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Report Submitted to: The Niagara Health System and The Hamilton Niagara Haldimand Brant LHIN

HayGroup®

Review of Reviews of the Niagara Health System

Report

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NIAGARA HEALTH SYSTEM
SYSTÈME DE SANTÉ DE NIAGARA
TOGETHER IN EXCELLENCE - LEADERS IN HEALTHCARE

Hamilton Niagara Haldimand Brant
LOCAL HEALTH INTEGRATION NETWORK
RÉSEAU LOCAL D'INTÉGRATION DES SERVICES DE SANTÉ
de Hamilton Niagara Haldimand Brant

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1.0 Introduction

1.1 Niagara Health System

NHS is Ontario's Largest Multi-Site Hospital Amalgamation

The Niagara Health System (NHS) is Ontario's largest multi-site hospital amalgamation comprised of six hospital sites and an ambulatory care centre serving 434,000 residents across the 12 municipalities making up the Regional Municipality of Niagara.

The large community hospitals in the NHS are:

- Greater Niagara General Site in Niagara Falls;
- St. Catharines General Site; and
- Welland Hospital Site.

The smaller, rural hospitals are:

- Douglas Memorial Hospital Site in Fort Erie;
- Niagara-on-the-Lake Hospital Site; and
- Port Colborne General Site.

The NHS also operates an ambulatory centre at the St. Catharines' Ontario Street Site (formerly known as Hotel Dieu Health Science Hospital).

The NHS presently has approximately 730 acute care, complex continuing care, and mental health beds as well as a 75-bed Long Term Care facility, 40 Interim Long Term Care beds, and 78 Addiction Treatment beds. A wide range of inpatient and outpatient clinics and services are provided at seven sites. The NHS has 4,200 employees, approximately 650 physicians, and over 1,100 volunteers, with an annual operating budget of approximately $360 million.

NHS Financial Situation

The NHS is forecasting an operating deficit of approximately $15 million for fiscal year 2007/08. NHS is also projecting an operating deficit of $16M in 2008-2009 and $15M in 2009/2010.

In August 2005 Niagara Health System (NHS) and the Hotel Dieu Hospital entered into an agreement to transfer responsibility for the Shaver Hospital and Niagara Rehabilitation Services from NHS to Hotel Dieu Hospital. In return NHS took over all programs run at the Hotel Dieu Hospital Ontario Street Site, including the physical plant. As part of the agreement NHS took on the Hotel Dieu's debt of approximately $30 million. As of March 31, 2007 NHS had a

$94 million working capital deficit and is projecting a $130 million working capital deficit by 2012.

HNHB LHIN has identified numerous operational issues that contribute to the financial pressures and may be perceived as putting patient safety at risk

1.2 Collaborative Review

NHS and HNHB LHIN Agreement to Undertake Collaborative Review

The Niagara Health System (NHS) and the Hamilton Niagara Haldimand Brant (HNHB) Local Heath Integration Network (LHIN) have agreed to undertake a collaborative review process to assist the NHS to develop an improvement plan to recover from their current financial deficit. The goal of both the NHS and the LHIN in undertaking this collaborative review is to ensure that NHS becomes a viable operating entity able to meet its cash obligations, improve its working capital position, complete its capital project, and maintain and/or improve both, quality of care and patient outcomes.

Preliminary "Review of Reviews"

As a preliminary step before determining the scope of a collaborative review, the NHS and the LHIN have contracted with Hay Group Health Care Consulting to conduct an analysis and assessment of all the reviews, reports and studies that have been conducted since the merger that formed the NHS. The deliverable from this initial review will be an assessment of the status of the implementation of the recommendations, and an evaluation of the outcomes and extent of the expected benefits (particularly financial) that have been achieved. This draft report presents the results of the review.

2.0 Review Process

The steps in the review process were:

- Identify the relevant reviews, reports, and studies conducted since March, 2000. The identified reports included:

Identified External Reviews

  - Review of NHS Inpatient Mental Health Service, Greater Niagara General Hospital (2005)
  - Chronic Kidney Disease Program Operational Review (2005)
  - Infection Prevention and Control Review (2006)
  - External Review of the Obstetrics and Gynaecology Services in NHS (2005)
  - External Review of Critical Care Services (2005)
  - Operative/Perioperative External Review (2006)
  - External Review of NHS SCGH and WGH Emergency Departments (2006)
  - Emergency Services in Niagara Region: Addressing the EMS/ED Interface (2007)
  - December 2007 HCM Report

  The December 2007 Health Care Management Group (HCM) Performance and Operational Improvement project report was initially considered to be outside the scope of the review because of the lack of opportunity for NHS implementation of its recommendations. However, because of the overlap between the recommendations of the HCM report, and some of the recommendations of the prior reports, the HCM report was referred to validation of potential operating cost impacts.

HSRC Niagara Restructuring Report

  The March, 1999 Health Services Restructuring Commission (HSRC) Niagara Region Health Services Restructuring Report, which pre-dated the formal establishment of the NHS, was also reviewed, particularly from the perspective of its recommendations for the health system capacity in the Niagara Region.

- Read the reports and create an inventory of the report recommendations, including the steps recommended to be taken, the individual or group responsible for the action, the anticipated outcome (in terms of both changes in processes and the resulting utilization, quality, or cost impact), and the timing for both the

action and the anticipated outcome. (Note: For each external review, the NHS uses a recommendation tracking template to monitor implementation status. The template lists the recommendations, the associated action items, the most responsible person, the timeline, and the implementation status. These templates were used by the consultant as an alternative to creating a new inventory.)

- Review the results of the NHS recommendations status reports, and identify those departments, programs, and individuals to be contacted for follow up, either via e-mail, or through face to face meetings.
- Conduct meetings and teleconferences with selected NHS representatives in order to further probe regarding the status of the recommendations and the outcomes, and to confirm that all reasonable steps had been taken to overcome barriers or confounding factors that hindered achievement of anticipated benefits.
- Document the results of the reviews of prior reports, and the feedback from NHS representatives and prepare a summary report that could be used as the starting point for a more comprehensive collaborative review.

The following section of this report presents the draft findings from the review.

3.0 Findings

Findings Based Primarily on Information Provided by NHS

The findings presented here are based on the consultant's review of the original review reports, the NHS documentation of the status of recommendation implementation, and the feedback from NHS staff during interviews and in response to e-mailed questions. Except where there is published financial and performance data available, the consultant has not independently validated the accuracy of the information provided by the NHS.

HCM Report Included as Sole Example of External Review Focusing on Operating Costs

While the focus of the proposed collaborative review is on the factors contributing to the current and projected financial status of the NHS, most of the external reviews were focused primarily on quality assurance issues, and few of the recommendations explicitly identified either operating cost or savings implications of implementation. Only the HCM report focused on operational cost reduction opportunities, and while originally considered outside the scope of this review, it has been included because it provides information regarding the performance of NHS versus peers, and because the implementation of many recommendations of the prior reviews has been rolled into the implementation plan for the recommendations of the HCM report.

3.1 Review of External Reviews

The reviews covered in this section were identified as the external reviews conducted for NHS since 2003. The NHS provided the consultant with a copy of the original review report and a spreadsheet documenting the status of each recommendation from the review.

3.1.1 Review of NHS Inpatient Mental Health Service, Greater Niagara General Hospital (2005)

Focus on Quality of Patient Care

This review was conducted in June 2005 by administrative and clinical representatives from the St. Joseph's Healthcare Hamilton Mental Health Program. The review was initiated in response to the concern that the GNGH inpatient mental health service "was not functioning in a way that was conducive to the delivery of optimal patient care". Issues raised during the review related to medical staff workload and clinical practice, nursing staff issues, unit safety, quality of care, therapeutic environment and best practice, and communication between professional staff and patients.

There were approximately 24 recommendations in the report. All of the recommendations except 3 have either been fully implemented,

or implementation is on track with plans. Implementation of 2 of the 3 outstanding recommendations will be addressed through the establishment of the Tidal model of care[1]. The other outstanding recommendation relates to the capacity of the ED to assess and stabilize mental health patients in crisis, and a plan to address cross program issues still needs to be developed.

The only explicit reference to unit operating costs in the review is the annual cost of more than $100,000 for one to one patient watch, provided by security staff. Criteria for assessment of patient need for one to one care have been developed, but no reduction in cost is expected.

3.1.2 Chronic Kidney Disease (CKD) Program Operational Review (2005)

Plan to Locate Regional Dialysis Centre at SCGH

Late in 2004, the CEOs of the NHS and the Hotel Dieu Hospital proposed that there be an external review of Niagara Region Nephrology Program. The HSRC recommended that the inpatient dialysis program at Hotel Dieu be transferred to the NHS and that the Regional Dialysis Centre for both inpatient and outpatient services be located at the St. Catharines General Hospital (SCGH) site. The external review agreed that peritoneal dialysis and haemodialysis services should be provided at the SCGH site, and this recommendation has been implemented.

There were 38 recommendations in the external review report, 15 of which have been fully implemented, and 20 that are tracking on target. The three recommendations that are not on target for implementation are:

2 Recommendations Not on Target for Implementation

- Standardize clinical documentation records consistent with NHS philosophy and computerization standards/principals. The NHS key principles and tools for computerized clinical documentation have not yet been determined in the CKD program.
- Review and revise hepatitis protocols, given new information from CDC. Hepatitis screening testing is changing within the NHS and Public Health as new testing techniques are developed. The plan is to review the CDC guidelines and develop new protocols with Infection Control.

[1] The Tidal Model is an interdisciplinary model of mental health care, which emphasises the need for patient empowerment.

Report Emphasized Importance of Appropriate Staffing, but Did Not Identify Potential Impacts

The report emphasized the importance of establishing staffing models to optimize resource utilization and clearly define the role of each direct care provider. It provided a review of recommended staffing standards reported in the literature or applied in other jurisdictions, but did not assess the potential impact of these standards on staffing requirements for NHS. There were no recommendations related to staffing levels listed in the executive summary. The recommendation related to introduction of the clinical coordinator role is being studied in the context of provincial balanced budget requirements.

No Estimates of Cost Impacts of Recommendations

The report also recommended that "the Regional Centre develop the infrastructure required of a Regional Centre". There were no estimates of potential operating cost impacts of implementation of this (or any other) recommendation.

3.1.3 Infection Prevention and Control Review (2006)

A University Health Network review team completed the infection prevention and control review in November, 2006. The focus of the review was the effectiveness of infection prevention and control practices at NHS.

There were 25 recommendations, 11 of which have been completely implemented. Of the remaining 14 recommendations, 10 are tracking on target, and 4 are behind target. The four recommendations behind target are:

Four Recommendations behind Target

- Three of the five NHS infection control coordinators should be required and supported to obtain a Certification in Infection Control (CIC) within 2 years of employment. The target for achieving the CIC has been extended from the original deadline of December 2007 to June 1, 2008. The remaining 2 staff members (who are recent hires) will be required to obtain their certification by 2009.
- The operating rooms at the GNGH site require urgent renovation, as the risk of cross contamination of equipment and of compromised patient safety is significant. Master Planning underway at the GNGH site includes the OR. In addition, the OR renovations were identified in 2006 as part of the regional "Its Our Time Campaign". The target date for the start of the OR renovations is projected for September 2008. Covered carts are now being used for contaminated equipment, as a short term solution prior to completion of renovations.
- Storage of sterilized and dirty equipment should not take place in the operating rooms unless sufficient well placed storage areas

can be provided to manage the volumes properly. As of November 2007, additional storage space was made available as part of the new Ambulatory Care Redevelopment Project. In December 2007, an expanded renovated patient holding area – 'pre-surgery' was completed.

- Use of flash sterilization should be restricted to emergency circumstances only, and should never be routine practice in the operating room cluster. NHS now requires that all flash sterilization be documented in the patient chart. An inventory of instruments required was completed in November 2007. Additional equipment is being purchased which will allow for flash sterilization to occur in emergency situations only. The new equipment will be purchased by the end of the current fiscal year, and the "Flashing in Only Emergency Situations" policy will be implemented.

The recommendations with cost impacts explicitly identified (although not quantified) were:

- Increase number of infection control coordinators. One additional practitioner was hired.
- Use of a pooled swab technique for MRSA screening as a cost saving measure. Technique has been tested and is being implemented.
- Provision of epidemiological resources to support the infection control coordinators. The Regional Infection Control Network is providing support to the program.

3.1.4 External Review of the Obstetrics and Gynaecology Services in NHS

Functional Program for New St. Catharine's Hospital Will Accommodate Projected Consolidated Volume

The functional program for the new St. Catharine's hospital is based on projected activity volumes assuming a single site for women's and children's services. The new hospital foot print on the maternal/child floor will accommodate either a single or a consolidated model, based on the ultimate decision of the NHS Board of Trustees and the approval of the HNHB LHIN and the MOHLTC. If the decision is a single model, then the excess space will be used as classrooms and clinic space. If consolidated, it is on the same foot print but a different layout. A decision on single vs. consolidated will need to be made before the successful bidder completes the internal construction of the maternal/child floor. Community consultation and education regarding the quality of care and patient safety benefits of consolidation will be necessary.

A separate recommendation to consolidate all Level II neonatal care at one regional site was rejected unless it was to be done in conjunction with consolidation of the entire program.

3.1.5 External Review of Critical Care Services (2005)

The external review of critical care services was conducted in November 2005 by critical care physicians from UHN and Hamilton Health Sciences Centre. The MOHLTC had recently (March 2005) released a report and recommendations on critical care services, prepared by the Ontario Critical Care Steering Committee, and the NHS wished that their critical services be reviewed in light of that report.

There were 19 recommendations in the review report, most related to the proposed role of each NHS site in the provision of critical care services, and the establishment of the structures, protocols, and processes at each site to support its designated role.

Business Case Predicted $1.2 Million Increased Cost for SCGH ICU Transition to Level 3

9 of the 19 recommendations have been fully implemented, including the major recommendation, that the SCGH site be designated as a Level 3 critical care service, with an intensivist-led, closed model of clinical administration. A business case for the establishment of a closed ICU was prepared. The estimate of the cost of conversion of the 12 bed ICU from Level 2 to Level 3 was based on the $100,000 per bed differential in the MOHLTC funding formula for new critical care beds, and was equal to a total additional annual operating cost of $1.2 million. The NHS Board approved the move to a closed, Level 3 ICU, on the basis of the review recommendations, and the business case that assumed that NHS would receive additional funding.

Level 3 ICU Established, but No Additional Funding Provided

The SCGH ICU was transitioned to a Level 3 ICU in June 2007, with the assistance of a Coaching Team, and has been recognized as a Level 3 unit by both the MOHLTC and CritiCall. The NHS applied for increased funding for the Level 3 ICU but the application was rejected, since the funding formula is for new beds only, and not conversions of existing beds.

Increased ICU Capability Has Attracted Higher Acuity Patients, Further Increasing Costs

The Coaching Team recommended proceeding with moving to a Level 3 ICU at SCGH site while acknowledging that operating costs would increase. The business case was based on provision of a higher standard of care for Niagara residents previously accommodated in the Level 2 ICUs. The NHS is now experiencing even higher ICU costs than projected because CritiCall referrals have increased and higher acuity patients who had previously been hospitalized outside Niagara are being repatriated.

Recommendation #12 was to implement core-staffing ratios by level of service and patient acuity and consistently apply these staffing standards across all sites. Staffing adjustments were made in April 2007, ar
Welland

Three of the 10 review recommendations that have not been completely implemented are on track. The 7 recommendations that are behind schedule are:

7 Recommendations behind Schedule

- Transfer 1-2 beds from GNGH and Welland to SCGH to create independent ICU and CCU. Program is re-evaluating this recommendation in light of decrease in ICU beds because of closure of DMH and PCG level 1 beds (which generated annual savings of approximately $400,000).
- Develop physician-led Critical Care Response Team (CCRT) at SCGH. NHS hopes to receive funding in 2008.
- Create nurse-led CCRT for smaller sites. Application for alternate-model CCRT (2006/07 was not successful, and will be resubmitted at next call.
- Provide short-term monitoring with support from CCRT as GNGH or Welland. Application for alternate-model CCRT (2006/07 was not successful, and will be resubmitted at next call.
- Provide additional professional and career development opportunities through the creation of CCRTs. Dependent on Critical Care Secretariat approval of applications.
- Create 8-10 bed consolidated units at GNGH and Welland. Program is re-evaluating this recommendation in light of

decrease in ICU beds because of closure of DMH and PCG level 1 beds.

- Develop a system to monitor the availability of critical care beds across the network. SCGH ICU is capturing CCIS data. All regional ICUs accept CritiCall patients. 1 800 ICU Bed is for discussion at the CC Administrative Committee.

Four of the 7 outstanding recommendations are contingent on approval of CCRT applications. Two other recommendations are linked to determination of the future role of each NHS site, to be considered through the Program Planning process.

3.1.6 Operative/Perioperative External Review (2006)

The external review of the NHS surgical services was conducted by reviewers from UHN. The purpose of the review was "to assess and identify opportunities for enhancements in the provision of service within the operative/perioperative program, identify opportunities to achieve cost savings, and identify where centres of excellence can be supported for surgical services in Niagara, building on capacity and critical mass".

Only 1 of 76 Recommendations Explicitly Referred to Cost Savings

There were 76 recommendations in the review report, only one of which (#13, closure of surgical services and Fort Erie and Port Colborne) explicitly referred to cost savings. Other recommendations had implicit cost or saving impacts (e.g. more efficient use of OR time, standardization of trays), but the reviewers did not attempt to estimate the magnitude of any additional costs or saving opportunities.

The NHS has subsequently developed estimates of cost savings opportunities through:

- The HCM Report
- The OntarioBuys Operating Room Supply Chain Pilot Business Case for NHS (incorporating the Sullivan Healthcare Consulting estimate of $1.7 million surgical supply cost saving opportunity)

44 of the 76 recommendations have either been completely implemented, or are on schedule for implementation. 26 recommendations are behind schedule, but many of these recommendations will be addressed through the implementation of the HCM targets.

Three recommendations are substantially behind schedule:

3 Recommendations Substantially Behind Schedule; 2 Dependent on Program Consolidation

- Closure of surgical services at Fort Erie and Port Colborne. A confidential implementation plan and associated costs have been identified, and the Clinical Steering Program Planning Committee will be responsible for the roll-out.
- Transfer of surgical services from Fort Erie and Port Colborne to Welland County Hospital. A confidential implementation plan and associated costs have been identified, and the Clinical Steering Program Planning Committee will be responsible for the roll-out.
- Implement a bar coding system for equipment and supplies and an instrument tracking system. The program is working to complete the business case. The program has also completed site visits as part of the development of the case.

Three recommendations of the external review were rejected by NHS. For two of these recommendations, subsequent analysis by NHS determined that there was no objective information to support the recommendations. The third recommendation was rejected because it had already been addressed through the infection control program.

The February 2007 Peri-Operative Improvement Expert Coaching Team Follow Up Report concluded that there had been significant change at NHS since the external review.

3.1.7 External Review of NHS SCGH and WGH Emergency Departments (2006)

Reviewers from Credit Valley Hospital completed an external review of the NHS SCGH and WGH EDs in March 2006. The review was prompted by the long waiting times, increased numbers of patient complaints, and high numbers of patients leaving without being seen at the two EDs.

The reviewers made 43 recommendations, 16 of which were applicable to both sites, 14 applicable to just the SCGH site, and 13 applicable to only the WGH site. The report did not specify the anticipated operating cost impacts of implementation of the recommendations.

Five of the recommendations have been implemented, and implementation of most of the remaining recommendations is in progress. A business case is being developed for recommendations #15 to 24, which relate to patient flow and bed management.

Move of Prompt Care to SCGH Site Deferred Until Availability of New Hospital

The recommendation that the Ontario Street Prompt Care Centre (PCC) be moved to the SCGH site was rejected (for the short term) by NHS. However, the planning for the new St. Catharine's hospital is based on collocation of the Prompt Care Centre and the ED. The NHS (prior to the review) had investigated the potential to move the PCC to the SCGH site, and had determined that the lack of physical capacity to add the necessary parking spaces would be a constraint. As well, the actual visit volume for the PCC (33,000 visits per year) greatly exceeded the originally anticipated 20,000 visits, and the consolidated volume at the SCGH could not be accommodated.

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The final recommendations of the HCM report did not identify any operating cost savings in the NHS EDs.

3.1.8 Emergency Services in Niagara Region: Addressing the EMS/ED Interface (2007)

In February 2007, Dr. Brian Schwartz conducted a review of the interface of the Emergency Medical Services and Emergency Department interface in Niagara Region. The review was to address issues of emergency department overcrowding and ambulance offload delays.

The recommendations in the review report included standardized measurement of performance indicators, consistent application of benchmarks, implementation of a shared model of care, and rapid transfer of CTAS 4/5 patients. Other recommendations were that inter-facility transfers be facilitated by addition of an Advanced Care Paramedic, in-hospital patient flow be improved, and an NEMS patient distribution model be developed.

The recommendation to add an Advanced Care Paramedic to support inter-facility transfer was not implemented, since it would not be possible to have that ambulance be dedicated to inter-facility transfer (i.e., it would be required to respond to community calls). The NHS is investigating the possibility of utilizing a critical care nurse for inter-facility transfers.

The recommendation to address NHS patient flow issues has been referred to the ED Program Management Team and the site utilization committees.

NHS/EMS senior management submitted a request to the MOHLTC to become one of the four provincial pilot sites for the Patient

Distribution System in November 2007. This request was not accepted by the MOHLTC.

3.2 HCM Report

Late in 2007, the Health Care Management Group (HCM) was contracted to assist the NHS in identifying and pursuing opportunities to improve operational and cost effectiveness. HCM concluded that:

> "Based on a peer performance screening exercise, consistent with methodologies used in operational reviews, ... NHS' theoretical performance screening is in the 15th percentile of 22 hospitals benchmarked against 2006/07 peer data, that is, better than 85% of recent HCM clients."

Savings/Revenues Opportunities of $13.0 Million

Based on 2007/08 budget data, the NHS established an overall target for savings/revenues of $13.0 million. Additional one-time investments of at least $1.5 million would be required to support achievement of the savings targets.

The savings/revenue opportunities were split into those which could be achieved without program consolidation (i.e., independent initiatives), and those that would require program and service realignment across sites. The estimated split of these opportunities was:

Distinction between Initiatives Requiring Program Consolidation and Independent Initiatives

- Independent initiatives - $9.2 million savings, with one time investment of $1.3 million
- Program consolidation initiatives - $3.7 million savings ($1.2 million related to maternal child program consolidation), with one time investment of $0.2 million

NHS Departments Commit to Savings Targets

The NHS operational units were required to commit to the savings targets, but have been given flexibility to consider alternative approaches to achieving their savings targets. The NHS expects to

With the addition of other items such as ED AFA, parking increase, and PACs, the NHS estimates that $6.7 million in savings could be achieved in fiscal year 2008/09 and an additional $5.5 million in 2009/10. Program consolidation initiatives would generate savings for fiscal year 2010/11 (or 2011/12 for the maternal child consolidation at the new St. Catharine's hospital).

NHS Has Described Majority of HCM Savings as Having Been Previously Identified Internally

Many of the strategies identified by the NHS departments to achieve the saving targets in the HCM report are based on initiatives recommended in the external reviews presented in section 3.1 of this report, or were included in the NHS balanced budget option paper presented to the HNHB LHIN in October 2007. Examples of previously identified savings initiatives include FOHSCI and product standardization. In their 2008-10 HAPS Overview, the NHS said that only $4.7 million of the HCM $12.3 million identified savings were over and above savings opportunities previously identified by NHS.

HCM Review Prompted Formal Assignment of Previously Identified Savings Targets to Departments

Thus, $7.6 million of the savings identified by HCM were previously identified by NHS, but not yet achieved, either because they were dependent on program consolidation, or the steps required to achieve the savings had not yet been fully implemented. The HCM review process appears to have provided the impetus to more formally and aggressively establish savings targets and savings realization plans for the relevant departments.

3.3 HSRC Restructuring Recommendations

The final HSRC Niagara Health Services Restructuring Report was released in March 1999. The HSRC recommendations were based on the recommendations of the Niagara District Health Council (DHC) Hospital Restructuring Project, completed in December 1996. Key recommendations of the HSRC were:

Key HSRC Recommendations

- Amalgamation of Niagara Region hospitals (except for West Lincoln Memorial and Hotel Dieu) into one corporation
- Consolidation of all inpatient acute care and emergency care in St. Catharines at SCGH, with most ambulatory services and urgent or prompt care services at Hotel Dieu Hospital
- Develop a plan for sizing and siting of acute and non-acute services in the region

The HSRC recommendations for hospital beds (to meet the needs of the projected 2003 regional population) are shown in the following table, along with the actual number of hospital beds as of 2007.

Exhibit 1: NHS and HDH Hospital Beds, HSRC Recommendations (2003) and 2007 Actual

Type of Bed	HSRC Recommend. (2003)	NHS Actual (2007)	Difference
Acute Care	627	533	94
Acute Mental Health	75	58	17
Subacute Beds	70	0	70
Acute Care Subtotal	**772**	**591**	**181**
Rehabilitation Beds	85	37	48
Complex Cont. Care	246	274	-28
Non-Acute Subtotal	**331**	**311**	**20**

The HSRC recommended beds for 2003 were based on a projected Niagara Region population of 426,505. The 2006 Census reported a Niagara Region population of 427,421.

Actual NHS Hospital Beds Fewer than HSRC Recommendation, Except for CCC

For every category of bed, except complex continuing care, the actual number of hospital beds in the NHS and HDH are less than the HSRC recommended for 2003. The deficit in beds is greatest for rehabilitation beds, with fewer than half of the recommended rehabilitation beds available in the region. While the number of complex continuing care (CCC) beds exceeds the HSRC recommendation, the NHS reports that 85% of CCC beds are occupied by ALC patients.

HSRC Recommended Expanded Home Care Services and Supportive Housing in Niagara

The HSRC recommended that the Niagara Region have a minimum of 3,393 long-term care beds for 2003. This recommendation was based on the assumption that parallel investments would be made in expanded home care services and significantly increased supportive housing capacity. In 2005, the Niagara Region had 3,492 long-term care beds, 99 more beds than recommended by the HSRC. However, there has been no significant increase in supportive housing capacity in the Niagara Region.

3.4 Utilization Management Structures and Practices

NHS 2008-10 HAPS Overview Identifies No Savings Opportunities through Utilization Management

The NHS 2008-10 HAPS Overview from November 2008 provides a summary of HAPS initiatives related to revenue generation and each of the 7 steps outlined in the HAPS guidelines. No savings opportunities are identified for Step 5 (Utilization Management) or Step 6 (Clinical Services/Program Consolidation).

Absence of Identified Utilization Management Cost Savings Opportunities is Surprising

While there is no recent review of utilization management opportunities at NHS, patient flow, and particularly ALC issues, have been identified as impediments to efficient and effective provision of health care services in the NHS. It is surprising that there are no identified savings opportunities related to improvements in utilization in the NHS. The comparison of recommended and actual NHS hospital beds (presented in the preceding section) shows the need for continued utilization management in the NHS to ensure that there can be efficient use of the available, limited bed resource.

This section of the report reviews the utilization management structures and processes at NHS, and provides a high level examination of the opportunities to improve patient flow, and thereby achieve further efficiencies.

3.4.1 Utilization Management Structures

Site Utilization Committee Roles Reflect Pre-Amalgamation Legacy

Each of the larger NHS acute care hospital sites has a site utilization committee. Until recently, the mandate, membership, and meeting frequency of each site utilization committee reflected their legacy (i.e. pre-amalgamation) roles, and were not consistent. For example, the WGH Quality of Care and Utilization Committee met on a quarterly basis and included quality of care in its mandate. The GNGH Clinical Resource Utilization Team met at the call of the chair, and met only once during 2007.

Move in 2007 to Standardize Site Utilization Committees

During 2007, a standard terms of reference was created for each site utilization team, and the site teams are transitioning to this standard. The purpose of the site utilization teams is described as:

> "To ensure the optimal use of clinical and hospital resources in the provision of quality patient care. The sites benchmark services and programs based on the following clinical targets:
>
> - 50^{th} percentile in utilization and efficiency must be maintained with the overall goal of moving towards the 25^{th} percentile

The utilization teams will meet bi-monthly or at the call of the Chair.

The utilization teams report to the Regional Utilization Forum (RUF) that meets quarterly. The RUF reports to the Program Planning Steering Committee and the MAC. The purpose of the RUF is "to set overall regional direction for utilization recommendations and initiatives to improve access to, and delivery of, quality health care services. The committee will ensure that

utilization activities are in accordance to the business planning brief and the overall direction set by the Resource Planning Committee".

While there is no reporting relationship between the RUF and the Resource Planning Committee (RPC), the majority members of the RPC also sit on the RUF.

NHS 2007/08 Utilization Goals and Action Plans

The NHS utilization goals and action plans for 2007/08 included:

- Achieving the 50th percentile with all programs and striving towards the MOHLTC best practice benchmark
- Identify and implement key "order sets" within programs
- Improving transitions from acute care to subsequent care destinations for all patients, including ALC
- Revising corporate bed management processes to improve patient flow/bed management policies
- Developing "code gridlock" package with above census and mix gender policy development to enhance patient flow
- Work towards achieving 10 a.m. discharge time

Absence of UM Cost Savings Targets Contrasts with NHS Development of Specific Targets from HCM Review

There were no estimated cost savings opportunities associated with these goals and plans. The absence of cost savings targets for utilization management activities contrasts sharply with the NHS process for establishing operational efficiency (i.e. productivity) cost savings targets for each department through the HCM review process. For operational efficiency opportunities, department managers have been required to commit to concrete savings targets, which are then incorporated in their budgets.

3.4.2 Length of Stay Targets

NHS LOS Target Based on Median Canadian Hospital Performance

The NHS uses length of stay targets for "typical" patients based on the 50th percentile length of stay of Canadian hospital for each CMG, age group, and patient complexity combination. This is a more aggressive target than the standard CIHI national database ELOS, since it is based on the median distribution of hospital length of stay performance, rather than the average length of stay of pooled national data. During 2007/08, with the move by CIHI from the CMG Plx methodology to the CMG+ methodology, the 50% percentile targets have not been available, and NHS has instead used the CIHI ELOS as a reference.

Preferable to Use Ontario-Specific LOS Targets

Ontario hospitals have shorter acute lengths of stay than hospitals in most other provinces because of the inclusion of rehabilitation beds in acute care data from some other provinces, the more aggressive

focus on identifying ALC days in Ontario, and the emphasis on length of stay reduction by the HSRC.

NHS LOS Performance Has Been Improving and is Better than Ontario Average

Hay Group Health Care Consultants usually recommends that Ontario hospitals target for typical patient lengths of stay equal or less than 94% of the CIHI ELOS. Currently, the average typical case LOS in Ontario is 93% of the CIHI national average typical LOS. The NHS is currently at 84% of the CIHI ELOS, better than the provincial average of 93%. The NHS acute LOS as a percentage of the CIHI ELOS has decreased from 90% in 2005-06 to 84% at November 2007, showing that there has been an improvement of length of stay management, coupled with more comprehensive tracking (and removal from LOS comparisons) of ALC days.

CIHI/HayGroup Benchmarking Identified Opportunities to Reduce LOS at NHS, Based on Best Practice

However, in the CIHI/HayGroup Benchmarking Comparison of Canadian Hospitals report for 2006, the estimated opportunity for the three large NHS acute care sites to reduce their use of inpatient days was greater than the national average (17.0% of days were conservable at best practice, versus 14.6% for the peer average). Four Ontario community hospitals had a higher percent of typical patient days deemed conservable, while 13 had a lower percent. Since 2005/06, the NHS acute care length of stay has reduced, and ALC days have been more comprehensively identified and removed from the typical patient length of stay calculations.

The utilization reports presented at utilization task force meetings show conservable day opportunities by program and site. While on an overall basis NHS has achieved its conservable day targets, if credit is given for programs under the targets, there have been opportunities within other specific programs and sites. Physician-specific length of stay performance reports are provided to clinical chiefs, and it is up to the individual chiefs to determine what steps (if any) should be taken to share information with individual physicians or to develop plans to change length of stay patterns.

Opportunity for Reduction in Use of Acute Days

Based on national (CIHI) 50th percentile targets, if conservable days are netted against days under target, the NHS is approximately 2 beds below the benchmark for conservable bed days. If days under target are not subtracted from potentially conservable days, then the 50th percentile targets would suggest that there could be almost 22,000 fewer inpatient acute care days used per year by NHS, which equates to 67 beds at 90% occupancy. Half of the theoretical conservable days would be at the SCGH site.

NHS Should Not Net Days Under Target Against Days Over Target

The NHS needs to determine whether its length of stay performance assessment should be based on netting days under target against days over target. Doing so can mask savings opportunities, since the

physician or program with conservable days will be excused from reducing LOS if their peers have similar numbers of days of stay below the target. When conducting operational reviews, the Hay Group Health Care Consulting approach is to not net days under target against days over target, and to focus on those programs or physicians whose individual LOS performance exceeds the targets.

Focus of Opportunity is at SCGH Site

If the 50th percentile target is used, and days under target are subtracted from conservable days, then the estimated opportunity to reduce use of medical/surgical beds at SCGH was approximately 5.5 beds in 2006/07. If days under target are not subtracted from conservable days, then the estimated opportunity to reduce use of medical surgical beds at SCGH was 29 beds. This demonstrates the magnitude of the difference of the estimate of opportunity when days under target are not subtracted.

NHS Has Developed UM Monitoring Capacity, but Needs to Enforce Accountability for Meeting Targets

NHS has done an excellent job in developing the measurement capability to monitor utilization, but we believe that more could be done to enforce accountability for achieving the goal of achieving 50th percentile performance and moving towards best practice. Our review of the minutes of the utilization committee minutes showed that the primary emphasis of the meetings during 2007 was communication and education of the participants. This may have been necessary during the transition of the committees to a standardized role, but given the financial situation of the NHS, greater attention to achieving cost savings through improvements in utilization is required. Future HAPS submissions should identify cost savings opportunities through utilization management, based on the stated NHS goal of achieving at least 50th percentile performance, and moving towards best practice.

Incumbent on NHS to Targets to Achieve Savings through Clinical Efficiency

While achieving savings through reduced use of inpatient days is challenging, since opportunities may be spread across units and small reductions may not be enough to support changes in nurse staffing assignment, the combination of the NHS financial situation, the high occupancy in NHS hospitals, and stated goal of NHS to move to best practice in utilization management, makes it incumbent on NHS to establish a structured plan to achieve the savings, just as has been done for operational efficiency.

3.4.3 Alternate Level of Care Days

39% of NHS Acute and Chronic Beds Used by ALC Patients

Alternate level of care (ALC) days continues to be the most significant utilization challenge for the NHS. During the 2nd quarter of 2007/08, there was an average of 141 ALC patients in acute care beds, and 129 ALC patients in complex continuing care (CCC or chronic) beds. This represented 39% of the total NHS acute and

chronic bed capacity. Only 15% of the available chronic beds are used for medically complex patients (the patient population for which these beds are intended).

NHS Documents Attribute ALC Problem to Lack of LTC and Rehab Beds

The December 2007 Q2 Utilization Report attributes the high ALC rate to "the lack of LTC and Rehab beds in the community and an aging population". The October 2007 NHS Briefing Note – ALC/Flex Bed Pressures says "the root cause for the ALC pressures in Niagara is due to the inadequate supply of long-term care and rehabilitation beds".

44% of NHS ALC Patients Discharged Home with Support (incl. Home Care)

The December 2007 Q2 Utilization Report describes the actual discharge destinations of ALC patients in acute care beds as 29% CCC, 25% home care, 19% home with support (supportive housing, retirement home, etc.), 10% residential LTC, 11% expired, and 6% transferred to other acute care. The CCC category includes rehabilitation beds. 44% of ALC patients are actually discharged home with support, if referrals to home care are included.

NHS Case Manager's Report Identifies Most Appropriate Placement of ALC Patients as Institutional Beds for Most Patients

In the same report, the Case Manager's snapshot data identifies the most appropriate placement of the NHS ALC patients as:

- LTC – 41% of ALC patients
- Slow paced – 39%
- Palliative – 9%
- Other (including community services) – 6%
- Shaver/rehab – 4%
- Chronic – 1%

Opportunity to Use Chronic Beds for Slow Stream Rehab

The October ALC/Flex Bed Pressures briefing note describes Chronic beds in the data presented above as being equivalent to CCC beds. The HSRC defined the appropriate patients for placement in designated chronic beds as including medically complex continuing care patients, palliative patients, and respite patients. Increasingly, Ontario hospitals are modifying the programs and services available to residents of designated chronic beds to include slow stream rehabilitation. Rather than treating the chronic beds in Niagara as primarily a holding area for ALC patients, the NHS should examine opportunities to modify services to meet the needs of the 41% of ALC patients who need slow paced rehabilitation in the designated chronic beds. This is particularly true, if as was reported, there are very few medically complex Niagara residents who require complex continuing care.

CCAC Review of NHS ALC Patient Population Confirmed that Patients Designated for LTC Bed Required LTC Bed

The NHS staff provided the results of a recent CCAC assessment of the NHS ALC patient population. This review examined only NHS ALC patients who had previously been assessed and designated for discharge to a LTC bed. The results of the assessment of 88 patients was that the CCAC concluded that there were no ALC patients designated for LTC who could be considered candidates for placement at home, with home care, as an alternative to placement in a residential LTC bed.

CCAC Review Did Not Assess Whether Enhanced Home Support or Supportive Housing Could Provide Alternative to LTC Placement

The CCAC assessed the potential for discharge to home using current home care eligibility. A demonstration project has recently been initiated that will provide enhanced home care support, but this higher level of support was not considered during the CCAC review. The potential for placement of these ALC patients in supportive housing, if available, was also not considered.

Focus on Beds as Solution to NHS ALC Problem

Thus, while 44% of NHS ALC patients are actually discharged home with support (including home care) the most appropriate placement identified by Case Managers is overwhelmingly (94%) in an institutional bed (e.g. LTC, rehab, or CCC). The utilization management committee meeting minutes refer almost exclusively to the need for more beds as the solution to the NHS ALC challenge.

MOHLTC LAP Report Emphasized Need for Supportive Housing

The consultants obtained a copy of an unreleased confidential draft 2005/06 Local Area Planning (LAP) Report for the Niagara Community Care Access Centre, dated September 2006. While never publicly released, the draft report concluded that the most significant need for long-term care services in Niagara was for supportive housing spaces.

MOHLTC Decision to Not Release LAP Report Has Promoted Emphasis on Beds as Only Solution

We are struck by the contrast between the draft conclusions of the LAP team that increasing supportive housing capacity in Niagara is the most important step required to meet future LTC needs, and the NHS focus almost exclusively on LTC beds. We believe that the decision by the MOHLTC not to publicly release the Niagara LAP report has contributed to the NHS focus on LTC beds as the only solution to the ALC challenge.

Information from LAP Report Should Be Provided to NHS and ALC Task Force

While the recommendations of the Niagara LAP team may be questioned, withholding their report has meant that the NHS does not have access to the excellent work the team did in identifying the inventory of LTC services in the 4 quadrants of Niagara, or the descriptions of community based services that may help Niagara residents maintain their independence in their own home. The Niagara CCAC LAP report should be made available to the ALC Task Force (a subcommittee of the Niagara Emergency Services

Network, with representation from NHS, as well as other regional stakeholders).

Focus Should Be on Increasing Supply of Community Based Services and Supportive Housing

While increasing the supply of community based services and supportive housing is beyond the control of the NHS, acknowledging the potential for these services to contribute to reduction of ALC patient volumes, and not just pushing for increases in LTC beds, would be a more balanced approach. Given the long elapsed time between announcement of funding for new LTC beds and the actual availability of these beds, increasing the availability of community based services may provide a more immediate partial solution to the NHS ALC problems.

3.4.4 Physician Impact Analysis

The NHS has a centralized physician impact analysis process that grew out of the processes in the individual hospitals prior to amalgamation. This process requires that the impact on clinical activity, staffing, ongoing operating costs, and one time costs, be identified. Any identified needs for physicians must be compatible with the assumptions in the NHS medical manpower plan. The impact analysis process is linked with the centralized physician recruitment process.

Consultants Reviewed Examples of Application of Impact Analysis Process

Because many of the reviews studied for this project recommended addition of medical staff (e.g. intensivists, anaesthetists, psychiatrists) we reviewed examples of completed impact analyses templates to look for evidence that the process had been applied to the review recommendations. In most of the completed impact analyses we examined, the requests for new physicians were characterized as replacement of retired physicians or new physicians to fill vacancies. The net operating cost implications for these new physicians were determined to be minimal.

Impact Analysis Process Not Yet Tested With High Net Cost Recruit

We asked NHS staff how a recommendation to add a new physician with significant operating cost impacts would be balanced against the financial situation of NHS. We were told that this situation had not yet arisen, but in the case of the need to make a decision about the balance between adding a physician to improve quality and patient safety, and the cost constraint obligations of the NHS, the issue would be referred to the Finance and Audit Committee of the Board.

3.4.5 Unbudgeted Requests

The NHS has established a standardized process to consider requests for unbudgeted resources. Any request must identify the need for

the resources, the operating and capital dollar impact, the potential to re-allocate resources from other areas, other funding sources, and must describe how the request fits with the NHS success factors of the Vision, Mission and Values.

These requests require signed approval by directors, the senior manager, the CIO (for hardware and software), the Capital Redevelopment Officer (for renovations/projects), and the CFO (if the request is ultimately approved by the Resource Planning Committee. RPC decisions regarding these requests are documented in the RPC minutes. The unbudgeted requests documented in recent RPC minutes relate exclusively to capital requests. A request for the additional $300,000 per year costs for additional physician coverage for the SCGH Level 3 ICU was previously approved by the NHS senior team.

3.5 Clinical Services/Program Consolidation

Some External Review Report Recommendations Require Program Consolidation

The maternal/child and operative external reviews explicitly recommended transfer of services from smaller NHS sites and consolidation of activity in the larger (or in the case of maternal/child, largest) site(s). These recommendations were based both on opportunities to improve quality of care through increased critical mass and opportunities to reduce costs through enhanced efficiency.

These opportunities were also assessed as part of the HCM review, and part of the total operational efficiency cost savings opportunity is based on program consolidation.

NHS Program Planning Committee

The NHS has established a Program Planning Committee to guide the determination of the configuration of services that best meets the objectives of the NHS. The criteria for assessing options are documented in the Program Improvement Planning Decision Matrix, and the Clinical Program Strategic Planning Business Case table of contents outlines the information necessary to support application of the Decision Matrix. The HNHB LHIN is not an active participant on the Program Planning Committee.

Centres of Excellence for Health Care Don't Necessarily Require Hospital Services

A stated goal of the NHS Board is to "make optimal use of each site as it relates to the overall health needs of the region". The NHS recognizes that the most appropriate response to health care needs of local population at each site may not be hospital-based care. The program planning process should be a partnership of the NHS and HNHB LHIN, so that opportunities to enhance non-hospital services can be identified in conjunction with identification of opportunities to improve hospital care and gain efficiencies through consolidation

of hospital programs and services. If instead the expectation was that each site must continue to provide NHS-operated hospital services, then the full opportunities to gain efficiencies, improve quality of hospital services through consolidation, and to better meet local community healthcare needs through addition/expansion of non-hospital services, may be lost.

Opportunity to Engage HNHB LHIN in Program Planning Process

A hands-off approach by the HNHB LHIN, whereby the NHS makes hospital service consolidation decisions and the LHIN independently considers opportunities to enhance non-hospital services (such as CHCs, new community service agencies, LTC facilities) would not reflect the desired integrated health service planning approach under the LHIN environment.

4.0 Conclusions

Focus of External Reviews Has Been Quality of Care, Not Cost

The focus of most of the recommendations of external reviews of NHS operations has been on quality of care, not cost efficiencies. The reviews identified issues that if not resolved could impact patient safety and quality of care. The reviews generally provided little information regarding the additional costs or savings opportunities associated with implementation of their recommendations.

HCM Review is Only Example of Review Focused on Costs

The recent HCM review is a notable exception. The HCM review process is now being used to support determination of savings opportunities associated with operational changes, and to ensure that NHS department managers will be accountable for achieving savings targets. While many of the cost savings opportunities in the HCM review were previously identified by the NHS, the HCM process has clearly assigned responsibility for achieving the savings, and incorporated the targets in the departmental budgets.

HCM Process of Establishing Specific Targets should be applied to Utilization Management

Given the magnitude of patient flow and ALC challenges at NHS, greater effort is required to quantify utilization improvement opportunities, to identify associated cost savings opportunities, and to assign responsibility for changing utilization patterns and achieving savings targets. The approach used to establish targets and responsibility for operational efficiencies through the HCM process should be formally applied to utilization management opportunities.

NHS Should Use More Aggressive Utilization Management Targets

The NHS has indicated its intention to move from 50th percentile performance targets to best practice targets, and given the organization's financial position, these more aggressive performance targets should be implemented. The current practice of subtracting days under target LOS from days over target LOS to assess efficiency will hide opportunities to reduce the LOS of individual physicians or programs.

Focus on ALC Issues Should Not Distract NHS from Identifying Other Patient Flow Improvement Opportunities

We believe that the emphasis on the ALC challenge, and the focus on adding LTC beds as the primary solution to the challenge, has kept the NHS from establishing internal targets for improvement of patient flow, and that this is demonstrated in the lack of utilization management cost efficiencies in the recent HAPS overview.

Opportunity for Program/Service Planning Partnership with HNHB LHIN

Finally, program consolidations will be necessary to both improve quality of hospital care and achieve efficiencies. While removing hospital services from any community will create anxiety, a broader consideration of the health status and health care needs in these

communities, in partnership with the HNHB LHIN, provides an opportunity to support the rebalancing of the health system by investing in health services that respond directly to local community needs.