North East. The services considered in this project have been the QBP funded acute care services related to Stroke; Congestive Heart Failure; Chronic Obstructive Pulmonary Disease; Total Joint Replacement; Hip Fracture; Cataract; Vascular Surgery; Endoscopy; and Chemotherapy.

1.1.4 **Approach**

The project was conducted under the direction of a Steering Committee representing a cross-section of key stakeholder representatives from across the Northeast. The project included the following key elements:

- Project Initiation
- Confirmation of Construct for Quality Based Procedures
- Development of a Decision Making Framework
- Analysis of Current Distribution of QBPs Among Hospitals
- Projection of Future Demand for QBP Care
- Analysis of Alternative Models of Care
- Integration Opportunity Workshops for Hub Medical and Clinical Leaders
- Integration Models Workshops for Hub Medical and Clinical Leaders
- Refinement of QBP Organization and Service Delivery Models
- Development of Implementation Plan
- Development of Project Report

³ It is expected that in future years the price will be set as the price per case rather than the price per weighted case.

1.2 Evaluation Framework

Criterion-based decision making focusing on access, quality, consistency and economy

The Steering Committee developed an evaluation framework to be used for decision-making in this project. It was hoped that the proposed models for integrating care within the LHIN would provide for improvements in: access; quality; consistency and economy. Evaluative criteria were defined for use in evaluating the model for integrating/consolidating services and then for assessing the siting of services given the potential realignment options for clinical services among one or more hospital sites in the LHIN.

1.3 Models of Care for Medical QBPs

Consistent model of care and clinical pathway/order set for medical QBP patients across the region

The medical QBPs considered in this project are Congestive Heart Failure (CHF), Chronic Obstructive Pulmonary Disease (COPD) and Stroke. The Hub workshops developed and the Project Steering Committee confirmed models for the care of medical QBP patients in North East LHIN hospitals that are based on the best practice models of care as presented in the QBP Clinical Handbooks. These models of care are very similar; the underlying theme is that patients across the northeast should have equitable access to consistent, high quality care. To this end NE LHIN hospitals will be expected to use consistent models of care and clinical pathways/order sets in caring for CHF, COPD and Stroke patients across the region.

1.3.1 Congestive Heart Failure and Chronic Obstructive Pulmonary Diseases

Average acuity CHF and COPD patients should be admitted and managed at the hospital where the patient first presents to the ED

The Hub Workshops and the Steering Committee developed models of care based on the best practices articulated in the QBP clinical handbooks that are quite similar for CHF and COPD. The key characteristics of these models of care are:

1. Low acuity patients should be discharged from EDs across the LHIN.⁴
2. Average acuity patients should be admitted and managed at the hospital where the patient first presents to the ED. All hospitals with an ED should be able to care for average acuity CHF and COPD patients. However, when required, clinical support via telemedicine should be available from hub hospitals to clinicians looking after average acuity patients in local hospitals.

⁴ For modeling purposes we have used current NE averages for % of CHF and COPD patients in each patient group.

High acuity CHF and COPD patients should be transferred to and admitted at Hub hospitals

3. In general high acuity patients should be transferred to and admitted at Hub hospitals (SAH, TADH, HSN, NBRHC)⁵.
4. It is expected that the hospitals will achieve provincial average length of stay performance or better (CHF) or QBP targets (COPD) in caring for each CHF and COPD patient admitted to inpatient care.
5. It is expected that hospitals will significantly reduce the number of extremely long stay patients thus reducing the number of atypical patients⁶.
6. High acuity patients who have stabilized at a Hub hospital but who are not ready for discharge should be repatriated to their local hospital to complete their inpatient care.
7. Importantly, it is noted that if hospitals in the NE LHIN are to achieve the targeted lengths of stay there will need to be significant and sufficient investments in community resources to provide both transitional care and CCAC services.
8. Each hub hospital should provide a Heart Failure Clinic and COPD Clinic to support the transitional phase of care for these patients. It is suggested that consideration should be given to offering a combination Heart Failure/Respiratory Clinic at each Hub hospital. The clinics will require access to and support from community resources to monitor patients and prevent readmissions to hospitals. The hub clinics and the community resources should seek opportunities to partner with FHTs to care for these patients.
9. The expertise in the hub sites should be made available to the more remote locations using telemedicine to reduce burden of travel for patients.

Implications of CHF/COPD models of care

Implementation of the proposed model of care will result in movement of patient volume (all high acuity CHF and COPD patients) from the local hospitals to the hub hospitals. There will be a reduction in the total volume of cases due to elimination of inpatient

⁵ There should be some ability for some high acuity patients to be cared for with BiPAP for 6-12 hours at the site where they present and then, if the patient stabilizes, continue to be managed locally for the remainder of their stay.

⁶ For modeling purposes, the Steering Committee has assumed that NE LHIN hospitals can reduce the % of atypical cases to the lowest percentage achieved by hospitals in other LHINs in the province.

transfers from local to hub hospitals⁷. There will also be a decrease in the total number of patient days across all hospitals as hospitals adjust their care processes to achieve.

- A more consistent ALOS that is less than or equal to the provincial average for typical CHF cases and
- A reduction in the number of long-stay atypical CHF cases⁸.

The reduction in the number of long stay atypical cases will result in a reduction in the number of HIG weighted cases because each of the long stay atypical medical QBP cases likely has a higher HIG weight than a typical case. These reductions in cases and patient days, if realized, will also result in a reduction in the costs of caring for medical QBP patients in NE LHIN hospitals.

Ambulatory Care

The recommended models of care for medical CHF and COPD patients suggest that ambulatory clinics should be offered at each hub hospital. A significant percentage of hospital discharges will require the services of these clinics. The hub hospitals will need to make significant investments in these services if the proposed LOS targets are to be achieved. The current QBP price does not reflect nor does QBP funding currently provide for these services. It is unclear how the hospitals will be able to redirect their funds to support these clinics without securing some additional global budget funding.

Impact on hub and local hospitals

Thus local hospitals will need to work with their hub hospitals to develop protocols and agreements to facilitate transfer of high acuity CHF and COPD patients from the local hospital's ED to the hub hospital. Similarly, local hospitals will need to be able to accommodate transfers of COPD/CHF patients when their condition stabilizes at the hub hospital. Hub hospitals will need to reduce the lengths of stay for their CHF and COPD patients and they will be expected to significantly enhance their ambulatory CHF/COPD care.

1.3.2 Stroke

The hub workshops and the Steering Committee developed a model of care for stroke that is consistent with the model proposed by the

⁷ Because high acuity patients will be transferred directly from the ED to inpatient care at a hub hospital, the patient will no longer be counted twice; once after to local hospital and once, after inpatient transfer to the hub hospital.

⁸ “Best Practice” (i.e. Lowest) % Atypical cases of all Ontario LHINs for each QBP has been applied to NE LHIN hospitals, with cases being converted from Atypical to Typical and then given the target LOS for the QBP and the NE LHIN average weight per Typical case for the QBP.

Northeastern Ontario Stroke Network (NEOSN).⁹ This model provides for a Regional Stroke Centre at Health Science North (HSN) and District Stroke Centres at Sault Area Hospital (SAH), Timmins and District Hospital (TDH) and North Bay Regional Health Centre (NBRHC). Key elements of the model include:

When a stroke patient requires admission to inpatient care they should be transferred from the ED where they present to the stroke unit at the appropriate designated stroke centre

1. Inpatient acute and rehabilitative stroke care should be consolidated at the regional and district stroke centres which should establish inter-professional stroke teams.
2. Admissions of TIA patients from the ED should be reduced to the provincial average rate of admission¹⁰.
3. When a stroke patient (TIA, Ischemic, Haemorrhagic) requires admission to inpatient care they should be transferred from the ED where they present for admission to the stroke unit at the appropriate designated stroke centre¹¹.
4. Current provincial TIA ALOS will be the target length of stay for TIA patients that are admitted to inpatient care.
5. QBP length of stay targets for Ischemic and Hemorrhagic stroke care will be achieved by NE LHIN acute stroke units. These targets are 5 day ALOS for Ischemic Stroke and 7 day ALOS for Haemorrhagic Stroke.
6. The number of extremely long stay patients should be reduced significantly thus reducing the number of atypical patients¹².
7. Approximately 40% of Stroke patients should receive inpatient rehabilitation after completing their inpatient acute care.
8. Stroke patients requiring inpatient rehabilitation should stay at the regional/district stroke centers to receive this care. Upon

⁹ See NE LHIN Hospital Based Stroke Care: Impact of Consolidating Care.

¹⁰ This will provide for an almost 40% reduction in the number of ED TIA patients admitted to inpatient care. This can be achieved through enhancement of the existing Regional Stroke Prevention Clinic model.

¹¹ For many hospitals this will be a change in practice. Protocols and formal agreements among hospitals to facilitate these transfers will need to be developed.

¹² For modeling purposes, the Steering Committee has assumed that NE LHIN hospitals can reduce the % of atypical cases to the lowest percentage achieved by hospitals in other LHINs in the province.

completion of their inpatient rehabilitation; they should be discharged to home¹³.

11. If a patient is designated “ALC-LTC Placement” at any time during the patient’s acute or rehabilitation care stay then the patient should be repatriated to her/his “home” hospital.
12. Like the performance targets for CHF and COPD, these clinical performance targets will only be achieved if outpatient clinic resources are enhanced. The existing Stroke Prevention Clinics (SPCs) at each Hub hospital should be enhanced to ensure that TIA patients who are not admitted to inpatient care¹⁴ can receive diagnostic and therapeutic care within 48 hours of presentation to an Emergency Department in the North East. Also, outpatient stroke clinics at the hub hospitals should be enabled to also provide for the post discharge needs of stroke patients who are discharged from acute and inpatient rehabilitation¹⁵.

Implications of the proposed model of care for TIA and stroke patients

Like CHF and COPD patients, there will be movement of TIA and stroke patient volume from the local hospitals to the acute stroke units at the hub hospitals. More importantly, there will also be a significant decrease in the total number of patients and patient days across all hospitals as hospitals adjust their care processes to achieve the provincial average rate of admissions for TIA patients and lengths of stay for stroke patients.

Implications of Stroke Model of Care for Inpatient Rehabilitation

The recommended model of care suggests that 40% of stroke patients should be discharged to inpatient rehabilitation with an ALOS of approximately 32 days. This would be a modest increase from

¹³ This is a significant and important change from current practice.

¹⁴ Majority of TIA patients do not require admission to hospital and should be referred to an urgent TIA/Stroke Prevention Clinic or comparable ambulatory setting for rapid diagnostic and medical evaluation, within 48 hours of symptom onset/visit to ED.

¹⁵ It has been suggested by NEOSN that a regional Stroke Re-Check Clinic model should be established (with clinics located at each Hub hospital) to ensure stroke patients discharged home are followed by an interdisciplinary team for a minimum of one year following their discharge. These clinics will address the medical and rehabilitation needs of stroke patients and assist in decreasing hospital readmissions for post-stroke complications. Telemedicine should be used when possible and appropriate to provide this service to patients living in rural communities. Additionally, a regional Stroke Outpatient Services model should be established to ensure stroke patient that do not qualify for CCAC services, can access stroke-specific outpatient services within a 45 minute drive of their home. . These clinics would also be connected with the Northern Ontario Independent Living Association (NILA) Regional Post-Stroke Program to assist with stroke community navigation well beyond hospital discharge.

current practice wherein 36% of stroke patients at hub hospitals are currently being discharged to inpatient rehabilitation. Under the recommended model of care, there would be an additional 75 cases discharged to inpatient rehabilitation. With this increase, the NE LHIN stroke patients would require 8,435 patient days and 25.7 beds¹⁶ in total devoted to stroke rehabilitation.

Impact on hub and local hospitals

Thus local hospitals will no longer admit TIA or stroke patients; they will need to work with their hub hospitals to develop protocols and agreements to facilitate transfer of TIA and stroke patients from the local hospital's ED to the hub hospital. Hub hospitals will need to reduce the lengths of stay for their TIA and stroke patients, enhance the rehabilitation service they provide to acute stroke care patients and expand and enhance their post acute care stroke rehabilitation services. Additionally, hub hospitals will need to significantly enhance their ambulatory stroke care.

1.4 Models of Care for Surgical QBPs

The surgical QBPs considered in this project are Cataracts, Total Joint Replacements (TJR)¹⁷, Hip Fractures and Vascular Surgery. The Hub workshops developed and the Project Steering Committee confirmed models of care for surgical QBP patients in North East LHIN hospitals. These models of care are based on best practice models of care as articulated in the QBP Clinical Handbooks where available and the NE LHIN Integrated Orthopedic Capacity Plan. These models of care are very similar; the underlying theme is that patients across the northeast should have equitable access to consistent, high quality care. The key characteristics of these models of care are:

Consistent model of care and clinical pathway/order set for surgical QBP patients across the region

- NE LHIN hospitals should use consistent models of care and clinical pathways/order sets across the region in caring for each of cataract, TJR, hip fracture and vascular surgery patients.
- NE LHIN hospitals should establish integrated clinical programs in each hub for the delivery of cataract surgery and for orthopaedic surgery. Also, the involved hospitals should establish a single, integrated, LHIN-wide program for vascular surgery.

The specific models of care proposed for each of the surgical QBPs are described briefly in the sections following.

¹⁶ Assuming 90% occupancy for rehabilitation beds.

¹⁷ Total Joint Replacement QBPs include primary, unilateral knee replacement and primary, unilateral hip replacements.

1.4.1 Cataract Surgery

A single clinical program for cataract surgery in each hub

The proposed model of care suggests that within each hub clinical program for cataract surgery¹⁸:

- Cataract surgery procedures should be consolidated at the Hub hospitals
- Specialist diagnostic and follow up clinics should be provided at local hospitals
- ‘Simple procedures’ should be provided at local hospitals at the discretion of the hub clinical program for cataract surgery
- All cataract surgery should be provided within the hub where the patient lives.

Implications of Proposed Model for Cataract Surgery

It is expected that implementation of the proposed model for cataract surgery will result in the following changes in the delivery of cataract surgery within the LHIN: All cataracts will be consolidated in the 4 Hub hospitals; all patients will receive their cataract surgery within the hub where they live; and cataracts will be repatriated from outside- of- LHIN hospitals.

1.4.2 Total Joint Replacement

Continue TJR in the 5 hospitals currently providing

The proposed model of care suggests that TJRs should be provided as part of an integrated hub wide orthopaedic surgery program¹⁹. Key characteristics of the proposed TJR model of care are:

1. The modeling assumes that TJR surgery will continue in the 5 hospitals currently providing this surgery.
2. Each hospital providing TJRs, should establish/maintain a Joint Assessment Centres (JACs) as the only point of access to TJR.

¹⁸ It should be noted that concurrent with the work of the Clinical Services Review Steering Committee, work has begun in the LHIN to interpret and implement the findings and recommendations of A Vision for Ontario, Strategic Recommendations for Ophthalmology in Ontario. The development of models for the delivery of cataract surgery should take into account this broader work related to the delivery of all ophthalmology services in the LHIN.

¹⁹ Within each hub-wide orthopaedic program, if a hospital/surgeon is providing major orthopaedic surgery; it should also provide hip fracture treatment and should provide for hip fracture treatment 7 days per week. Hospitals participating in the hub wide orthopaedic program should develop a clear framework for urgent call coverage.

3. TJRs should be provided by a hospital in the LHIN where the patient resides. In the future 100% of TJRs for NE LHIN residents will be provided within the NE LHIN²⁰.
4. NE LHIN orthopaedic surgery programs should adopt the QBP target for ALOS of 4.4 days.
5. The number of extremely long stay patients should be reduced significantly thus reducing the number of atypical patients²¹.
6. NE LHIN orthopaedic surgery programs should adopt the QBP target for discharge disposition with 90% of patients discharged to home; and 10% discharged to inpatient rehabilitation²².
7. Patients can and should be repatriated from the TJR surgery site to their local hospitals for inpatient rehabilitation with access to telemedicine for rehabilitation support²³.
8. TJR patients should have enhanced access to physiotherapy in the community with initial therapy provided by CCAC as appropriate to the needs of the patient and continuing therapy provided in group sessions by hospitals as ambulatory care.

Repatriation will provide a significant increase in TJR volumes in NE LHIN hospitals

Implementation of the proposed TJR model of care will result in repatriation of significant patient volume from outside-of-LHIN hospitals that will cause an increase in cases within the LHIN. There will also be a decrease in the total number of patient days across all hospitals as hospitals adjust their care processes to achieve:

- A more consistent and shorter ALOS that is less than or equal to the provincial average for their typical cases and
- A reduction in the number of atypical cases.²⁴

²⁰ Both primary TJRs and revisions will be provided within the LHIN.

²¹ For modeling purposes, the Steering Committee has assumed that NE LHIN hospitals can reduce the % of atypical cases to the lowest percentage achieved by hospitals in other LHINs in the province.

²² This would be a significant increase from current practice wherein only approximately 1% of TJR patients are discharged to inpatient rehabilitation.

²³ Enhanced rehabilitation resourcing and support in smaller communities will be needed to facilitate effective repatriation. Cross - training of RN's, RPN's and PSWs in hip fracture rehabilitation in smaller communities will facilitate effective repatriation.

²⁴ "Best Practice" (i.e. Lowest) % Atypical cases of all Ontario LHINs for each QBP has been applied to NE LHIN hospitals, with cases being converted from Atypical to Typical and then given the target LOS for the QBP and the NE LHIN average weight per Typical case for the QBP.

Although patient days will decline, costs will increase significantly as the increased number of cases will increase the number of surgical procedures. These additional costs may be offset by increased QBP funding if the additional volumes are allocated to the hospitals and if the hospitals' costs are less than the QBP prices for TJR procedures.

Implications of TJR Model of Care for Inpatient Rehabilitation

Very few NE LHIN knee replacements are currently discharged to inpatient rehabilitation (0.5%). The proposed model of TJR care for NE LHIN suggests that 10% of TJR inpatients should be discharged directly from acute care to inpatient rehabilitation with an estimated average length of stay of 14 days. This represents a 20 fold increase over the current use of inpatient rehabilitation by NE LHIN TJR patients. This will be a significant increase in the volume of inpatient rehabilitation cases and the associated need for beds and care. As of now, there is no indication that there will be QBP funding to support the inpatient rehabilitation component of the care for TJR patients. If there is no QBP funding, it will have to be determined how the hospitals will provide for the rehabilitation aspect of the best practice model of care for TJR patients?

Implications of TJR Model of Care for Ambulatory Care

TJR patients that do not get inpatient rehabilitation will need continuing rehabilitation either in their homes through CCAC or in a clinic setting. Currently there is very limited homecare or hospital based ambulatory rehabilitative care available for TJR patients. As of now, there is also no indication that there will be QBP funding to support the outpatient rehabilitation component of care for TJR patients. If there is no QBP funding for ambulatory rehabilitation, it will have to be determined how hospitals and/or the CCAC will provide for this additional outpatient rehabilitation.

Implications for hub and local hospitals

Thus, under the proposed model for TJR care hub hospitals will experience an increase in TJR cases but a decrease in TJR patient days. Hub hospitals and local hospitals will need to provide increased capacity for inpatient TJR rehabilitation.

1.4.3 Hip Fractures

The proposed model of care suggests that Hip Fracture patients should be cared for as part of an integrated hub wide orthopaedic surgery program²⁵. Key characteristics of the proposed hip fracture model of care are:

²⁵ Within each hub-wide orthopaedic program, if a hospital/surgeon is providing major orthopaedic surgery; it should also provide hip fracture treatment and should provide for hip fracture treatment 7 days per week.

1. Assume that both the current NE LHIN average percentage of ED Hip Fractures being admitted to inpatient care and the current hospital specific Hip Fx transfer out rate are appropriate (i.e. assume that minor hip fractures are appropriately being treated locally by general surgeons; with more significant fractures being transferred out to a hub hospital).
2. All hip fracture transfers should be from the local ED to inpatient care at the appropriate hospital within the hub. Hip fracture patients should not be forced to wait as inpatients in a referring hospital; they should be transferred from the referring hospital ED to inpatient or pre operative status in the receiving hospital²⁶.
3. Hospitals participating in the hub wide orthopaedic programs should establish a clear framework for urgent call coverage.
4. Hospitals treating hip fractures should achieve the provincial median ALOS performance (or better) for inpatient acute care.
5. The number of extremely long stay patients should be reduced significantly thus reducing the number of atypical patients²⁷.
6. 80% of Hip Fracture patients discharged from acute care in a NE LHIN hospital should be discharged directly to inpatient rehabilitation.
7. Patients can and should be repatriated from the acute hip fracture treatment site to their local hospitals for inpatient rehabilitation with a plan of rehabilitative care and access to telemedicine for rehabilitation support²⁸.
8. Hospitals providing rehabilitative care for hip fracture patients should achieve the provincial median ALOS performance for inpatient rehabilitation for hip fracture patients.

²⁶ For many hospitals this will be a change in practice. Protocols and formal agreements among hospitals to facilitate these transfers will need to be developed.

²⁷ For modeling purposes, the Steering Committee has assumed that NE LHIN hospitals can reduce the % of atypical cases to the lowest percentage achieved by hospitals in other LHINs in the province.

²⁸ Enhanced rehabilitation resourcing and support in smaller communities will be needed to facilitate effective repatriation. Cross - training of RN's, RPN's and PSWs in hip fracture rehabilitation in smaller communities will facilitate effective repatriation.

Implications of Proposed Model for Care of Hip Fracture Patients

With implementation of the proposed model of care there will be some movement of patient volume from the local hospitals to the hub hospitals. There will also be a significant decrease in the total number of patient days (and HIG weighted cases) across all hospitals as hospitals adjust their care processes to achieve:

- A more consistent ALOS that is less than or equal to the provincial average for typical cases and
- A reduction in the number of atypical cases²⁹.

Implications for Inpatient Rehabilitation

There will also be a significant increase in the use of inpatient rehabilitation for hip fracture patients. The proposed model of care for the NE LHIN hospitals suggests that 80% of hip fracture inpatients should be discharged directly from acute care to inpatient rehabilitation. If the LHIN hospitals achieve this target, then each hub will experience a significant increase in the volume of inpatient rehabilitation cases and the associated need for beds and care. As of now, there is no indication that there will be QBP funding to support the inpatient rehabilitation component of the care for hip fracture patients. If there is no QBP funding, it will have to be determined how the LHIN will provide for the rehabilitation aspect of the best practice model of care for hip fracture patients.

Implications for Ambulatory Care

Both hip fracture patients that do not get inpatient rehabilitation and hip fracture patients that do receive inpatient rehabilitation will need continuing rehabilitation either in their homes or in a clinic setting. Currently there is very limited homecare or hospital based ambulatory rehabilitation care for hip fracture patients. As of now, there is no indication that there will be QBP funding to support the outpatient rehabilitation component of the care for hip fracture patients. If there is no QBP funding for ambulatory rehabilitation for hip fracture patients, it will have to be determined how hospitals will be able to fund this additional outpatient rehabilitation.

Implications for hub and local hospitals

Thus local hospitals will need to work with their hub hospitals to develop protocols and agreements to facilitate transfer of hip fracture patients from the local hospital's ED to the hub hospital. Also, both hub and local hospitals will need to provide significantly increased capacity for inpatient rehabilitation for hip fracture patients.

²⁹ “Best Practice” (i.e. Lowest) % Atypical cases of all Ontario LHINs for each QBP has been applied to NE LHIN hospitals, with cases being converted from Atypical to Typical and then given the target LOS for the QBP and the NE LHIN average weight per Typical case for the QBP.

1.4.4 QBP Vascular Surgery Services

Narrow definition of vascular surgery for QBP funding

QBP funding for vascular surgery will be applied only to very narrowly defined elective Aortic Aneurysm Repairs and Repairs for Lower Extremity Occlusive Disease. Currently, these QBP vascular procedures are being provided by the Sault Area Hospital (SAH) and Health Sciences North. EVARs are only provided at Health Sciences North (HSN). There are three vascular surgeons located at HSN and one vascular surgeon at SAH.

The proposed model of care suggests the following approach to organizing and delivering care for QBP Vascular Surgery patients in NE LHIN hospitals.

QBP vascular surgery procedures should be provided as part of an integrated LHIN wide vascular surgery program

1. NE LHIN hospitals should use a consistent model of care and clinical pathways/order sets in caring for vascular surgery patients across region.
2. QBP vascular surgery procedures should be provided as part of a single, integrated LHIN wide vascular surgery program.
3. The LHIN wide vascular surgery program should operate under an integrated clinical governance and management model.

It is further suggested that the clinicians involved in vascular surgery working with a small task force should provide leadership in the interpretation of the QBP Clinical Handbook for Vascular Surgery (and the recent and continuing work of the Cardiac Care Network) to fully develop a definitive model of care for the delivery of vascular surgery in the NE LHIN and to determine how best to operationalize the LHIN wide vascular surgery program³⁰.

1.5 Models of Care for Outpatient QBPs

The outpatient QBPs considered in this project are Endoscopy and Chemotherapy. The Hub workshops developed and the Project Steering Committee confirmed models for the care for outpatient QBP patients in the North East LHIN. The specific models of care proposed for each of the outpatient QBPs are described briefly in the sections following.

³⁰ A model that can be used to guide this process is provided in section 15.3 of this report.

1.5.1 QBP Endoscopy Services

QBP colonoscopies should be provided in hospitals unless significant advantages in out-of-hospital premises

QBP funding of endoscopy is currently focused on colonoscopy procedures³¹. It is recommended that NE LHIN hospitals should use a consistent model of care in performing colonoscopies across region. As a general rule, QBP colonoscopies should be provided in hospitals. Unless there are significant clinical and economic advantages to providing colonoscopies in out-of-hospital premises³², in the NE LHIN, QBP funded colonoscopies should be restricted to hospital facilities³³.

Given that colonoscopies are likely to continue being provided by hospitals and the single out-of-hospital provider in Sault Ste Marie, the proposed clinical integration model of care should not result in any significant change in the volumes of procedures provided by them or the cost per procedure at each site.

1.5.2 Chemotherapy

The Hub clinical workshops developed and the Steering Committee reviewed, refined and confirmed the following model for systemic therapy in NE LHIN hospitals. The process has recommended that the NE LHIN should continue the current consolidated model of care as defined by CCO. This includes the following key elements:

- A network of Community Oncology Clinics comprised of the Northeastern Ontario community hospitals that work closely with the North East Regional Cancer Program to provide drug treatments closer to patients' homes.
- Sault Area Hospital Algoma District Cancer Program.
- An extensive regional ambulatory oncology information system that supports Computerized Physician Order Entry in Sudbury with remote use for 90% of satellite chemotherapy treatments across the region.

³¹ It should be noted that CCO has recently indicated that all GI endoscopic procedures will be included in QBP funding.

³² If QBP funded colonoscopies are to be provided in OHPs, then binding covenants must be provided to ensure that physicians participating in these OHPs continue to be actively involved in the GI on-call system of the hospital.

³³ The only exception is in Sault Ste Marie where the existing OHP provider of colonoscopies should be allowed to continue and, depending on the emerging policy for Community Based Specialty Clinics, it should be considered for QBP funding for the colonoscopies that it is providing.

1.6 Summary of Implications of Proposed Models of Care

Ensuring timely and equitable patient access to high quality care

Implementation of the proposed clinical integration models for each inpatient QBP will have a significant and positive impact on the care provided to QBP patients in all the hospitals in the North East LHIN. The most significant impacts will come from changes in clinical practices to ensure timely and equitable patient access to high quality care. The most significant of these changes are:

- There will be consistent clinical models of care, pathways and order sets for all QBPs across all LHIN hospitals.
- Local hospitals will transfer all stroke cases directly to hub hospitals rather than admitting and treating these patients locally.
- Local hospitals will transfer higher acuity CHF, COPD and Hip Fracture cases from their Emergency Departments directly to hub hospitals rather than first admitting, stabilizing and then transferring.
- Local hospitals will focus on lower and moderate acuity CHF COPD cases; these will all be admitted and cared for locally.
- Lengths of stay for stroke patients will be reduced so as to achieve an average length of stay equivalent to the QBP target lengths of stay; lengths of stay for all other QBPs will be reduced to be no more than the provincial average length of stay for that QBP.
- The percentage of atypical patients for a QBP will be reduced to the lowest percentage of Ontario LHINs.
- Once a QBP patient's condition is stabilized at a hub hospital, the patient will be transferred to his/her local hospital for the completion of his/her acute care and/or for rehabilitation. However, stroke patients will complete both their acute and rehabilitation care at the hub hospital.
- There will be an increase in the percentage of stroke, hip fracture and TJR patients transferred to inpatient rehabilitation both at hub hospitals and at local hospitals.
- Hub hospitals will offer outpatient clinics to provide post acute and chronic disease management care for CHF, COPD, TIA and Stroke patients.
- There will be integrated clinical programs across each hub to provide care for hip fracture and TJR patients and for cataract patients. There will be an integrated, LHIN wide clinical program to provide care for vascular surgery patients.

1.6.1 Impact on Hospital Activity

Dramatic reduction in the number of acute care patient days

The following table presents the projected impact on inpatient acute care across all of the LHIN hospitals of the implementation of the proposed clinical integration models for each inpatient QBP. The most significant impact will be a dramatic reduction in the number of acute care patient days resulting from significantly shorter lengths of stay that are less than or equal to the provincial average for the typical cases in the QBP. Also, although there will be an increase in cases primarily as a result of repatriation of TJR and cataract cases from out-of- LHIN hospitals, there will be a concurrent reduction in HIG weighted cases resulting primarily from a reduction in the number of atypical cases.

Exhibit 1: Projected Impact on NELHIN IP Hospital Activity of Proposed Models of QBP Care

Inpatient QBP	2012/13 Actual Activity					Proposed Activity					Change In Activity		
	IP Cases	% Atyp. Case	IP Days	Avg. LOS	HIG Wtd Cases.	IP Cases	% Atyp. Case	IP Days	Avg. LOS	HIG Wtd Cases.	IP Cases	IP Days	HIG Wtd Cases.
CHF	1,386	22%	11,935	8.6	2,103	1,347	14%	6,898	5.1	1,940	-39	-5,037	-163
COPD	2,168	19%	18,016	8.3	3,103	2,144	14%	9,757	4.6	2,936	-24	-8,259	-167
TIA	286	9%	1,209	4.2	207	179	4%	651	3.6	117	-107	-558	-90
Ischemic Stroke	623	28%	7,370	11.8	1,300	595	18%	2,975	5.0	1,176	-28	-4,395	-124
Haem Stroke	64	33%	1,048	16.4	151	64	20%	448	7.0	133	-	-600	-18
THR	625	5%	2,878	4.6	1,074	783	2%	2,789	3.6	1,310	158	-89	235
TKR	1,337	4%	5,540	4.1	2,059	1,585	1%	5,226	3.3	2,383	248	-314	324
Hip Fracture	658	40%	10,104	15.4	1,877	608	11%	3,978	6.5	1,444	-50	-6,126	-433
AAA Repair	94	38%	628	6.7	351	94	2%	386	4.1	338	-	-242	-13
LEOD	120	11%	702	5.9	247	120	2%	510	4.3	214	-	-192	-33
Total	7,361		59,430	8.1	12,473	7,519		33,617	4.5	11,991	158	-25,813	-482

1.6.2 Inpatient Rehabilitation

More than triple the number of patients being discharged to inpatient rehabilitation

Implementation of the proposed clinical models of care for Stroke, TJR and Hip Fracture will dramatically change the current approach to the organization and delivery of rehabilitation services in the North East LHIN. The proposed models of care will more than triple the number of patients being discharged to inpatient rehabilitation. Given the suggested ALOS for these patients in rehabilitation, these patients would require 80.2 inpatient rehabilitation beds. The inpatient rehabilitation for stroke patients is to be provided in the hub hospitals. The inpatient rehabilitation for TJR and Hip Fracture patients can be provided in the patients' local hospitals, in a CCC/Rehabilitation

hospital or in the hub hospital. This increase in the use of rehabilitation beds will require significant planning and potential repurposing of beds that are no longer required for acute care because of the significant reduction in the need for acute care patient days under the proposed models of care.

Exhibit 2: Inpatient Rehabilitation Requirements of Proposed Models of Care

QBP	Discharge to IP Rehabilitation					
	Current		Proposed Models of Care			
	%	Number	%	Number	Pat. Days	Beds
Stroke	36.0%	189	40.0%	264	8,435	25.7
TJR	1.7%	39	10.0%	237	3,315	10.1
Hip Fx	12.6%	84	80.0%	486	14,592	44.4
Totals		312		987	26,342	80.2

1.6.3 Outpatient Care

Enhanced and/or expanded outpatient medical and rehabilitation care

The medical and surgical QBP models of care will require enhanced and/or expanded outpatient medical and rehabilitation care as part of the continuum care. These services will be delivered and/or supported by clinicians at the hub hospitals. To improve access to care, telemedicine and/or telehomecare will be used to support care provided by local hospitals and/or home care providers in patients' home communities.

1.6.4 Acute Care Costs and Revenues

Based on their current cost per weighted case, the projected QBP revenue for the large hospitals will be approximately \$1.7 million less than the estimated cost of care for QBP patients

Reductions in the number of atypical cases and the associated weighted cases along with reductions in the lengths of stay in acute care for these QBP patients will result in a reduction in the estimated cost of care in the larger/QBP funded hospitals of approximately \$1.8 million. However, it should be noted that, based on the current cost per weighted case of care in these hospitals, the projected QBP revenues for the larger hospitals will be approximately \$1.7 million less than the estimated cost of caring for QBP patients. If these hospitals are successful in reducing the lengths of stay for typical cases, they may be able to reduce their cost of caring for these patients to be less than the price being paid and thus move from a loss

to a profit position in caring for QBP patients³⁴. This should be an immediate objective for these QBP funded hospitals.

Exhibit 3: Projected Inpatient Acute Care Activity and Profit/Loss for QBP Care of in Large NE LHIN Hospitals

Inpatient QBP	Proposed Activity			Net Profit/ Loss for Large Hospitals
	HIG Wtd. Cases	Estimated Cost	QBP Revenue	
CHF	1,672	\$8,886,456	\$8,546,489	-\$339,967
COPD	2,445	\$13,017,867	\$13,086,600	\$68,733
TIA	117	\$647,732	\$645,051	-\$2,681
Ischemic Stroke	1,176	\$6,296,462	\$5,845,007	-\$451,456
Haem Stroke	133	\$711,168	\$723,854	\$12,685
THR	1,310	\$7,096,942	\$6,828,561	-\$268,381
TKR	2,383	\$12,901,242	\$12,361,599	-\$539,643
Hip Fracture	1,418	\$7,560,130	\$7,371,263	-\$188,867
AAA Repair	338	\$1,763,134	\$1,804,539	\$41,405
LEOD	214	\$1,120,826	\$1,049,813	-\$71,013
Total	11,206	\$60,001,960	\$58,262,776	-\$1,739,184

1.7 Implementation Plan

The Steering Committee developed a plan to guide the implementation of the recommended changes in the organization and delivery of QBP services. The following are the key elements of this implementation plan.

1.7.1 Key Elements of Implementation Plan

A Steering Committee to oversee implementation

Oversight for implementation of the integration models across the LHIN should again be entrusted to an Implementation Steering Committee made up of representatives of the hospitals, physicians and community agencies from across the LHIN.

³⁴ The hospitals cost per weighted case is based on the cost of caring for all patients; not just QBP patients. As a result, we have not modelled the impact on the hospitals' cost per HIG wtd case of reducing lengths of stay for QBP patients. The reduction should be significant and may result in the hospitals achieving a notional profit on QBP patients. The actual cost of caring for QBP patients under the proposed models of care and lengths of stay, as opposed to the implied cost as reflected in the use of costs per weighted case, will likely be much less than the current QBP price. The current QBP price is based on the provincial average cost per HIG wtd case; not the actual cost per case of caring for patients under the QBP best practice models of care.

Effective engagement of key stakeholders

Key to success of the proposed changes in the organization and delivery of QBP services will be effective engagement with and communication to the key stakeholders in this change.

Refinement of Clinical Integration Models

A fundamental step in implementing the QBP clinical integration models will be the engagement of the clinical leadership of the hospitals in the LHIN. They will need to be engaged in three inter-related processes.

First they will need to refine the work of this project to develop a single model of care and consistent clinical pathway/order sets for each QBP and then provide leadership for their implementation in each hospital in the LHIN.

Operating policies and agreements for medical QBP patient transfers between hospitals

Secondly, the clinical leadership and management of each hospital will need to develop and implement operating policies to facilitate the implementation of the QBP models of care for the medical QBPs (CHF, COPD and Strokes) within each hub grouping of hospitals. At a minimum, these operating policies will need to provide:

- Formal intra hub agreements on transfer and acceptance of ED patients as required for the QBP models.
- Formal intra hub agreements on patient repatriation as required for the QBP models.
- Formal intra hub agreements describing how support will be provided by the hub hospital and its medical staff to other hospitals in the hub and their medical staff as necessary to care for inpatients and outpatients as required for the QBP model.

Structures to provide surgical QBP services within one integrated program on multiple sites within a hub or across the LHIN

Thirdly, the clinical leadership and management of each hospital will need to develop and implement formal program management structures as well as operating policies to facilitate delivery of surgical QBP services as a one integrated program on multiple sites within a hub or across the LHIN. This will be required for cataracts, hip fractures and total joint replacements where there will be one program for each Hub and for vascular surgery where there will be one program across the LHIN.

Funding for post acute care services

The LHIN should work with the MOHLTC, with the support of the hospitals in the LHIN, to clarify and resolve the special issues in care delivery in the north, the current paucity of post acute care services related to the QBP services, the need to repurpose beds to provide for required inpatient rehabilitation and potential need to redirect funding to address these issues.

Accommodating the transitional discordance between costs and funding

The LHIN, in concert with other similarly affected LHINs should work with the MOHLTC to clarify and address the transitional funding issues that hospitals will have in the year that they absorb volumes from across the LHIN and from other LHINs. QBP volume targets and related funding should be set so as to allow for and accommodate the realignment of volumes among hospitals. It should be noted, that these transitional problems will likely resolve themselves over time as care delivery practices stabilize to reflect the better practice models of care.

Similarly, the LHIN should work with the MOHLTC to address the transitional funding issues that hospitals may have as they reduce the number of atypical cases to reflect the better practice models of care. Although costs will decline with the reduction in patient days (and weighted cases), they may not decline as quickly as will be required to accommodate the potentially dramatic reduction in QBP funding. Again, it should be noted, that as care delivery practices stabilize, these problems will likely resolve themselves over time.

1.7.2 *Initial Focus for Change*

Success in implementing the stroke model of care will significantly improve outcomes of care

The proposed Implementation Steering Committee should take advantage of the work of the Northeastern Ontario Stroke Network (NEOSN) to first focus on implementing the proposed stroke model of care. Much of this work has already been started by NEOSN and is a long way to completion. Success in implementing the stroke model of care will significantly improve the outcomes of care for stroke patients in the NE LHIN.

Work on the stroke model of care can serve as framework for implementation of the CHF and COPD models of care

The work on the stroke model of care can provide guidance for the implementation of the other two medical QBP models of care; CHF and COPD. It will provide the framework for:

- Engagement of the clinical leadership who are involved in the care of these QBP patients in NE LHIN hospitals. In the local hospitals many will be the same physicians who were involved in the NEOSN work.
- Developing a single model of care and consistent clinical pathway/order sets for each QBP.
- Formal intra hub processes, protocols and agreements for transfer and acceptance of ED patients as required for the QBP models.
- Formal intra hub processes, protocols and agreements for patient repatriation as required for the QBP models.
- Formal intra hub agreements describing how support will be provided by the hub hospital and its medical staff to other

hospitals in the hub and their medical staff as necessary to care for inpatients and outpatients as required for the QBP model.

Success in implementing the medical QBPs will provide a significant reduction in patient days and the use of medical beds in NE LHIN hospitals. These beds and the associated resources would then be available to be repurposed to provide for the significant amount of inpatient (and outpatient) rehabilitation that will be required in implementing the proposed stroke, hip fracture and TJR models of care.

Success in implementing the medical QBP models of care will also provide a framework for the subsequent implementation of the surgical QBP models of care.