Final Report

Northern Health Surgery Review

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Northern Heath Surgery Review: Executive Summary

Surgery is a key element of acute care. Twelve years after creation of Northern Health (NH), an integrated health care delivery system, the 11 NH surgery sites continue to operate semi-autonomously. NH recognizes that there is an opportunity to change this, and create a truly integrated Surgery Program throughout the North, one that is aligned with NH's Vision, Values and Goals, and fully supportive of NH's integrated system of preventive and primary care. The commissioning of a NH-Wide Surgery Program Review, with the expectation that it will generate a wide range of system-wide and local hospital recommendations, is an important step in this change process.

In this Report, the Northern Health Surgery Review, the Consultants describe their findings related to surgery in NH, and present 45 Recommendations addressing issues and opportunities, 22 NH-wide and 23 site-based.
The key recommendations fall into five categories. These are:

1. Delineating the role of each site, and adjusting the Service Delivery Plan in each HSDA according to each site's role;
2. Optimizing the delivery of surgical services throughout NH;
3. Ensuring a focus on clinical quality;
4. Enhancing the relationship between NH and the physicians in the Surgery Program;
5. Creating a governance and management structure in surgery that permits the above to be accomplished.

Abbreviated descriptions of Recommendations that address creation of an integrated network of surgical sites in NH are as follows:

1. NH to adopt a Service Delivery Plan in surgery based upon a hub-and-spoke model of surgical site role definition within each HSDA in which hospitals and health centres working together within a system will be categorized as: hub hospitals; urban/rural community hospitals; or, rural community hospitals. Not every hospital in each category will look exactly the same. Within the hub and spoke model each hospital with surgery services will have important roles including maternity, general surgery and visiting specialist's services, and with a focus on preserving and enhancing General Practitioner anaesthesia (GPA) and GP-surgeon services in the smaller facilities.

2. The NH Surgery Program Council to work with the HSDA-based Surgery Councils to initiate and supervise enhancement of Orthopaedic Surgery throughout NH, with the goals of: improving patient access; ensuring consistent, sustainable call within each

HSDA; improving efficiency; increasing care provided 'close-to-home' and decreasing clinical pressures at UHNBC. The above to be achieved by:

- a) Planning for consolidation of joint replacement surgery at the hub hospital in each HSDA.
- b) Considering the recruitment of additional Orthopaedic Surgeons, first in the NW and subsequently in the NE;
- c) Ensuring availability of fully-functioning central intake facilities for joint replacement surgery in each HSDA.
- d) Increasing outreach Orthopaedic Surgery.

3. NH, working with the Leadership of the NH Surgery Program and its Council, to explore ways of reducing clinical pressure in surgery at UHNBC by creating a maternity services Operating Room (OR), by enhancing visiting surgeon activity at rural/urban community hospitals, and by exploring the potential for the contracting of cataract and other surgical procedures to private surgery centres.

4. Having accomplished the above, NH to review surgical work being performed on NH patients elsewhere in BC and out-of-province and explore the potential for repatriation of such work.

5. Capital redevelopment of the Dawson Creek and District Hospital, the Mills Memorial Hospital (MMH) in Terrace, the ORs at UHNBC in Prince George, an OR for emergency C-sections at UHNBC and the Sterile Processing Unit at Dawson Creek and District Hospital to be supported.

6. NH to explore the manner in which a Low-Risk Obstetrical Service could be potentially developed in Fort Nelson Hospital; surgery services at the Fort Nelson Hospital to be discontinued.

7. Under the direction of the NH Critical Care Program, the Intensive Care Units (ICU)s at the Fort St. John Hospital and the MMH in Terrace to become regional ICUs, improving surgery patient safety and flow.

8. The NH Surgery Program Council to work with each HSDA-based Surgery Council to initiate and supervise work that will ultimately result in creation of a Breast Diagnostic and Surgical Service Centre in each HSDA, at which standardized, evidence-based practice will occur.

9. Each HSDA Surgical Council to ensure that cataract surgery in the HSDA is conducted with maximum efficiency, using contemporary practice approaches. At UHNBC, this will require performing cataract surgery outside of the main Operating OR, and exploring the option of developing a contract with the Prince George Surgery Centre (see above).

10. The UHNBC Administration, working with NH and the NH Surgery Program Council, to negotiate formal arrangements with BC centres that have Bariatric Surgery Programs, thus ensuring access to such services for NH patients.

11. The UHNBC Administration, working with NH and with the NH Surgery Program Council, to obtain and review data on NH patients receiving cardiac care in other jurisdictions and, on the basis of this data, decide whether to initiate a planning process for a Cardiac Program in NH at UHNBC.

Abbreviated descriptions of Recommendations related to the optimization of delivery of surgical services throughout NH are as follows:

1. Representatives from NH Human Resources (HR) to collaborate with representatives from the NH Surgery Program to determine how they will work as a partnership to address the serious staff recruitment and retention issues that confront every Surgery Program site, and most urgently at the Prince Rupert Regional Hospital.

2. The NH Surgery Program Council, working with the HSDA Surgery Councils and others, will explore options to improve the Nursing Educator support provided to surgical sites and to standardize and enhance nursing professional development opportunities in surgery.

3. The NH Surgery Program Council to work with the Surgery Council in each HSDA to develop and implement a pro-active, data-driven and contemporary physician HR planning process, one involving both Administration and physicians. This to ensure that each HSDA has an actionable Physician HR Plan in surgery. Note: current data strongly supports the recruitment of a replacement Urologist in the NW.

4. The NH Surgery Program Council, working with others, to initiate and supervise work to optimize the NH surgery patient journey, including:
   - Informed by best practices, and beginning at UHNBC, ensuring the availability and optimum functioning of central intake facilities for prospective joint replacement surgery patients in each HSDA. Over time, similar intake centres to be developed for patients with cancer and for those requiring bowel surgery.
   - Informed by best practices and the current LEAN project at MMH in Terrace, developing an approach that will lead to standardization of all processes related to pre-admission care and post-anaesthesia care in NH.
   - Informed by the best of innovative practices, improving the post-discharge care of NH surgery patients by addressing issues related to communication and rehabilitation and by exploring options related to technology-assisted follow-up.

5. The NH Surgery Program to initiate and supervise work that will ensure maximally efficient surgical services throughout NH, including:
   - Working with the Administration of UHNBC and the NI Surgery Council to ensure that the sophisticated management of data resulting from full implementation of *Surginet* at UHNBC leads to: electronic booking and scheduling of surgery; data on surgeon operating times for specific surgeries; patient-driven and efficient surgical slate development; availability of prioritized surgeon wait-lists; and, the patient-driven allocation of resources to surgeons based on prioritized wait-lists.
   - Working with the NW and NE HSDA Surgery Councils to plan for implementation of *Surginet* or its equivalent at MMH in Terrace and Fort St. John Hospital.
   - Standardizing processes related to the timely, efficient performance of emergency surgery.
   - Ensuring the process of resource allocation of OR time to surgeons better reflects patient need, recognizing it is important to ensure that sufficient OR time is allocated to make recruitment attractive and to ensure the ability to generate a reasonable income.
   - Using available approaches, and beginning at UHNBC by working with the UHNBC Administration and NI HSDA Surgery Council, linking the actual costs of surgeons' surgical work to the supply chain for the necessary equipment and supplies, to achieve significant cost savings.
   - Developing guidelines regarding provision of infrastructure support to surgeons throughout NH.

Abbreviated descriptions of Recommendations related to clinical quality are as follows:

1. The NH Surgery Program Council, working with others, to develop a detailed Quality Assurance and Quality Improvement Plan for the Program, this Plan to be implemented by the Surgery Council in each HSDA.

2. The Plan to focus particularly on the full implementation at UHNBC of NSQIP (National Surgery Quality Improvement Program) and CUSP (Comprehensive Unit-based Safety Program). Learnings from UHNBC will then inform performance goals in other surgical sites. In time, NSQIP and CUSP to be introduced at MMH in Terrace and Fort St. John Hospital. The Quality Plan also to address the other quality issues and opportunities described in the Report.

3. Suitable quality resources to be provided the NH Surgery Program. This to be achieved, in part, by assignment of new resources to the Program and, in part, by improving coordinated access of the Surgery Program to quality resources in each HSDA.

4. Staff satisfaction data in the Surgery Program to be developed, widely circulated, discussed and acted upon.

Abbreviated Recommendations related to enhancing the relationship between NH and surgery Program physicians are:

1. The NH VP Medicine to plan and initiate processes designed to enhance the engagement of physicians within the NH Surgery program and to ensure that the physicians of the NH Surgery Program and NH work in partnership.

2. The NH VP of Medicine to continue to work with Medical Directors, Chiefs-of-Staff and Department Heads to ensure each fully understands their unique medical administrative role and how they are to work together in each HSDA to ensure that:
   a) Physicians within the NH Surgery Program comply with NH's Medical Staff Bylaws;
   b) Patient Safety Learning System (PSLS) files and patient complaints related to physicians are followed-up in a timely way, and acted and reported upon.

Efficiently and effectively implementing the Recommendations from this Report that NH chooses to adopt will require much work, and significant organization of effort. How best to accomplish this? A strengthened governance and management structure in surgery is required. The Consultants believe that the NH Surgical Program, suitably supported, has a major role to play in such a structure, as do strengthened HSDA-based Surgery Councils comprised of the HSDA's operational managers of surgery and its medical leadership. Abbreviated descriptions of Recommendations related to Program governance and management are as follows:

1. NH to create a strengthened NH Surgery Program and Surgery Program Council headed by a dyad of an Executive and Medical Program Lead reporting directly to a senior leadership dyad comprised of the Vice President (VP) Medicine and the VP Primary Care, Community and Clinical Programs. Re-invigorated Surgery Councils in each Health Service Delivery Area (HSDA) to implement work flowing from the NH Surgery Program Council and manage local issues such as ensuring co-ordination of regional call schedules and ensuring full availability while on call. Suitable administrative support to be provided the Program, facilitating centralized planning and policy development initiatives, promoting standardized solutions to issues and avoiding duplication of effort.

2. The NH Surgery Program Council, supported by the VP Medicine and the VP Primary Care, Community and Clinical Programs, to facilitate development of a compelling Surgery Program Vision and a Program Action Plan that will allow the Vision to be

achieved. The NH Surgery Program Council, suitably supported, will then initiate and manage the elements of the Action Plan.

3. NH to obtain and analyze data related to surgical care provided to NH patients outside of BC, thus permitting development of guidelines in this area, and monitoring of activity relative to them.

In the full Report, the Consultants summarize potential costs associated with the Report Recommendations, and provide suggestions on how the Recommendations accepted by NH might be sequentially implemented.

The Consultants do not under-estimate the magnitude of change that will be required should the Recommendations in the Report be accepted, and know that managing such change will be difficult. However, we believe that the development of strong Clinical Programs in NH is essential, if meaningful integration of acute care services is to be achieved. Moreover, we believe the journey toward development of an integrated system of clinical care in surgery will provide many lessons to other Clinical Programs, and assist them in their maturation.

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Note: The Report Appendices will be presented in a separate document.

SECTION 1

INTRODUCTION

Background

Health care systems in Canada continue to evolve, with a universal focus on delivery of better preventive and primary care. There is tremendous emphasis on development of various models of information technology enabled inter-professional care in the community. The role of the acute care hospital is being re-defined, and will ultimately feature a more limited and focused menu of service offerings. Over the last number of years, Northern Health (NH) has positioned itself as a leader in this field by advancing innovative models of providing efficient and effective primary care in the community. As a logical extension of this transformational effort, NH is now turning to its acute care sector, seeking to understand how acute care services can best be transformed to support primary care.

Surgery is a key element of acute care. Twelve years after creation of NH, an integrated health care delivery system, the 11 NH surgery sites continue to operate semi-autonomously. NH recognizes that there is an opportunity to change this, and create a truly integrated Surgery Program throughout the North, one that is aligned with NH's Vision, Values and Goals, and fully supportive of NH's integrated system of preventive and primary care. The commissioning of a NH-Wide Surgery Program Review, with the expectation that it will generate a wide range of system-wide and local hospital recommendations, is an important step in this change process.

Project Terms of Reference

The Terms of Reference for this Review are provided in Appendix A

Project Guiding Principles

The project Guiding Principles are provided in Appendix A.

Framing the Review

The Consultants, as requested, performed a comprehensive review of all aspects of surgery in NH. We encountered innumerable health care professionals who are clearly skilled in their work and who exhibit commitment, caring and compassion. We also observed that an enormous amount of surgical work of high quality is being accomplished 'close-to-home' in the North. In general, wait-times in surgery are acceptable and, in a number of areas, continuing to improve.

The above notwithstanding, the Consultants observed multiple opportunities for improvement, opportunities that will be met through better organization of processes, changed behavior, a greater focus on the patient and enhanced integration of service. It is these opportunities for improvement that are the focus of the Report's 45 Recommendations.

The Consultants fully appreciate the magnitude of change that will be required in surgery, should NH accept the Report Recommendations. We also understand the challenges that organizations typically confront as they attempt to successfully manage significant change. Accordingly, we believe that achieving transformation of surgery in NH should be looked upon as a multi-year project during which incremental change is achieved by strategic prioritization of initiatives followed by the development of an implementation plan that details how work on each initiative will be sequenced.

In keeping with the above, we have not identified a timeline for each Recommendation. However, we have created a Section in the Report on implementation, in which we offer our views on the prioritization of the Recommendations and suggest how work on these might best be sequenced.

The Consultants also appreciate the fiscal constraints under which NH and other health authorities operate. Accordingly, we have included in the Report a section which describes, at a high level, the cost implications and anticipated savings associated with the Report's Recommendations.

Review Process

- The Surgery Program Review was initiated by the NH Executive and Dr. Ronald Chapman, NH Vice President(VP) Medicine, is the Project Executive Lead;
- The NH Executive and the Executive Director of the Surgical Program identified a Project Steering Committee (See Appendix A);
- Project Consultants were identified by Dr. Chapman (See Consultant Biographies Appendix B.)
- A phone meeting chaired by Dr. Chapman and attended by Steering Committee members and consultants was held on May 28th 2014, during which the Draft Project Terms of Reference (TOR) and Guiding Principles were presented and discussed;
- The Consultants amended the Draft TOR and Guiding Principles and submitted Final TOR and Guiding Principles to the Executive Lead on June 23rd,2014 (See Appendix A);
- Site-profiles of each NH surgical site were developed by NH for the Consultants, and some initial requested Surgery Program data was provided;

- Relevant documents and all previous reports related to reviews of various aspects of the Surgery Program were reviewed (See list, Appendix C);
- Site visits to each of the surgical sites were conducted by Dr. Bear and Ms. Carpenter in June and July;
- Follow-up phone meetings were arranged with representatives from each referral site and with individuals unable to meet during the site visits; a summary of the consultation and a list of professionals consulted in person or by phone is provided in Appendix D;
- The Report of the recent NH Accreditation Survey was reviewed;
- A summary of initial observations was created by Ms. Carpenter and Dr. Bear and shared with Dr. Stewart Hamilton, General Surgeon, former Department Head at the University of Alberta, and surgeon advisor to the project;
- The above observations were supplemented with detailed activity data from each site, configured in Table format within Section 3 of this document;
- The Consultants developed a Draft Report, and submitted it for initial review and discussion to the NH Executive;
- The Report will be presented to the Project Steering Committee on September 20;
- Subsequent to the above meeting, the Report will be finalized.

SECTION 2

NORTHERN HEALTH-WIDE ISSUES, OPPORTUNITIES AND RECOMMENDATIONS

"Through our dedicated physicians and staff, it is the vision of Northern Health to deliver a comprehensive and sustainable system of health care across the region…and it is our mission to develop the solutions that improve the overall quality of health for Northerners."

Dr. Charles Jago

In the conduct of this review, a number of NH-wide themes related to surgical services surfaced, and will be detailed in this Section of the Report. Specific examples from individual sites may be presented, but in each case there will be similar examples in other sites. Once these themes have been addressed in this Section, they will not be further addressed in detail in subsequent Sections of the Report.

1. Governance and Management of Surgical Services in NH:

Preferred State:

- Governance and management structures for NH's surgical services are clear, concrete, and fully congruent with NH's status as an integrated health care delivery system.
- Direct lines of communication exist between the front line staff, the site-based operational management in surgery, the HSDA operational management in surgery, the NH Surgery Program and NH's Senior Leadership Team.

***Current State*:**

- Governance and management structures in surgery in NH are somewhat diffuse. In each HSDA there is a Chief Operating Officer (COO) and in each surgical site a Health Services Administrator (HSA). However, the portfolios of these individuals are broad, surgery being just one component. There are Directors of Care (DOC) at each surgical site, and these individuals, although their portfolios cut across all clinical activities, are more directly involved in surgery operations. There is also an Operating (OR) Manager at each surgical site.
- There is a NH Surgery Program, the primary role of which is to advance the quality agenda in surgery, in part by facilitating implementation of provincial quality initiatives. The Surgery Program Executive Lead reports to the Vice President (VP) Primary Care, Community and Clinical Programs, and Chairs the NH Surgery Council, comprised of not fewer than 8 members and not more than 14 which includes: 1 Medical Program Lead, 1 Executive Lead, 3 Surgical Department Heads or delegates, (NE/NI/NW), 1 Anaesthesia Department Head or delegate, 1 Health Services Administrator, 1 Director of Care, 2 Operating Room or Surgical Managers and 1 Regional Director Infection Control. It is intended that the Surgery Program be co-chaired by a dyad structure comprised of the Executive Program Lead and a Medical Program Lead. However, the position of Medical Lead of the Surgery Program has been vacant for a considerable time. Administrative support for the Program is comprised of: a Quality Advisor, 7.2 hours per month; a 0.5 Administrative Assistant; and, shared resources in budget and data analysts.

- There are also some surgery committees including: a Surgical Services Council in the North West (NW) HSDA that is relatively inactive and is awaiting the results of this review; a Surgical Services Council in the North East (NE) HSDA that meets every two months; and, various site-based peri-operative services committees, none of which are functioning optimally. The Surgical Solutions Committee at University Hospital of Northern British Columbia (UHNBC) in the Northern Interior (NI) HSDA would be one example of the above. Surgeons describe it as failing to meet its promise as a decision-making, problem-solving structure, although they were unable to describe why.
- There is a number of compensated physician leadership positions in surgery, either HSDA-based or hospital-based. With some notable exceptions, these do not appear to be highly valued or sought-after. Also, it is not clear that each incumbent fully understands the role, and it appears that additional work is required regarding performance expectations and accountability. Physician leaders in the past have not typically received leadership education or mentoring and are not routinely paired with an administrative lead.
- A parenthetical note: when meeting with various surgeons and surgeon groups, the Consultants were surprised to learn how little some surgeons understood of the governance and operational management structures for surgery in NH. A group of surgeons and anesthetists at UHNBC had almost no knowledge of the Surgery Program, or even about the operational management structure of the hospital.

NH-Wide Recommendation # 1

NH to enhance the governance and management structures in surgery by accomplishing the following:

- **Maintaining a geographically-based operational management structure.**
- **Creating a strengthened NH Surgery Program, headed by Executive and Medical Program Leads who will co-chair a re-invigorated NH Surgery Program Council.**
- **Having the Program Leads report to a dyad consisting of NH's VP Medicine and VP Primary Care, Community and Clinical Programs.**
- **The NH VP Medicine and VP Primary Care, Community and Clinical Programs charging the Surgery Program with the responsibility of developing and implementing an Action Plan for selected Recommendations from this Report.**
- **Providing additional human resource support to the Program in: administrative support; change management; project management; clinical quality; data analysis; and, budget analysis.**
- **Having the NH VP Medicine facilitate revision of the HSDA Chief of Surgery Position descriptions, making them new positions, for which there would be recruitment processes, although incumbents would be encouraged to apply. These positions to be filled by a surgeon or an anaesthetist. The expected term of office, time commitment, compensation and accountability framework for each position to be**

made explicit. In these compensated physician leadership positions, and working within a dyad leadership structure, the physicians need to see evidence their contributions are helping. Additionally, these physicians will require support in dealing with difficult colleagues or difficult situations involving colleagues.

- **Ensuring the Administration of each HSDA works with the NH Surgery Program to create strong, effective Surgery Councils in each HSDA, co-chaired by a local Executive Lead and a newly-appointed HSDA Head of Surgery. The Executive Lead of Surgery Services to serve in an *ex officio* capacity on each HSDA Surgery Council.**
- **Revising the Terms of Reference for the HSDA Surgical Councils to include responsibility for such matters as:**
  - **Implementing policies and processes stemming from implementation of the Surgery Program Action Plan;**
  - **Understanding the budgetary resources assigned to each element of the Surgery Program in the HSDA and the importance of working within them;**
  - **Ensuring effective collaboration between sites while conducting service delivery planning in surgery in each HSDA that meets current and future population needs;**
  - **Supporting the collaborative work of OR managers and HR in developing strategies and actions to ensure the right numbers and types of staff are available at each site for the planned work (see section below entitled: "Health Human Resources in Surgery");**
  - **Co-ordinating clinical activity within each HSDA, e.g. during summer and winter closures and at times of over-capacity, and ensuring co-ordination of regional call within each HSDA;**
  - **Ensuring the identification, mentoring and development of future medical leaders;**
  - **Providing input related to planning for capital projects and equipment acquisitions;**
  - **Submitting an Annual Report to the NH Surgery Program and their Executive Sponsors.**
- **Having the NH VP Medicine and VP Primary Care, Community and Clinical Programs explore options related to the ongoing mentoring of leaders within the proposed governance and management structure.**

Outcome Measures:

- A NH-wide Governance and Management Structure for the Surgery Program that retains HSDA and site-based operational management, while strengthening the planning and policy development roles of the NH Surgery Program and creating strong HSDA-based Surgery Councils as points of interaction between the NH Surgery Program and operational management structures in surgery.

- A strengthened communication link between the Surgery Program and the NH Executive.
- Sufficient human resource support in the Program in administrative support, change management, project management, clinical quality, data analysis and budget analysis.
- A redeveloped and strengthened medical leadership structure in surgery.
- A structure in each HSDA through which clinical quality in surgery can be monitored and improved, recruitment and education of staff optimized, service delivery coordinated and physician recruitment planned and managed.
- Successful development and implementation of a series of substantial initiatives that will transform the NH Surgery Program and result in a NH-wide Program that in its structure, function, service integration success and focus on quality will serve as a template for other NH programs to follow.

2. Clear Delineation of the Role of Each NH Surgical Site:

Preferred State:

- Each surgical site within NH understands its service delivery role within an integrated system of health care organizations, including the quality clinical service it is to offer its community and referring sites, and the manner in which its clinical activities are to be supported by other surgical sites.

Current State:

- There are 11 surgical sites within NH. Each of these sites serves a network of referral sites without surgical capacity. At times, geographic barriers are crossed, because of historical referral relationships or because of patterns of visiting specialist practice.
- UHNBC in Prince George is universally recognized as being the tertiary care facility for NH. Beyond that, the roles of various sites, in some instances implicitly recognized, have not been formally characterized.
- There are opportunity costs associated with the above. These include: uncertainties regarding service delivery planning and physician human resource planning; lack of clarity regarding future roles of institutions when contemplating planning of capital re-development; reinforcement of unhelpful competition; lack of clarity regarding regional on-call responsibilities; uncoordinated OR closures; and, ambiguous and non-prioritized patient transfer and repatriation policies.
- NH is an Integrated Health Care Delivery System. Each element of this system should understand its role, and how it is intended to relate to and support other institutions within the system. Provision of care close-to-home should be a guiding principle.

Currently, some of this occurs on an intuitive basis, but a fully integrated system of seamless surgical care for residents of the North does not currently exist.

NH-Wide Recommendation # 2

That NH adopts a Service Delivery Plan based upon a hub-and-spoke model of surgical site role definition, and a categorization of hospitals as: *hub hospitals, urban/rural community hospitals and rural community hospitals.*

Within this hub-and-spoke system, each hospital with surgery services to have important roles, including maternity, general surgery and visiting surgeon services, with a focus on preserving and enhancing GPA services. At smaller sites, the role of the GP-surgeon to be preserved/enhanced. Ideally, GP- surgeons to have the ability to establish mentoring/ training relationships with physicians practicing in hub hospitals.

***Hub hospitals* to provide a full range of core and some specialty surgical services. *Urban/rural community hospitals* to provide a full range of core services, including primary care, emergency, medicine, general surgery, obstetrics and some visiting surgeon services. *Rural community hospitals* to provide basic core services only, namely primary care, medicine, emergency, and function as referral sites for surgical services.**

In the NW HSDA, the hospital role definitions to be as follows: Mills Memorial Hospital (MMH) in Terrace to be designated as the hub hospital; the Bulkley Valley District Hospital (BVDH) in Smithers, the Prince Rupert Regional Hospital (PRRH), and the Kitimat General Hospital and Health Centre to be designated as urban/rural community hospitals. Not all urban/rural community hospitals will necessarily provide exactly the same services or function in exactly the same way.

In the NI HSDA, UHNBC to be designated the hub hospital (and NH tertiary surgery referral centre), and the GR Baker Memorial Hospital (GRBMH) in Quesnel and the St. John Hospital (SJH) in Vanderhoof to be designated urban/rural community hospitals.

In the NE HSDA, Fort St John Hospital to be designated the hub hospital, Dawson Creek and District Hospital to be designated an urban/rural community hospital and Fort Nelson Hospital to be designated a rural community hospital, although options will be explored related to the potential development of a Low-Risk Obstetrics Service there.

Outcome Measures:

- Each hospital will clearly understand its role and its relationship with other sites.
- The role of each HSDA-based Surgery Council will be clarified and strengthened, as will medical leadership in surgery.
- Difficult service rationalization decisions will be made, ultimately increasing collaboration, coordination of care, and efficiency and quality of care.

***Note 1*:** Factors influencing the identification of MMH in Terrace as the hub hospital in the NW include: the number and diversity of its medical staff in surgery; its geography within the NW; its planned re-development; its airport; its role as providing specialized services such as Ophthalmology, dialysis and as a Trauma Centre; and, its future role in providing regional services in Critical Care.

Factors influencing the identification of Fort St. John Hospital as the hub hospital in the NE include: its re-development; its excess capacity and the inadequate capacity at the Dawson Creek District Hospital; its airport; its designation as a Trauma Centre; its future role in providing regional services in Critical Care; and, its provision of specialized services such as Ophthalmology and dialysis.

Note 2: Detailed data tables regarding the current surgical activity profiles of all surgical sites and recommendations regarding site-specific hospital roles will be found in Section 3: Site-Specific Recommendations.

3. Northern Health Surgery Program Vision and Action Plan:

Preferred State:

- A collaboratively-developed and widely-communicated Surgery Program Vision exists which, using few words, captures the essence of a preferred future for the Surgery Program.
- The Surgery Program Vision is fully-aligned with the Vision, Mission, Values and Goals of NH.
- An Action Plan for the Surgery Program exists, outlining the incremental steps required for the Program to move effectively toward achievement of its Vision.

Current State:

- NH was created as an integrated health care delivery system in 2002. There are 11 surgical sites within NH. To a greater or lesser extent, each operates semi-autonomously. There is no over-arching Vision for NH's Surgery Program. This is not a critical comment. NH has articulated a set of Organizational Values, a Vision and a set of Strategic Goals and has adopted an incremental approach in focusing on these, with an early emphasis on community care. However, it is now time to develop a NH Surgical Program Vision - a compelling statement about a preferred future - ensuring it is aligned with the Values, Vision and Strategic Goals of NH.

NH-Wide Recommendation # 3

With the support of the VP Medicine and the VP Primary Care, Community and Clinical Programs, the NH Surgery Program Council, working with the HSDA Surgery Councils and others, to develop a Surgery Program Vision that is aligned with that of NH, and a Surgery Program Action Plan based on accepted recommendations from the surgery review that outlines how the Vision will be achieved.

Outcome Measures:

- A widely communicated description of a preferred future for the NH Surgery Program, one that is fully aligned with the Values, Vision, Mission and Strategic Goals of NH.
- A clear and widely-communicated Surgery Program Action Plan.

4. Health Human Resources in Surgery:

Preferred State:

- The NH Surgery Program, primarily represented by its OR Manager Group, works collegially and effectively with NH HR, each understanding the other's issues and challenges.
- Each OR manager is assigned a contact person in HR; the 2 individuals work together as a team.
- Challenges related to recruitment and retention of staff in surgery are managed.

Current State:

- At each of the eleven NH surgical sites, staffing shortages adversely affecting surgery are described as one of the most important issues. The demographics of the nursing population in surgery are bimodal, featuring an older population of nurses who are retiring or nearing retirement and a population of young inexperienced nurses who are having their families and requiring maternity leave. There is also the predictable phenomenon of younger nurses coming to the North for a year or two, gaining some experience, and then leaving. There are multiple costs associated with the above, including the considerable costs of training new staff and managers as well as agency nursing costs.
- The Consultants appreciate that NH recently undertook a review of its corporate Human Resources (HR) function, and that an Action Plan exists related to that review; we have been provided selected excerpts from that Action Plan, which provide evidence that positive changes in HR are being achieved. We also appreciate the long-standing and difficult-to-resolve challenges in recruiting staff to the North.

- The above notwithstanding, the Consultants heard from every site and from every level of administration that interactions with corporate HR are not yet fully satisfactory. On one hand, the Consultants heard that HR provides excellent support and advice on matters related to HR policy, for example in the area of labour relations. However, there is wide-spread frustration with the assistance provided by HR in the sphere of staff recruitment and retention. Some managers indicated that it would be ideal if they had access to one consistent support person in HR. Currently, some manager's state that they are required to repeat their descriptions of their staffing situations again and again, and are often given conflicting pieces of advice. A number of OR managers also said that they were not always sure that HR understood the urgency of their staffing needs. On this topic, stories abound and spread throughout the Organization, influencing its belief system.
- The Consultants were advised that providing consistent educator support in surgical services would assist in recruitment and retention, as had been demonstrated in Fort St. John. We also learned that availability of professional development can be a critical success factor in recruitment and retention and that resources in support of professional development in surgical nursing varies widely from site-to-site. Some sites 'scratch for dollars', while other sites enjoy abundant community support for professional development.
- The Consultants also heard from several interviewees that recruitment of staff would be made easier if greater flexibility existed in the categorization of positions. As one example, critical nursing vacancies could have been filled at some sites if options other than part-time or casual positions had been available, since full-time positions at equal or better pay were available in other near-by jurisdictions.
- Finally, the Consultants heard from many interviewees that HR had downloaded many tasks related to recruitment to OR Managers, many of whom in smaller sites also assume front-line clinical responsibilities. These additional responsibilities are described as being very time-consuming for individuals who already have a full menu of OR management responsibilities. Many interviewees stated that this excess workload, and the stress accompanying it, is vastly under-estimated, and that it leads to inordinate turnover of OR Managers.

NH-Wide Recommendation # 4

That representatives from NH HR work collaboratively with representatives from the NH Surgery Program Council, each HSDA Surgery Council and the OR Manager Group to determine:

- **How HR will work in partnership with OR managers to ensure that the specific recruitment and retention issues confronting each site are understood and managed;**
- **How HR will work with OR managers to develop a mutual understanding of the impact on recruitment and retention that results from the lack of flexibility in job**

classifications or postings and how HR proposes to work with OR managers to explore options resulting in greater flexibility;

- **How a specific contact person in HR will be identified for each OR manager, and how this HR professional and the OR manager will work together as a team to address issues;**
- **How each OR manager and the HR professional assigned to him/her will work together to develop a mutually acceptable understanding of how work related to staff recruitment and retention will be shared.**

Outcome Measures:

- An optimized relationship between HR and NH's OR managers.
- Avoidance of staffing crises, for example at the Prince Rupert Regional Hospital.
- Improved recruitment and retention of surgical staff and managers.
- Reduced costs related to training of new staff and managers and to use of agency staff.

NH-Wide Recommendation # 5

That the NH Surgery Program Council, working with HSDA-based Surgery Councils and others, will:

- **Explore options to enhance educator support in NH surgical sites;**
- **Develop an approach to standardize and enhance professional development opportunities in surgical nursing in NH.**

Outcome Measures:

- Optimization of nursing educator support in NH's surgical sites.
- Standardized professional development opportunities in surgical nursing throughout NH.
- Enhanced surgical staff recruitment and retention.
- Reduced costs related to training of new staff and managers and reduced use of agency staff.

5. Optimizing The Surgical Patient Journey

Preferred State:

- There are central intake facilities for patients requiring certain types of surgery services, for example joint replacement surgery, breast diagnostic and treatment services, cancer surgery, and bowel surgery, through which patients are assessed, prioritized, educated about the disease and its treatment options, advised about surgeons' wait-lists, and, are provided the opportunity to choose a surgeon or be assigned one with a reasonable wait-list. Nurse navigators ensure patient-centred care and smoothed processes.
- Processes, forms and charts related to pre-admission care are standardized throughout the Organization, and feature trained nursing staff using internet-based protocols supplemented by phone appointments to complete patient education and the majority of patient assessments. Only a small minority of patients require a pre-surgery visit.
- Prior to their operation, selected patients receive evidence-based intravenous treatments proven to hasten recovery and shorten hospital stays (e.g. Enhanced Recovery After Surgery (ERAS)).
- Post-anaesthesia care in all of its aspects, including staffing, is standardized throughout the Organization.
- The care of surgical in-patients is governed by evidence-based care maps, as appropriate, and features access to rehabilitation as required.
- The Organization strategically deploys it's in and out-patient rehabilitation resources, allowing execution of a prescribed rehabilitation plan for post-operative patients in the referring hospital or community.
- At discharge, the patient/referring hospital/referring physician is provided timely, detailed information, including a care plan, as appropriate.
- Patients are provided cellphones with unique features for use during the post-discharge interval. These phones are used to monitor wound healing, observe for any evidence of infection and exchange information and advice regarding pain management and general rehabilitation. Patients are encouraged to contact members of the provider team, should issues or questions arise.

Current State:

- NH funds a central intake facility at UHNBC for prospective joint replacement patients, but it is not yet used optimally. For example, some patients continue to be referred directly to Orthopaedic Surgeons and patients attending clinic are not uniformly provided wait-list data for all surgeons, and may unknowingly choose a surgeon with a lengthy wait-list.

- Each Pre-Admission Clinic (PAC) in NH operates differently. At each site, a substantial number of patients are required to visit for physician assessments. Each surgical site has some 'customized' forms, unique PAC staffing patterns and individualized processes. Substantial loss of efficiency occurs as a consequence of non-standardized PAC processes. In a number of sites, it is not uncommon for patients to arrive for same-day surgery with incomplete documentation or evident clinical instability; this results in patient risk, delayed surgery and loss of OR efficiency.
- There is variability throughout NH in the manner in which Post-Anaesthesia Care Units (PACUs) are staffed and operated.
- The consultants heard from every referring site in every HSDA there is an opportunity to improve the transitional care provided to patients discharged from surgical sites to a referring hospital and/or the community. There are staffing shortages in Physio Therapy (PT) and Occupational Therapy (OT) that do not always seem to be appreciated by the surgical site. Another issue relates to communication from the surgeon and/or surgical site to the site of repatriation and/or community; frequently, the information accompanying the patient does not include a post-discharge care map or details of follow-up arrangements with the surgeon.

NH-Wide Recommendation # 6

The UHNBC Administration, working with the NH Surgery Program Council and HSDA Surgery Councils, to identify best practices related to surgical intake centres, optimize the functioning of the joint replacement surgery intake facility at UHNBC, and ultimately establish similar clinics for prospective joint replacement patients in the NW and NE HSDAs. Planning to occur for future surgical intake centres for patients with breast and other malignancies and for patients requiring bowel surgery.

Outcome Measures:

- Single point of system entry for patients with selected serious surgical conditions.
- Optimization of patient education; reduction of patient stress and anxiety.
- Standardized patient assessment and prioritization.
- Customized pre-operative patient conditioning.
- Provision to patient of information regarding surgeons' wait-lists.
- System navigator support, as required.

NH-Wide Recommendation # 7

That the NH Surgery Program Council, utilizing available support personnel, develop an approach that would standardize all processes related to PAC care and PACU care at all NH surgical sites. This project to be informed by the current LEAN project at the Mills Memorial Hospital in Terrace that is surveying best practices in this area in other BC health authorities and beyond.

Outcome Measures:

- Standardized processes, documentation forms and charts in all NH surgery sites related to PAC staffing and processes and PACU staffing.
- Reduction in number of pre-operative patient assessment visits.
- Enhanced patient care.
- Improved OR efficiency.

NH-Wide Recommendation # 8

That the NH Surgery Program Council, using available support personnel, work with the HSDA-based Surgery Councils to explore options to enhance patient-centred care of surgical patients post-discharge. This to include developing an inventory of the rehabilitation resources in each surgery site and referral site, so as to assist in arranging access for discharged patients to suitable rehabilitation care, and also to include exploring how best to ensure that detailed communication to referral hospitals and referring physicians regarding a care plan and follow-up arrangements accompanies each discharged patient. Innovative patient follow-up models in use elsewhere and designed to enhance the quality of post-discharge surgical care to be explored.

Outcome Measures:

- For each surgical patient, clarity will exist regarding his/her post-operative rehabilitation needs, the degree to which those needs can be met in the community and, if not, the alternative rehabilitation plan.
- Detailed communication to referring hospitals and physicians re: the care plan and follow-up arrangements.
- Enhanced, patient-centred post-discharge care of surgery patients.

6. Ensuring Maximally Efficient Surgical Services in NH

Preferred State:

- Booking and scheduling of surgery is electronic, using programs such as *Surginet* or *aCATS*, a popular Canadian product designed by surgeons. Through these digital processes, each surgeon's wait-list details the diagnostic code and priority of each listed case. The last 5 operating times used by the surgeon for similar cases is portrayed, allowing optimization of surgical slate development. Software programs also allow the surgeon to identify preferences and develop a 'pick list' for each procedure.
- Using established approaches for ensuring that booking and scheduling data is used to effect meaningful change, use booking and scheduling data to periodically (e.g. every 6 months) review the OR time allocated to surgeons, ensuring that surgeons

with lengthy wait-lists for high-priority patients receive more OR time than surgeons with smaller wait-lists and/or fewer high-priority cases or surgeons who have not been fully utilizing his/her OR time. This contemporary approach results in patient-driven resource allocation in surgery.

- The development of surgical slates takes into account the particular surgical site's role in performing emergency surgery. The Organization utilizes a standardized and accepted approach for classifying emergency cases and determining the timing of surgery (e.g. E1-E6-E24; to illustrate, examples of E6 cases - to be done within 6 hours - would include compound fractures, ischemic gut, perforated viscus), and there is a process to review emergency add-ons for appropriateness. If a significant volume of urgent surgery occurs at a site, then ORs exist that are designated for urgent surgery, or 'blank' time is left in each surgical slate, to be used as required for urgent cases. Selected patients wait at home on their surgery day, to be called in if there is room on the surgeon's slate.
- ORs operate with maximum efficiency, as determined by a set of metrics captured electronically, and regularly reported and acted upon.
  Metrics include: quality metrics such as patient temperature at incision-time, pre-operative antibiotics as per established protocols, and surgical check-list reports; first-case start-times; anaesthesia times; turnaround times; and surgeon operating time. As with booking and scheduling and OR-time allocation, the Organization understands that availability of data does not alone lead to change, and uses established approaches to ensure that data on metrics is utilized effectively in change management processes.
- The Organization works with each surgeon to develop information on the actual costs per case for each of that surgeon's surgical cases, and to significantly reduce those costs through surgeon-specific supply chain management.

Current State:

- At UHNBC, a project is underway that will result in booking and scheduling being managed electronically, utilizing the software program *Surginet*. Once fully-implemented, *Surginet* will facilitate electronic booking of cases through surgeons' offices, identification of surgeon preferences, and pick-list development for each case. It will also allow generation of data regarding usual surgeon operating times for specific cases and data regarding the number and types of cases on the surgeon's wait-list. Otherwise in NH, there is no standardized process for the booking and scheduling of surgery. In some sites, there are booking and scheduling clerks, each of whom operates differently. In some sites, surgeons are responsible for managing their own bookings and scheduling, resulting in many issues and inefficiencies. Note: at UHNBC, the Booking Clerk also develops the Anaesthesia schedules.
- The amount of OR time allocated to surgeons varies widely from surgeon to surgeon and site to site in NH; allocation of OR time to surgeons, in a number of sites, appears to be based on historical precedent. There do not appear to be standardized and

principle-driven processes for periodic review of and re-allocation of OR time or Ambulatory Care time. At one hospital, surgeons are only permitted to recruit additional surgeons if existing OR time within the specialty is shared with the new recruit. Some surgeons in NH have offices and Medical Office Assistant (MOA) resources subsidized by their hospital; other surgeons do not; there is no standardized policy regarding such arrangements. Similarly, the level of support provided visiting specialists varies at each site where visiting specialist practice occurs.

- There is a designated Orthopaedic Surgery trauma OR at UHNBC, which runs from 11:30 AM to end-of-list. There is no other designated emergency surgery room at UHNBC. Throughout NH, there is inconsistancy in the manner in which emergency cases are classified, integrated into surgical slates or added on at end-of-day, and subsequently reviewed. In a number of sites, the planned end-of-day for the OR is 2:30 PM or earlier. Unsurprisingly, add-ons are common and relatively uncontrolled and overtime is common.

NH-Wide Recommendation # 9

The NI HSDA-based Surgery Council, working with the UHNBC Administration, to ensure maximum utilization of the *Surginet* surgery booking and scheduling program, including use of the system to track surgeon operating times for specific case types, and use of OR and wait-time data to periodically review how OR time should be allocated to surgeons and surgical groups. (Note: availability of data from *Surginet* will be insufficient to drive change. Other established processes will be required, for example to use data from *Surginet* to develop a patient-driven process for allocation of OR time to surgeons.) NH to plan for installation of *Surginet (*or a similar program such as *aCATS* at all NH surgical sites, commencing with the MMH in Terrace and the Fort St. John Hospital. In the meantime, booking and scheduling processes to be standardized at all NH surgical sites outside of UHNBC.

The NI Surgery Council, working with UHNBC Administration and the Surgery Program Council, also to explore existing mechanisms for linking of individual surgeon's OR activities to the actual costs of those activities, and reducing those surgeon-specific costs through adroit supply chain management.

The NH Surgery Program Council, working with the HSDA Councils and HSDA Administrations, to ensure the process of resource allocation to surgeons better reflects patient need, recognizing it will be important to ensure that sufficient OR time is allocated to surgeons to make recruitment attractive and to ensure the ability to generate a reasonable income.

Outcome Measures:

- Standardized booking and scheduling of surgery throughout NH.
- Standardized generation of prioritized wait-list data for individual surgeons.
- Ensuring timelines met for prioritized cases.
- Documentation of individual surgeon operating time, permitting optimization of surgical slate development.
- Availability of data that can be used to periodically adjust allocation of OR time to surgeons.
- Increased OR efficiency.
- Enhanced patient-centred care.
- Reduced overtime.

NH-Wide Recommendation # 10

That the NH Surgery Program Council, using available resources, and based on a survey of best practices, develop a standardized approach to the classification, management and monitoring of emergency surgery cases, this approach to be implemented by each HSDA Surgery Council.

Outcome Measures:

- Timely completion of emergency surgery cases resulting in enhanced patient care.
- Enhanced OR efficiency.
- Reduced overtime.
- Reduced costs.
- Enhanced patient care.

NH-Wide Recommendation # 11

The NH Surgery Program Council, working with the VP Medicine and VP Primary Care, Community and Clinical Programs, develop a policy that establishes guidelines for infrastructure support including secretarial and space allocation to be provided to surgeons, this policy to be implemented by HSDA Surgery Councils.

Outcome Measure:

- Transparent guidelines regarding infrastructure support to be provided to surgeons throughout NH.

7. Physician Human Resource Planning in Surgery:

Preferred State:

- Each HSDA-based Surgery Council, using guidelines established by the NH Surgery Program Council, has developed and implemented a Physician HR Plan.

Current State:

- The Consultants are aware of the work of Dan Le, which is being orchestrated through Dr. Ronald Chapman, the VP of Medicine, and is oriented to determining the physician human resource needs of various geographic areas, using a modeling system based upon both population-based and needs-based approaches. We are also aware of the existence in NH of traditional Medical Advisory Committee (MAC)-based approaches to physician HR planning. However, the Consultants believe there is evidence that a more evolved physician HR planning process in surgery is required in NH, one that ensures the needs of the population are met by being pro-active, ensuring seamless physician practice transitions and fully involving Administration.
- For purposes of illustrating this need, a specific NH physician HR planning situation will be explored. The Urologist who has been servicing a number of surgical sites in the NW HSDA has announced his retirement, a retirement that has been long anticipated. The Consultants were advised that an advertisement for his replacement has just recently been developed and will soon be posted. However, no definite arrangements appear to have been made regarding the acquisition of the updated equipment that would be required to support a new recruit. Some interviewees are concerned that the option of not replacing the retiring Urologist and referring Urology cases to UHNBC is being considered as an option.
- The Consultants obtained and reviewed data related to the recent clinical activity of the retiring Urologist. The following daycare procedures for diseases and disorders of the kidney genitourinary tract and male and female reproductive system were performed in 2012/2013: NW HSDA- 988 daycare surgical procedures were performed, of which 486 were performed at MMH in Terrace and 502 at other NW surgical sites. The following numbers of daycare surgery procedures were performed on patients from the NW at UHNBC for diseases and disorders of the kidney, genitourinary tract, male and female reproductive system: 6 patients from Kitimat; 10 patients from Prince Rupert; 25 patients from Terrace; 81 patients from Smithers; and 6 patients from Upper Skeena (Hazelton). In addition, the following numbers of patients from the NW received In-patient procedures at UHNBC related to diseases and disorders of the kidney, genitourinary tract and male reproductive system: 4 patients from Kitimat; 9 patients from Prince Rupert; 11 patients from Terrace; 17 patients from Smithers; and 3 patients from Upper Skeena (Hazelton).

- The Consultants believe that this example - which clearly supports the recruitment of a replacement Urologist in the NW - illustrates the importance of ensuring that a standardized, pro-active and data-driven physician HR planning process exists in each HSDA, a process that takes into account evidence-based population needs and also considers the opportunity of lessening clinical pressure at UHNBC.
- Other examples of the need for such a process are as follows:
  - A very busy sole-practitioner General Surgeon in one site indicated to the Consultants that he will be the one who determines whether another General Surgeon will be recruited. Similarly, a Chief of Staff (COS) at another site advised us that planning for the recruitment of an additional General Surgeon would commence only after the incumbent indicates he is retiring.
  - A COS advised the Consultants that while he believed another Gynecologist was required at the site, he had decided not to proceed because the incumbent Gynecologist felt that another recruit was not required.
  - In another site, 3 of the 4 busiest surgeons are at or nearing retirement age, but it does not appear planning processes are in place to replace them.
  - In the NW HSDA, the Pathologists are approaching retirement and there is no transition plan in place.

NH-Wide Recommendation # 12

That the NH Surgery Program Council, building on the excellent work of Dan Le coming out of the VP of Medicine's office and using available support personnel, work with the Surgical Council in each HSDA to develop and implement a physician HR planning process in surgery which involves both Administration and surgeons.

This planning process to be pro-active and influenced by factors such as: current and future population need; referral patterns and historical surgical volumes; the redefined roles of surgical sites; the ages, practice modification plans or retirement plans of current surgeons, anaesthetists and pathologists; and, advances in technology related to surgery.

The HR Plan resulting from this process to include a determination of all financial impacts associated with any new recruit, and how any additional costs will be approved. The Plan to be regularly updated.

Outcome Measure:

- Availability and use of a pro-active, data-driven, up-to-date physician HR plan in surgery in each HSDA, jointly developed by Administration and surgical team members, and inclusive of a detailed impact analysis and approval process.

NH-Wide Recommendation # 13:

The Administration of the NW HSDA to proceed immediately to recruit a Urologist for the NW to replace the Urologist who is retiring in the near future and to ensure the availability of Urology equipment upgrades for MMH in Terrace.

Outcome Measures:

- Preserved Urology care, closer-to-home in the NW.
- Reduced clinical pressure at UHNBC.

8. Quality Assurance and Quality Improvement in the NH Surgery Program

Preferred State:

- Quality is an evident focus of the NH Surgery Program, which operates within a clearly defined NH Quality Framework, a framework well-understood by physicians and staff.
- The human resources devoted to the various aspects of Quality Program are sufficient to ensure full compliance of the Program with NH's quality agenda.
- Clinical quality is assessed and managed through the lens of generally accepted dimensions of clinical quality such as: Accessibility; Effectiveness of Clinical Processes; Patient Safety; Patient Centredness; Efficiency; Quality of Worklife; Quality Reporting.
- Quality issues, once identified, are addressed in a timely way, with follow-up reporting.
- The Program develops an Annual Report on Quality.

Current State:

- Work is currently underway to develop an over-arching Quality Framework for NH.
- The Surgery Program is responsible for advancing the quality agenda in Surgery. The Executive Director for Surgical Services, supported by a part-time Quality Advisor (7.2 hours per month), attempts to influence behaviour by leveraging her relationships with OR managers and HSAs. However, as outlined previously, the links between the Surgery Program and the operational management of clinical surgery are indirect, and the Surgery Program has limited access to resources devoted to quality.
- Given the above, the Consultants, while impressed with the evident skill and commitment of the health care professionals in surgery in NH, did not find evidence of an over-arching quality framework within the Surgery Program. As one marker of this, when the Consultants asked about the Program's Quality Framework, many interviewees clearly did not understand the question.

- The current status of quality assurance and improvement in surgery in NH, as assessed by gauging Program performance according to generally accepted dimensions of clinical quality is as follows:

  Accessibility: **(Healthcare that is timely, geographically reasonable and provided in a setting where skills and resources are appropriate to need. Indicators include such things as wait-times; delivery of care from Family Practitioner referral to ultimate treatment within a set time; is the right care being delivered by the right people in the right place and in a timely fashion (movement of services to where people are).**

  - Patient wait-times are now being measured as wait-one (from time of referral to time assessed in office) and wait-two (from time of booking surgery to time of surgery). Collecting data on wait-one times has been mandated as of April 2014, so data are limited.
  - NH data reveals that considerable work continues to be required in obtaining accurate wait-one times from surgeons' offices, however compliance with this requirement is improving. Some data on wait-one times is available in Orthopaedic Surgery. Surprisingly, a review of this incomplete data set reveals that most wait-one times (those in Kitimat being an exception) are quite short, although there are extreme outliers. Almost all of the outliers are for relatively minor surgical procedures, for example shoulder or knee arthroscopy.
  - If one looks just at wait-two times for non-urgent or emergent surgery, NH performs very well. With the exception of Ophthalmology, NH is the most common BC benchmark organization for 26 week and 52 week wait-two times. In Ophthalmology, NH lags, with 4.5% of patients waiting for more than 52 weeks and 21.5% for more than 26 weeks.
  - Surgeons in all sub-specialties report anecdotally that their emergent and urgent cases are completed in a timely way.
  - Based on the above, it is not surprising that NH achieves the provincial target of over 80% of cases being done within 52 weeks, and there is no hold-back of funds to NH.
  - It is impossible to determine wait-times for endoscopy. In NH, many patients are scheduled for colonoscopy outside of the B.C. Cancer Agency Screening Program, and only anecdotal wait-time data exist for such patients; some surgeons stated that their wait-times for non-urgent colonoscopy were very long, up to 9 months.

  Effectiveness of Clinical Processes**:** (**Healthcare that is adherent to an evidence base resulting in improved health outcomes for individuals and communities based on need. This requires the use of policies, procedures, guidelines, protocols and decision support tools.)**

  - The Executive Director of Surgical Services has attempted to work with sites to implement a number of provincially-mandated quality improvement initiatives,

including ones related to surgical check lists, antibiotic prophylaxis and Venothromboembolism (VTE) prevention. The Consultants heard from interviewees at a number of sites that surgeon compliance with the VTE protocol is inconstant. Similarly, compliance with the prophylactic antibiotic protocol is also inconsistent. Surgical checklists are in place and seem to be functioning well.

- At every site, the Consultants heard that there is wide variability in many aspects of surgical practice, ranging from pre-operative care to rehabilitation. There is little use of standardized order sets. There are well-established clinical pathways for hip and knee patients at UHNBC, but joint replacement patients are often discharged back to referring hospitals or to their communities without detailed rehabilitation care plans.
- There is a provincial initiative that is establishing credentialing and privileging guidelines for General Practice Anaesthesia (GPAs). Outside of UHNBC, GPAs deliver almost all of the anesthetics in NH, and this provincial initiative has resulted in considerable unwarranted concern amongst GPAs and others.

***Patient Safety*:** **(Healthcare which minimizes risk and harm to service users. Strategies to improve safety include: Incident reporting; analysis of healthcare outcomes such as infection rates, survival rates and complications; implementing systems control policies.)**

- In BC, efforts related to quality assurance and quality improvement in surgery are clearly a priority of government. At UHNBC, the National Surgical Quality Improvement Program (NSQIP) has been adopted. NSQIP has or is being effectively implemented at many surgical sites in BC, in most provinces across Canada and throughout the U.S. NSQIP has almost limitless potential as a quality tool. However, it is primarily an information gathering tool, and to use it organizations must devote significant resources to changing what needs to be changed as determined by the information being extracted from charts. At UHNBC, there is clinical reviewer who collects data, but no physician lead or designated quality resources, so the Program is dormant.
- In BC, the BC Quality Council is providing support to a number of centres through a program called CUSP (Comprehensive Unit-Based Safety Program) through which front-line staff become involved in the quality improvement effort.
- NH adopted a Patient Safety Learning System (PSLS) in 2009 through which adverse occurrences of various sorts can be reported, followed-up and responded to. The PSLS is managed centrally and does not appear to be functioning optimally, although significant work is underway to improve this. Currently, however, the Consultants were advised that there are over 900 outstanding PSLS files at UHNBC alone, many of them stale-dated. The Consultants obtained the list of outstanding PSLS files from 2012-2013 related to surgery in the NE, and there were 22 incomplete files. Most interviewees in the 11 surgical sites indicated that, if they submitted a PSLS report, they were rarely notified that it was being

investigated and almost never advised of the results of investigation. Accordingly, interviewees indicated there was little motivation to undertake the work required to fill out a PSLS report.

- The Consultants were advised by several interviewees that the surgical site infection (SSI) rate at UHNBC is high in a number of surgical specialties. Furthermore, infection control data reveal that over 80% of patients developing SSIs were hypothermic at the start of surgery, a known risk factor for infection. We could not find evidence these important quality issues are being addressed. The Consultants were also told that data suggests that many patients do not receive required pre-surgical antibiotic therapy within recommended time guidelines, and at several sites, data related to patient temperature at cut-time is often missing; there do not appear to be actions underway related to these lapses.
- There is no consistent approach to ensuring that interprofessional Morbidity and Mortality Rounds and interprofessional critical event reviews occur at various sites on a regular basis. Work is underway throughout NH to educate staff and physicians on processes related to effective investigation and management of critical events. At present, these processes are not operating optimally, and there does not appear to be effective dissemination of corrective information, thus avoiding repeated events.
- There do not appear to be effective and standardized processes related to ensuring the skill and competency of surgeons or the appropriateness of surgical procedures. The Consultants heard concerns from a number of interviewees about the organizational skill, wait list management, appropriateness of surgery and surgical skill of one surgeon, but there was no evident process in place to evaluate and manage the above. In NH, the C-Section birth rate ranges from 24-35%. At one site with a high rate, contributing causes were identified by a number of interviewees, however the issue persists.
- There is an audit process for Pathology reporting, but no surgical tissue audit.
- The Consultants were advised by many interviewees that there are issues related to the timely completion of operative notes and discharge summaries by some surgeons. At UHNBC, numerous stale-dated charts have allegedly been closed by Health Records without discharge summaries. Inadequate communication by surgeons to referring physicians and hospitals is a near-uniform concern expressed by referral sites throughout NH, as is detailed earlier in this report.
- Interviewees at a number of sites described uncertainty about Section 51 Review processes. The Consultants heard that such processes may take inordinately lengthy periods of time. The Consultants also heard that frequent turnover of staff contributes to lack of understanding about some of these key processes. This issue is being addressed by the NH initiative related to optimizing management of critical events.

Patient Centredness: ***(*****Healthcare that is genuinely focused on the individual needs, preferences and cultures of patients and their families. Care is patient-centred when, for example, patient satisfaction is sampled; there is a concerted effort to avoid complaints and, when they occur, swift resolution occurs and complaint statistics are used for improvement.)**

- As observed elsewhere in the Report, the Consultants interviewed many staff, administrators and physicians who clearly exhibited caring, compassion and absolute commitment to the welfare of the patients entrusted to them. The above notwithstanding, some elements of care within the Surgery Program could be changed to become more patient-centred. For example, the practice of 'block booking' patients for ambulatory care or clinic appointments can result in lengthy patient wait-times in uncomfortable surroundings. Additionally, the pre-admission processes for laboratory and radiology assessments at UHNBC often require long waits in various departments and can be arduous for patients, particularly the frail and elderly. These issues will be addressed in Section 3 of the Report.
- There is a Patient Care Quality Office which is located in Prince George which formally manages patient complaints.

Efficiency: **(Healthcare that is delivered in a manner which maximizes resource use and avoids waste. Examples of indicators include: ORs that run optimally as ensured by measurement and use of metrics; bed occupancy consistent with the delivery of high quality care by appropriately trained and competent staff.)**

- There are no standardized NH utilization review processes in surgery. There have been and currently are LEAN projects at various sites related to aspects of patient flow, but the results have not been generalized across NH.
- The lack of standardized booking, scheduling, pre-admission care and post-operative management leads to many inefficiencies, and has been described above.
- There are many other opportunities to improve resource utilization. For example, some UHNBC surgeons do not make rounds to assess and potentially discharge patients in the morning, even when the hospital is significantly over-capacity. This utilization management opportunity has been brought to their attention repeatedly, without effect.
- Most surgical sites in NH do not track OR metrics and those that do use a paper or manual process. The Consultants heard of many instances of frequent delays in starting the first case, slow turnaround times between cases, differences between estimated and actual surgical times and uncontrolled add-ons. As just one example, at UHNBC, it is reported that 5 cataract procedures typically take place in a half-day of surgery. Surgeons allege that the operation takes 15-20 minutes and the patient turnaround time takes 30-40 minutes. In other cataract centres,

the surgical output would be at least twice what is allegedly being accomplished at UHNBC. At UHNBC, full implementation of *Surginet* will allow such metrics to be captured and reported. This issue has been addressed above.

- In some sites with ICUs, lack of medical leadership and absence of standardized admission and discharge processes lead to ICU bed unavailability, conflicts between physicians and reduced efficiency relative to post-operative care and patient flow. This issue will be addressed in Section 3 of the Report.

Quality of Worklife: **(The Organization is considered a preferred employer by employees, as determined directly by staff satisfaction surveys, recruitment success, staff turnover rates, the results of exit interviews and indirectly by indicators such as sick time.)**

- The Consultants did not receive any data pertaining to staff satisfaction. There is a Gallup Survey that is conducted by from time-to-time by NH, however the Consultants were advised that results are not made available by Program, so there are no data specific to surgery. However, many interviewees indicated that interactions with physicians, when problematic, adversely affected the quality of worklife and had, in some instances, resulted in valued staff leaving NH.

Quality Reporting: **(There is clear and regular reporting of both corporate and clinical quality indicators to senior management and to the Board. Areas of concern are identified, responsibility for corrective actions assigned and follow-up reporting mandated.)**

- NH is in the process of developing an over-arching quality framework through which improvements in quality reporting, if required, will be achieved. The Surgery program in NH does not at present develop an Annual Quality report.

NH-Wide Recommendation # 14

The NH Surgery Program Council, with appropriate administrative support, to be charged with the responsibility of developing a Quality Plan for Surgery, which will then be implemented and reported upon by each HSDA Surgery Council. This Plan to ensure optimum use of existing roles (e.g. COS role) and to be aligned with the NH Quality Framework.

The elements of the Quality Plan to include:

- **A particular emphasis on developing a comprehensive understanding of the full potential of NSQIP, so as to implement it fully at UHNBC, followed by MMH in Terrace and Fort St. John Hospital, and then other surgical sites; this will require appointment of an enthusiastic physician champion and organizational capacity to act on data developed by chart reviewers;**

- **Expanding use of care maps and reducing variability in physician practice, commencing in Orthopaedic Surgery, and then in other surgical specialties;**
- **Ensuring regular conduct of inter-professional Morbidity and Mortality Rounds in all surgical specialties;**
- **Reviewing practices related to C- Section deliveries across NH, relative to accepted national standards;**
- **Working with NH's MACs to ensure operative and final notes on surgical patients are completed in a timely way;**
- **Ensuring optimum utilization of the PSLS in surgery, with a focus on timely event processing, documented actions as required, and enhanced communication;**
- **Ensuring optimum management of patient complaints in surgery and ensuring their origins are addressed, as required;**
- **Addressing physician behaviour that compromises efficiency within the Surgery Program;**
- **Obtaining and using available staff satisfaction survey data, as applied to surgery;**
- **Developing Annual HSDA Surgery Council Quality Reports.**

Outcome Measures:

- Development and implementation of a Quality Plan in each HSDA which fully addresses quality issues.
- An annual Quality Report on Surgery from each HSDA.

NH-Wide Recommendation # 15

That the NH Surgery Program work with the BC Cancer Agency to refine processes related to determining accurate wait-one and wait-two times for colonoscopy.

Outcome Measure:

- Accurate wait-time data for colonoscopy, which will facilitate service planning in this area.

NH-Wide Recommendation # 16

With the support of the NH VP of Medicine and VP Primary Care, Community and Clinical Programs, the Surgery Program Executive Lead to work with the Quality Lead in each HSDA to develop and implement a clear plan outlining how they will work together, share the resources they control and access NH resources devoted to quality to advance the quality agenda in surgery.

Outcome Measure:

- Optimization of collaboration between the Executive Director Surgical Services and the Quality Leads in each HSDA; optimization of access to and coordinated use of NH quality resources.

9. Orthopaedic Surgery in Northern Health

Preferred State:

- Joint Replacement Surgery is localized to the hub hospital (and designated Trauma Centre) of each HSDA.
- There is a Joint Replacement Surgery Intake Centre in each HSDA.
- The number of Orthopaedic Surgeons in each HSDA permits appropriate patient wait-one and wait-two times and sustainable regional call.
- Minor orthopaedic surgery, to the greatest possible extent, is performed in the urban/rural community hospitals in each HSDA, increasing care 'closer-to-home' and lessening pressure on the hub hospitals.

Current State:

- The organization of Orthopaedic Surgery in NH varies somewhat from HSDA to HSDA.
- In the NW HSDA, single surgeons operate in Prince Rupert and in Kitimat. This leads to a notional 1-in-2 call system in Orthopaedic Surgery in the NW, a call system that is unsustainable. Each surgeon has access to abundant OR time. The wait-one and wait-two data for each surgeon is limited, but early data suggest wait-one and wait-two times are lengthy in Kitimat. The Orthopaedic Surgeons in Kitimat and Prince Rupert each provide outreach services, the Kitimat surgeon in Smithers and the Prince Rupert surgeon in Terrace, performing only minor surgery.
- In the NE, Orthopaedic Surgery is centred at the Dawson Creek and District Hospital (DCDH). There are 2 surgeons. Each surgeon is assigned only 1 OR day per week, far less than the OR time assigned Orthopaedic Surgeons in the NW and NI. The wait-one and wait-two data from these surgeons is more complete than in the NW. One of the surgeons has short wait-one and wait-two times and the other has some lengthy wait-one times and short wait-two times. The Orthopaedic Surgeons in Dawson Creek provide outreach services to the Fort St. John Hospital, performing only minor surgery there.
- The 8 Orthopedic surgeons at UHNBC have been provided significant additional operating room time for hip and knee replacement surgery (and daily time for trauma surgery), and wait-one and wait-two times at UHNBC are falling and are generally within target.

- There is a Hip and Knee Clinic at UHNBC, with a common patient entry system, a prioritization system and the ability to assign patients to surgeons with short wait-times. However, patients may choose their own surgeon or are often referred directly to Orthopedic Surgeons outside of this process. Orthopaedic Surgeons as well as patients can be unaware of the wait list and that there are surgeons with shorter lists and that this option may be available for patients.
- The Orthopaedic Surgeons at UHNBC provide outreach surgery in Vanderhoof and Quesnel and limited outreach surgery and consultations in Smithers.
- The Consultants were told that the per capita joint replacement surgery rates in NH appear very high, but were advised that these rates are highly variable from centre-to-centre across Canada.

NH-Wide Recommendation # 17

That the Administrations of each HSDA and each HSDA Surgery Council work together to enhance and standardize NH's provision of Orthopaedic Surgery, with the objectives of:

- **Improving wait-one and wait-two times, particularly in the NW;**
- **Ensuring consistent and sustainable call in Orthopaedic Surgery in each HSDA;**
- **Enhancing system efficiency is surgery;**
- **Providing enhanced surgical care in Orthopaedics 'closer to home;'**
- **Lessening surgical volumes at UHNBC.**

The following to be done in order to achieve the above:

- **Planning for the future consolidation of joint replacement surgery to MMH in Terrace, the proposed NW HSDA hub hospital and to Fort St. John Hospital, the proposed hub hospital in the NE HSDA; joint replacement surgery is already consolidated at UHNBC in the NI HSDA;**
- **Create additional capacity in Orthopaedic Surgery in the NW HSDA. *Option One:* recruit an additional Orthopaedic Surgeon to Kitimat now, this individual sharing the resources assigned to Orthopaedic Surgery there. This option would result in lessening of wait-one and wait-two times there, sustainable regional call and lessening of clinical pressure at the Prince Rupert Regional Hospital, at which occupancy currently exceeds 100%. *Option Two:* explore the feasibility of having Orthopaedic Surgeons who visit the BVDH in Smithers participate in regional call in the NW when they are there; some additional equipment and expanded OR time would be required at the BVDH in Smithers. *Option Three*: defer the recruitment of a third Orthopaedic Surgeon in the NW until completion of the proposed capital redevelopment of MMH in Terrace, when all Orthopaedic Surgery in the NW will be centralized there.**

- **Plan for the recruitment of an additional Orthopaedic Surgeon at the Fort St. John Hospital, once Orthopaedic Surgery is consolidated there.**
- **As previously recommended (see Section: *The Surgical Patient Care Journey)* develop and implement a model of care where patients are referred to a central intake clinic in each HSDA where they are assessed, triaged according to severity of disability and assigned a surgeon primarily on the basis of surgeon wait-lists;**
- **Optimize the outreach activities of Orthopaedic Surgeons at non-joint replacement surgery sites, permitting greater volumes of minor trauma and minor elective Orthopaedic Surgery to be done there, with resultant lessening of pressures on the surgery programs of the hub hospitals. A particular opportunity exists related to Orthopaedic Surgery at the SJH in Vanderhoof and the GRBMH in Quesnel. Currently, ACL repairs are done at both sites and wait-lists are falling. If ACL repairs were localized to one site, the other could do other forms of shoulder surgery such as shoulder arthroscopy, rotator cuff surgery, and Bankart repairs, thus lessening the pressure on UHNBC ORs. Another opportunity exists at the BVDH in Smithers.**

Outcome Measures:

- Standardized assessment and triage of prospective joint replacement surgery patients.
- Reduced wait-one and wait-two times.
- Increased availability of consistent regional call in Orthopaedic Surgery in each HSDA
- Enhanced outreach and performance of minor Orthopaedic Surgery with resultant decreased pressure on larger sites.
- Greater care 'closer-to-home;' improved patient experience.

10. Trauma Care in Northern Health

Preferred State:

- A fully-integrated and accredited Trauma Program in NH, localized in the hub hospital of each HSDA.

Current State:

- NH has a formal Trauma Program. There is an Executive Lead (shared with Critical Care and also the NH representative on a Patient Transfer Network Pilot Project related to urgent transfers of high-acuity patients), a Regional Trauma Manager, a Regional Trauma Medical Director, and a Trauma Coordinator and Medical Director in each HSDA. Within NH's Trauma Program, UHNBC is designated a level 3 site and the FSJ Hospital and the MMH in Terrace are designated as level 5 trauma sites. This is problematic, as neither the FSJ Hospital nor the MMH in Terrace have major

Orthopaedic Surgery, at present. NH's Trauma Program is scheduled to undergo an accreditation review in 2016.

- NH's Trauma Program is organized primarily through its Emergency Departments. This is appropriate, as the contemporary approach to trauma care minimizes the need for operative management. Increasingly, trauma patients are transferred to sites possessing advanced imaging technologies or to a site for Neurosurgery or, occasionally, Thoracic Surgery.
- The NH Trauma Program operates within a "Life, Limb, Threatened Organ No Refusal Policy," With rare exceptions, this works well. Occasionally, UHNBC refuses to accept a patient; this is described as a 'personality dependent' occurrence, when it happens. Not uncommonly, patients are transferred to Grand Prairie or Edmonton, as timely air transport is more easily accessed using Alberta resources.
- Lack of availability of a Physiatrist at UHNBC compromises the rehabilitation care of trauma patients transferred to that site.

The Consultants have no specific recommendations related to the NH Trauma Program. The issue of ensuring full surgeon compliance at UHNBC with the "Life, Limb, Threatened Organ" transfer policy will be addressed elsewhere in the Report. There is a modification of NSQIP (TQIP) for trauma programs; NH's Trauma Program should consider acquiring this quality tool, which would also generate important service delivery planning data.

11. Breast Diagnostic and Surgical Treatment Services in Northern Health

Preferred State:

- There is a standardized approach to breast diagnostic and surgical therapeutic work in each NH HSDA.

Current State:

- Breast diagnostic and surgical treatment services are provided at the MMH in Terrace within the NW, UHNBC in the NI HSDA and at both Dawson Creek and District Hospital and Fort St. John Hospital in the NE HSDA. However, processes and treatments are not standardized and notable gaps exist in each HSDA.
- The MMH in Terrace functions as the regional breast centre for the NW, however the functioning of this service is limited by both ultrasound technician availability and occasional lack of availability of a Radiologist who does breast biopsies.
- The organization of the Breast Centre in Prince George (PG) and at UHNBC is unusual. Screening and some diagnostic work is performed in the private sector, but no

biopsies; biopsies are processed at UHNBC but then reviewed in the private clinic where breast radiologists work; there is no digital mammography in PG; because of the above, patients wait long periods of time for their diagnostic work to be completed. Additionally, there are limited surgical resources available for breast reconstruction surgery.

- There is no formal breast centre in the NE HSDA, some breast diagnostic and treatment work being performed at both the Dawson Creek and District Hospital and the Fort St. John Hospital. Only Fort St. John Hospital has digital mammography. There have been substantive issues related to the processing of breast biopsy tissue, particularly related to processing of tissue for hormone receptor assessment.

NH-Wide Recommendation # 18

That the NH Surgery Program Council, using available resources and working with others, explore how best to develop a Breast Diagnostic and Surgical Treatment Centre in the hub hospital of each HSDA and how to ensure that all processes related to the diagnosis and treatment of breast disease are standardized and evidence-based.

Outcome Measures:

- Standardized, evidence-based care delivered to patients with breast disease in each HSDA.
- Enhanced availability of breast reconstruction surgery in NH.

12. Ophthalmology in NH

Preferred State:

- Unique but highly efficient structures and processes for Ophthalmologic Surgery are in place in each HSDA.
- Cataract surgery is conducted in specialized cataract surgery ORs, outside of the main OR suites.
- Wait-one and wait-two times meet established targets.

Current State:

- Facilities and processes for cataract surgery are different in each HSDA, although in each HSDA, Ophthalmology is located at the proposed hub hospital.
- In the NW, there is one Ophthalmologist, localized at the MMH in Terrace. Cataract surgery is conducted in a designated surgical suite.

- In the NI, Ophthalmology is located at UHNBC. Cataract surgery is conducted in the main OR.
- In the NE, Ophthalmology is located at the Fort St. John Hospital, and performed by visiting surgeons from Vancouver. Cataract surgery is performed in the main ORs.
- Wait-one times for cataract surgery are lengthy and prescribed wait-two performance targets are not being met in NH. In addition, during the 2012/2013 fiscal year 601 patients had daycare procedures performed for diseases and disorders of the eye in other BC hospitals and 167 patients accessed day surgery for the same out of province.
- At UHNBC, the number of cataract cases performed during each surgical slates is very low.

NH-Wide Recommendation # 19

Each HSDA Surgery Council to ensure that cataract surgery is being conducted with optimum efficiency and the wait-one and wait-two times meet established targets. At UHNBC, cataract surgery to be moved into a designated suite, not necessarily within the hospital. Arrangements with a private surgical centre to be explored. Data related to treatment of NH patients with surgical eye disease outside of NH to be understood, and actions undertaken to increase care 'close-to-home.'

Outcome Measures:

- Increased efficiency of cataract surgery, with resultant reductions in wait-one and wait-two times.
- Lessened pressure on hub hospital ORs, particularly at UHNBC.
- Enhanced patient care.
- Reduced costs.

13. Surgery Care of NH Patients Outside of BC:

Preferred State:

- Surgical care for NH residents is provided to the greatest possible extent in NH or in other BC centres.
- Concrete policies exist for the transfer of patients to centres outside of BC.
- Data related to the transfer of NH patients outside of NH are regularly reviewed, to ensure compliance with established policies.

Current State:

- On a regular basis patients access both in-patient services and surgical daycare procedures outside of BC. The need to access care outside of BC may pertain to reasons such as: access to services not available in NH such as Cardiac Surgery or Neurosurgery; gaps in surgical specialist coverage; nurse staffing shortages; inpatient bed pressures; or, in some cases, individual patient choices. In some areas of NH due to the geography and distance to travel it is easier for patients to access care in Alberta. The consultants heard that in the NE HSDA it may be easier to travel to Grand Prairie for surgical care than to Prince George or Vancouver.
- The consultants were provided with data on the total number of patients/residents from within NH who received care outside of BC. In-patient procedures completed on NH Residents outside of British Columbia in 2012/2013:
  - 477 residents (5.8 % of the total) received in-patient procedures outside of BC.
  - Of the 477 residents noted above 443 residents received care in Alberta
  - The top 5 inpatient Major Clinical Categories for in-patient procedures outside of BC include:
    - 93 residents received in-patient care for diseases and disorders of the circulatory system.
    - 71 residents received in-patient care for significant trauma, injury poisoning and toxic effects of drugs (note: this includes orthopaedic trauma).
    - 48 residents received in-patient care for diseases and disorders of the digestive system.
    - 42 residents received in-patient care for diseases and disorders of the musculoskeletal system and connective tissue.
    - 35 residents received in-patient care for diseases and disorders of the female reproductive system.
- Daycare surgery procedures completed on NH Residents outside of British Columbia in 2012/2013:
  - 1,059 residents (3.5 % of the total) received daycare surgery procedures outside of BC.
  - The top 5 daycare surgery Major Ambulatory Care Codes for daycare procedures performed outside of BC include:
    - 229 residents received daycare surgery for diseases and disorders of the digestive system.
    - 167 residents received daycare surgery for diseases and disorders of the eye.
    - 152 residents received daycare surgery for diseases and disorders of the circulatory system.

- 114 residents received daycare surgery for diseases and disorder of the kidney, genitourinary tract, male and female reproductive system.
- 101 residents received daycare surgery for diseases and disorders of the ear, nose, mouth and throat.

- Due to the existing privacy of information agreements the consultants did not have access to site specific data related to the transfer of patients or access to care for patients outside of BC. Many people to whom the consultants spoke in the NE HSDA told us that due to distance and time related to travel, it is not uncommon for patients from the NE to access care in Alberta as opposed to UHNBC or other surgical centres within BC. Unfortunately it was not possible to quantify the volume of patients from the NE HSDA who received their surgical care in Alberta.

NH-Wide Recommendation # 20

That the NH Surgery Program Council, using available resources, develop and implement a process through which detailed data regarding patients receiving care outside of NH are made available and are regularly reviewed. The NH Surgery Program to propose policies governing the transfer of such patients.

Outcome Measure:

- Provision of surgical care 'closer-to-home' for NH residents

14. The Partnership Between NH and its Surgical Program Physicians:

Preferred State:

- NH and its surgical medical staff enjoy a mutually-beneficial relationship, one that has been jointly developed and widely communicated and is based on the concept of partnership.
- This relationship fully acknowledges the importance of NH involving physicians in policy decisions related to clinical work, in decisions related to the acquisition of information technology and equipment and in capital planning exercises.
- This relationship also emphasizes the importance of NH's surgical medical staff adhering to the Organization's Medical Staff Bylaws.
- NH's Medical Directors, Chiefs-of-Staff and Department Heads fully understand their separate roles, and work collegially with surgeons and anaesthetists to ensure the above is accomplished.
- The interests of the patient are always placed first.

- There is a virtuous circle in physician engagement as more physicians see that they are having a real influence in decision-making and policy development, and become more willing to be enthusiastically engaged.

Current State:

- In NH, there are opportunities to enhance physician involvement in areas such as clinical policy development, acquisition of equipment and information technology and capital planning processes. There has been a recent NH focus on ensuring medical leaders such as Medical Directors and Chiefs-of-Staff attend administrative leadership meetings, however more work needs to be done to ensure excellent communication from medical leaders to physicians and broad consultation with physicians on a number of fronts. It does not appear that NH has a highly engaged physician population in the surgical program.
- On the other side of the relationship, some physician behaviors suggest that elements of a physician culture of power and entitlement continue to exist in surgery in NH. It is impossible to determine the frequency with which such behaviors occur. However, it is clear that each occurrence takes on a life of its own, becomes much talked about by staff and other physicians, and becomes part of the mythology and culture of the organization. As one example, the Consultants heard about the same 2 specific instances of physician misbehavior at one hospital from a number of different interviewees during different meetings. The physician behaviors the Consultants heard about - irrespective of their frequency - are not emblematic of a focus on patients or their families, and are unaligned with the stated Values and Goals of NH, such as: Respect, Integrity, Stewardship, Quality and Collaboration.

- Examples of the above, examples which exist to varying degrees in a number of surgical sites, include:
  - Some physicians acting as if they 'own' the OR time, in-patient beds and ambulatory care facilities they use in NH;
  - Lack of consideration by some physicians in providing suitable notice well in advance of scheduled absences;
  - Some physicians refusing to coordinate their call schedules, resulting in overcapacity issues at some sites - which then affect other sites;
  - Refusal by some surgeons or anaesthetists to attend to patients at night, when called;
  - Abusive behavior by some physicians (verbal abuse of staff, kicking of OR garbage cans, slamming clinic doors in the faces of staff attempting to 'share' NH clinic space);
  - Non-compliance by some physicians with provincially-mediated quality initiatives;
  - Some surgeons or anaesthetists showing up late for ORs;

- Some surgeons refusing to make rounds and discharge patients early in the day, even when the facility may be overcapacity;
- Some surgeons in states of tirade with obstetricians when an emergency C-Section requires 'bumping' of another case;
- 'Block booking' of clinic and ambulatory care appointments - resulting in patients, even old and frail patients - having to wait long periods of time for colonoscopy, for example, after being prepped and while fasting;
- Some physicians openly admitting that some C- Sections are performed "out of convenience", for example before a weekend.

- The Consultants emphasize again that their focus is on behaviors, not individuals. The Consultants also recognize that these behavioral patterns - common or occasional - have developed over decades, that they have not been addressed, and that "what one permits, one promotes." Indeed, the fact that unacceptable physician behaviors have and are not being addressed is a major concern; multiple interviewees indicated that, while the PSLS initiative was not working well, at least occasional PSLS submissions dealing with nurses were responded to, while it was vanishingly rare for PSLS reports related to doctors within the Surgery Program to evoke any discernable response or feedback to the initiator of the PSLS report.
- The Consultants heard from many physicians, administrators and staff that unacceptable physician behaviour had been tolerated in NH for years, because of a belief that physicians might leave and be difficult to replace. The Organization does not seem fully aware that there are now many specialist physicians without positions, that NH has matured in reality and in reputation as a health care organization, and that it is no longer extremely difficult to recruit to NH.

NH-Wide Recommendation # 21

That NH, under the guidance of the NH VP Medicine and beginning at UHNBC, launch a physician engagement initiative in surgery, that will emphasize the value of physicians working in full partnership with the Organization to the benefit of patients, staff and physicians, and establish clarity regarding the steps required to achieve this state. Subsequently, the approaches and learnings from UHNBC to inform similar processes at all surgical sites.

Other elements in support of physician engagement to include:

- **Sufficient support personnel so that work actually gets done;**
- **The provision of information at the time policies are being developed or decisions with clinical impact are being made;**
- **Finding ways to support physicians with specific interests, if the area of interest is aligned with NH and the NH Surgical Program Council's priorities.**
- **Compensation for physicians involved in Council and committee work.**

Outcome Measures:

- A formal physician engagement initiative commencing in the Department of Surgery at UHNBC, and subsequently brought to other NH surgery sites.
- An enhanced partnership between physicians and the Organization, developed through agreed-upon and mutual change.
- Enhanced consultation and collaboration between the UHNBC Administration and surgeons and anaesthetists regarding matters such as equipment purchases and capital re-development projects.

NH-Wide Recommendation # 22

The NH VP Medicine, working with others, continue to do a detailed review of the organization and functionality of all aspects of the Medical Organizational Structure related to surgery;

This review to focus on the following:

- **The position descriptions, recruitment processes, time commitments, compensation, infrastructure support and accountability framework for each medical leadership position in surgery;**
- **How best to ensure there are significant advantages associated with serving in medical leadership positions, and that these advantages are appreciated;**
- **How best to identify and develop potential medical leaders;**
- **How incumbent medical leaders are best nurtured and supported;**
- **The terms of reference, membership, functioning and accountability of all committees related to surgery, such as the Surgical Solutions Committee and the Ambulatory Care Committee at UHNBC;**
- **Identify compensation levels and sources of compensation for physicians spending time on administrative and committee work.**
- **The role of the COS in ensuring compliance of surgeons with the Medical Staff Bylaws of the Organization and in the timely processing of PSLS files and patient complaints with feedback reporting.**

Outcome Measures:

- Enhanced medical leadership development and support.
- More valued and sought-after medical leadership positions.
- An enhanced Medical Organizational Structure in NH.
- Collaborative structures in NH that are effective in dealing in a definitive and timely way with utilization management issues in surgery and with issues related to unacceptable surgeon and anaesthetist behavior.

SECTION 3

SITE-SPECIFIC ISSUES, OPPORTUNITIES AND RECOMMENDATIONS

"Northern Health provides high quality health services, using evidence and innovation, to meet the needs of our Northern and rural population. We are known for the creativity of our staff and physicians and for our innovative use of technology to care for people as close to home as possible."

From NH Vision - 2015

North West Health Service Delivery Area

Bulkley Valley District Hospital (BVDH), Smithers:

In BVDH in Smithers there are 16 funded beds along with 6 overflow beds in the acute care facility which provides emergency, medical, surgical, maternity and palliative services. A specialist nursing team provides care for those undergoing cancer treatments.

The surgical site profile of the Bulkley Valley District Hospital is summarized in *Table 1*.

Surgical Activity Summary-Bulkley Valley District Hospital (BVDH) – Smithers – Local Health Area 054			
LHA population: 16,222 Town of Smithers: 5,437	**Communities Served:** Traditional territories of the Wet'suwet'en and Dakelh (Carrier) peoples. Moricetown is located on the southern edge of the Upper Skeena LHA. Fort Babine and Old Fort are located nearby on Babine Lake.	**In-patient beds:** 25 **Occupancy:** 85.1% **ICU beds:** None **ED Visits:** 14,953 **Ambulatory Visits:** 6,161 **Deliveries**: 229 **Vaginal:** 169 **C-Sections:** 60 **C-Section rate:** 26%	**OR Services** **# of OR Theaters**: 2 **Days per week:** 1 OR /4 (Tues-Fri) **On-call:** 24/7 **Staffing:** all RN staff
Preadmission Clinic Process: GPAs see higher risk patients the day before surgery at the end of their slate. No preadmission clinic or nurse on site	**Booking Office:** OR Booking Clerk and a Visiting Specialist Office (VSO) Clerk. This clerk functions as a preadmission nurse to ensure everything is in place prior to surgery. Visiting surgeons often stay late to see patients after their slate	**Anesthesia Coverage:** 3 GPA's	**General Surgery/Section Coverage:** 4 GPS
Surgical Day Care Cases: 1,264	**Inpatient Surgical Cases:** 139	**Endoscopies:** 850 27 Urinary Intervention 821 Gastrointestinal 2 Other	**Endoscopy Location:** OR

Resident Specialists: Dental 1 Paediatrician	**Visiting Specialists:** 2 General Surgeons 4 Orthopaedic Surgeons 1 Urologist 1 Gynecologist 1 ENT Surgeon
Specialist Offices: Provided within Visiting Specialist Area	
OR Time Allocation: Visiting General Surgeons are scheduled first and the others work within the remaining time	

Source: Health Authority Profiles, NH Financial cube data and Stakeholder Focus Groups, NH Perinatal C-Section Data.

Site-Specific Issues and Opportunities in Surgery at the BVDH in Smithers:

Several of the NH-wide issues identified in Section 2 of the Report are evident in surgery at the BVDH in Smithers, most notably: staffing shortages; issues with the surgical patient journey; lack of OR metrics; non-standardized allocation of resources to surgeons; lack of a clarified site role; and, an inadequate focus on quality assurance and improvement. In addition:

- The Surgical Program operates primarily through visiting surgeons supported through the Northern Isolation Travel Allowance; GPs decide which surgical services are needed for their patients;
- Offices are provided visiting surgeons, who perform some procedures and then see new patients in these offices;
- The predominant surgical activity is endoscopy, which takes place in an OR;
- There is unutilized capacity; the 2 ORs operate 4 days a week; more Orthopaedic Surgery could be done, however there is no C-arm at the BVDH in Smithers;
- A significant number of patients travel out of the community within the HSDA for orthopaedic care. In 2012-2013, 46 patients from Smithers received daycare surgery procedures at the Prince Rupert Regional Hospital and 78 patients from Smithers received daycare surgery in Kitimat General Hospital and Health Centre for diseases and disorders of the musculoskeletal system and connective tissue; 72 patients from Smithers with similar disorders traveled to UHNBC in the NI for daycare procedures.
- The visiting Orthopaedic Surgeons perform very little surgery; they assess patients for joint replacement surgery, which is then done at UHNBC;
- There is General Surgery coverage 2-3 weeks/month; otherwise, General Surgery coverage is provided through regional call out of then MMH in Terrace and Prince Rupert Regional Hospital;

- The OR Manager position is currently vacant, although at the time of writing of this report, a possible recruit has been identified;
- There is a full-time OR Booking Clerk and a full-time Visiting Specialist Clerk; visiting surgeons consider these positions, and other clerical support positions provided, to be essential; however, the work pattern of the Visiting Specialist Clerk is unsustainable;

Site-Specific Recommendation # 1 (BVDH) Smithers

That the position and responsibilities of the Visiting Specialist Clerk be reviewed and a formal role description be developed. The role description to reflect a standardized NH approach to PAC care and guidelines for the nature/magnitude of support to be provided to visiting specialists.

Outcome Measure

- Role description for role of Visiting Specialist Clerk.

Site-Specific Recommendation # 2 (BVDH) Smithers

The NW HSDA Surgery Council, working with NW HSDA Administration and others, to consider the expansion of the Visiting Surgeon Program at BVDH in Smithers. This would allow patients to receive care closer to home, decongest and reduce the pressure on Prince Rupert Regional Hospital and UHNBC and utilize the unused OR capacity at BVDH in Smithers. The range of Orthopaedic surgery conducted at BVDH in Smithers could expand. In sites such as FJH in Vanderhoof and GRBMH in Quesnel, visiting Orthopaedic Surgeons perform a wider range of minor surgery, thus alleviating OR pressures in their home site.

Outcome Measures:

- Expanded surgical role for BVDH in Smithers to provide more care "closer to home."
- Reduced pressure in ORs at UHNBC, the Kitimat General Hospital and Health Centre and the Prince Rupert Regional Hospital.
- Potential for reduction in Orthopaedic Surgery wait-times.

Wrinch Memorial Hospital, Hazelton

WMH in Hazelton is an acute care facility that operates under United Church Health Services through an affiliation agreement with NH It has a diversity of services under its roof, including a doctor's clinic and 24-7 emergency room, a pharmacy, home and

community care, lab, ultrasound and X-ray services, physiotherapy and occupational therapy, complex care, diabetes education, and visiting specialists.

The surgical site profile of the WMH is provided in *Table 2*

Surgical Activity Summary - Wrinch Memorial - Hazelton- Local Health Area 053			
LHA population: 5,432	**Communities Served:** Hazelton, New Hazelton and South Hazelton	**Inpatient beds:** 10 **Occupancy:** 81.8% **ICU beds:** None **ED Visits:** 7.646 **Ambulatory Visits:** 3,199 **Deliveries:** 8 **Vaginal:** 8 **C-Section:** None	**OR Services** **# of OR Theaters:** 2: 1 used as OR and one for endoscopies. **Days per week:** 2 **On-call:** 24/7 **Staffing:** all RN staff
Preadmission Clinic Process: Patients are assessed by GPA on site as required	**Booking Office:** Clerk 12 hrs per week	**Anesthesia Coverage:** GPA - on call coverage 24/7	**General Surgery/Section** Coverage: None on site, regional on-call only
Surgical Day Care Cases: 218	**Inpatient Surgical Cases:** 16	**Endoscopies:** 5 Urinary interventions 153 Gastrointestinal	**Endoscopy Location:** OR
Resident Specialist: Dentist- 2 days per month		**Visiting Specialists:** 2 General Surgeons 2 ENT Surgeons 1 Urologist 2 Dentists	
Specialist Offices: Visiting specialist see patients on site			
OR Time Allocation: Dentist 2 days per month			

Source: Health Authority Profiles, NH Financial cube data and Stakeholder Focus Groups, NH Perinatal C-Section Data.

Site-Specific issues and Opportunities in Surgery at the Wrinch Memorial Hospital in Hazelton:

Several of the identified NH-wide issues (Section 2 of the Report) are evident in surgery at the WMH in Hazelton, most notably: staffing shortages related to recruitment and retention difficulties; aspects of the surgical patient journey; and, unclear site role definition. In addition:

- The Consultants were advised that the WMH in Hazelton is the last acute care institution in Canada directly affiliated with the United Church of Canada and the United Church Health Services Society (UCHSS). It is operated by the UCHSS through a 2002 affiliation agreement. The United Church of Canada continues to operate the nearby medical and dental clinic and pharmacy and provides other support, including some housing support to physicians and staff;
- There is an OR that runs 2 days per week; only day procedures are conducted, primarily endoscopy along with some minor ENT surgery, and procedures such as hernia repairs, tubal ligations and vasectomies;
- There were a total of 51 daycare procedures and 157 endoscopies performed at WMH in Hazelton in 2012/2013.
- In 2012/2013 only 8 women delivered babies; the consultants were informed there were approximately 50 deliveries by Hazelton women that occurred elsewhere;
- There is no 24/7 C-Section coverage at the WMH in Hazelton;
- There is a high number of surgical cancellations at WMH in Hazelton ;
- There is significant sharing of health human resources between the WMH in Hazelton and the BVDH in Smithers, including RNs, physicians, an infection control practitioner, and sterile supply staff;
- While there is unutilized surgical capacity at the WMH in Hazelton, the predominant medical needs of this underprivileged and vulnerable community appear to lie elsewhere: there is a high prevalence of chronic disease, including diabetes, chronic rheumatologic diseases, mental health disorders and disorders related to substance abuse;

Any service changes at WMH in Hazelton would need to come out of discussions with NH and the United Church of Canada, therefore the consultants will not provide any recommendations for this facility.

Prince Rupert Regional Hospital, Prince Rupert:

Prince Rupert Regional Hospital is a 25-bed facility offering a full-range of services including diagnostics, ultrasound, CAT scan, surgery, emergency, day care, acute care, and extended care with additional services such as diabetes education, healthy heart and rehabilitation programs.

The surgical site profile of Prince Rupert Regional Hospital is summarized in *Table 3.*

<table>
<tr><th colspan="4">Surgical Activity Summary-Prince Rupert Regional Hospital
Local Health Area 052</th></tr>
<tr><td>LHA population:
14,320</td><td>Communities Served:
Haida Gwaii and Masset
Metlakatla which is accessible by ferry; Lax Kw’alaams, Gitxaala and Giga’ accessible by float plane or boat.</td><td>In-patient beds: 25
Occupancy: 105.7%
ICU beds:
2 beds that swing between ICU and High Acuity
ED Visits: 21,404
Ambulatory Visits: 11,751
Deliveries: 164
Vaginal: 118
C- Sections: 46
C-Section rate: 28%</td><td><u>OR Services</u>
# of OR Theatres: 3
Days per week: 5 (only 2 ORs are staffed)
On-call: 24/7
Staffing: all RN staff</td></tr>
<tr><td>Preadmission Clinic Process: Patients are seen by a nurse in the ED outpatient area, and referred to a GPA by the surgeon as required.</td><td>Booking Office:
1 FTE. Surgeons complete their own schedules and forward cards to the booking clerk.</td><td>Anesthesia Coverage:
GPA: 4 - 3 PT and 1 FT</td><td>General Surgery/Section Coverage:
2-GPS and 1 OB</td></tr>
<tr><td>Surgical Day Care Cases:
1,777</td><td>Inpatient Surgical Cases: 428</td><td>Endoscopies:
56 Urinary intervention
623 Gastrointestinal
52 Other</td><td>Endoscopy Location:
OR</td></tr>
<tr><td colspan="2">Resident Specialists:
1 General Surgeon - participates in regional on call with Terrace
1 Orthopedic Surgeon - participates in regional on call with Kitimat
1 Gynecologist and 3 Dentists</td><td colspan="2">Visiting Specialists:
1 Urologist, 1 ENT Surgeon
1 Plastic Surgeon, 1 Dentist

Specialist Offices: Located on site</td></tr>
<tr><td colspan="2">OR Time Allocation:
<u>Resident:</u> Each surgeon has 2 days a week. They have access to additional time on Friday if time is available. Resident surgeons have access to more OR time if dental slates are not filled</td><td colspan="2"><u>Visiting:</u>
Urology: 2 days per month
Plastic Surgery: 3 days per visit, twice a year
Dentistry: 3.5 days per month</td></tr>
</table>

Source: Health Authority Profiles, NH Financial cube data and Stakeholder Focus Groups, NH Perinatal C-Section Data

Site-Specific Issues and Opportunities in Surgery at the Prince Rupert Regional Hospital:

A number of the identified NH-wide issues (Section 2 of the Report) were evident in surgery at the, Prince Rupert Regional Hospital most notably: critical shortages of staff; aspects of the surgery patient journey; absence of OR metrics; allocation of resources to surgeons and management of add-ons; lack of clarity regarding site role; an insufficient focus on quality assurance and improvement; organizational issues in Orthopaedic Surgery; and, issues related to physician behavior. In addition:

- The majority of the surgical activity in 2 ORs, 5 days per week, is related to Orthopaedic Surgery and General Surgery; each of these services is provided by a single surgeon; the 2 surgeons participate in regional call in their specialties; to date, their call schedules have not been synchronized and they may be on call the same week; when this happens, the hospital experiences more over-capacity; additionally, if the Prince Rupert Regional Hospital cannot take call because of an overcapacity situation, the burden of call effectively falls to the MMH in Terrace;
- Both the Orthopaedic Surgeon and the General Surgeon have access to much more OR time than is typical;
- Staffing shortages in surgery threaten the ability of the Surgery Program to continue current operations.
- The General Surgeon performs most of the ERCP procedures for the NW HSDA;
- There is a 2-bed ICU that swings between the provision of critical care and high acuity care;
- There are 4 GPAs; at times, the GPAs have on-call conflicts, e.g. on-call for C-Sections and also for the ED; after 5 PM could be working in ED and on-call for OR;
- The site occupancy rate is 105.7% and in-patient overcapacity is an issue.
- The staff continues to “flash” dental equipment which was raised as a concern.

Site-Specific Recommendation # 3 (Prince Rupert Regional Hospital)

That NH HR work closely with the Prince Rupert Regional Hospital to solve the particularly urgent staffing issues that currently threaten the viability of the Surgery Program there. (As described in Section 2, staffing shortages are a NH-wide issue. This issue is emphasized again here because of the threat it poses to the viability of the Surgery Program at Prince Rupert Regional Hospital).

Outcome Measure:

- Continuances of current level of surgical activity at the Prince Rupert Regional Hospital after summer closures have ended.

Site-Specific Recommendation # 4 (Prince Rupert Regional Hospital)

That the NW HSDA Surgery Council ensure that the sole practitioners in Orthopaedics and General Surgery coordinate their call schedules so as to avoid over-capacity situations at the Prince Rupert Regional Hospital which also affect other hospitals.

Outcome Measure:

- Co-ordinated surgeon call schedules, resulting in fewer over-capacity situations at Prince Rupert Regional Hospital.

Site-Specific Recommendation # 5 (Prince Rupert Regional Hospital)

That the NW HSDA Surgery Council ensures that GPA call schedules be arranged to avoid potential availability conflicts.

Outcome Measure:

- Assured availability of on-call GPAs.

Kitimat General Hospital and Health Centre:

The Kitimat General Hospital and Health Centre is a 31 acute care bed unit with medical/paediatric and surgical/obstetrical wards. Facilities include an outpatient-emergency department, case room, operating room units, physiotherapy, radiology and laboratory departments, as well 36 residential care beds attached as Mountainview Lodge.

The surgical site-specific profile of Kitimat General Hospital and Health Centre is detailed in *Table 4.*

Surgical Activity Summary- Kitimat General Hospital-Local Health Area 080			
LHA population: 10,165	**Communities Served:** Coastal community of Kitkatla on Dolphin Island, Hartley Bay community of the Gitga'at Nation and the Haisla community of Kitimaat Village	**In-patient beds:** 31 **Occupancy:** 81.1% **ICU beds:** None **ED Visits:** 11,843 **Ambulatory Visits:** 1,986 **Deliveries:** 59 **Vaginal:** 45 **C-Sections:** 14 **C- Section Rate:** 24%	**OR Services** **# of OR Theaters:** 2 **Days per week:** 5 and staff only 1 OR (alternate rooms) **On-call:** 24/7 **Staffing:** all RN staff

Preadmission Clinic Process: Diagnostics are arranged by Booking Clerk- no preadmission clinic or nurse on site. Surgeon will decide if GPA needs to see the patient pre-op otherwise the GPA will see the patient the day of surgery.	**Booking Office:** Clerk - 1 FTE. Booking cards are sent to clerk who prepares the slate.	**Anesthesia Coverage:** GPA: 2 (1 FT and 1 PT)	**General Surgery/Section Coverage:** 1 GP Surgeon
Surgical Day Care Cases 1,230	**Inpatient Surgical Cases:** 198	**Endoscopies:** 37 Urinary Intervention 493 Gastrointestinal	**Endoscopy Location:** Separate Endoscopy Suite
Resident Surgeon: 1 Orthopedic Surgeon- participates in regional on call with Prince Rupert 1 Dentist		**Visiting Specialists:** 1 Urologist 1 ENT Surgeon 2 Dentists 1 General Surgeon	
Specialist Offices: Specialist offices are provided on site			
OR Time Allocation: **Resident:** Orthopedic Surgeon: 10-12 days per month		**Visiting Specialist:** 1 Urologist- 2x per month 1 ENT Surgeon: 1 day per month 1 General Surgeon: 7-9 days per month; will do heavier cases in the AM followed by endoscopies 2 Dentists: total of 1 day a month for the dental service (dentists alternate months)	

Source: Health Authority Profiles, NH Financial cube data and Stakeholder Focus Groups, NH Perinatal C-Section Data.

Site-Specific Issues and Opportunities in Surgery at the Kitimat General Hospital and Health Centre:

A number of the identified NH-wide issues (Section 2 of the Report) are evident in surgery at the Kitimat General Hospital and Health Centre, most notably: staffing pressures; issues related to the surgical patient care journey; absence of OR metrics; allocation of resources to surgeons; an insufficient focus on quality assurance and improvement; and, issues pertaining to the organization of Orthopaedic Surgery. In addition:

- The Obstetrics Program is small, 59 deliveries per year, mostly by one GP who is also the GP-surgeon who provides C-Section coverage, backed up by the General Surgeon;
- The General Surgeon splits his time between Kitimat (endoscopy and minor surgery) and Terrace;
- The OR staff are a close and committed group, who provide excellent service; however, they are not cross-trained and are reluctant to participate in surgical in-patient or ED care when significant need exists;
- The Orthopaedic Surgeon in Kitimat follows some of his post-operative patients by video, using MEDEO. Billing is permitted for this;
- The General Surgeon in Kitimat performs most of the Intravenous Access Device insertions in the NW;

Issues related to Orthopaedic Surgery in Kitimat have been dealt with elsewhere in the Report (see Section 2: "*Orthopaedic Surgery in NH.")* There are no additional site-specific recommendations for the Kitimat General Hospital and Health Centre.

Mills Memorial Hospital, Terrace:

MMH is a 44-bed acute care facility serving Terrace and its surrounding area. The facility includes an Emergency Outpatient Department, Operating Room, ICU, inpatient units, Renal Unit, lab and diagnostic imaging, Oncolcogy, and an in-patient Mental Health Unit.

The site-specific surgical profile of MMH is detailed in *Table 5.*

Surgical Activity Summary- Mills Memorial Hospital- Terrace- Local Health Area 088			
LHA population: 20,647	**Communities Served:** The Tsimshian communities of Kitsumkalum and Kitselas/Gitselasu. Gitxsan communities of Gitwangak/Kitwanga and Gitanyow/Kitwancool.	**In-patient beds:** 44 **Occupancy:** 100% **ICU beds:** 4 **ED Visits:** 25,767 **Ambulatory Visits:** 11,180 **Deliveries:** 340 **Vaginal:** 257 **C-Sections:** 83 **C- Section rate:** 24%	**OR Services** **# of OR Theaters:** 5 **Days per week:** 3 days – 3 rooms 2 days- 2 rooms **On-call:** 24/7 **Staffing:** all RN staff Separate Ophthalmology Suite

Preadmission Clinic Process: No formal clinic or processes in place, but under development	**Booking Office:** No booking office or clerk on site. Surgeons do own booking.	**Anesthesia Coverage:** GPA: 2 FT, 1 x .5 and 2 casuals	**General Surgery/Section Coverage:** 2 OB
Surgical Day Care Cases: Cases: 3,987	**Inpatient Surgical Cases:** 558	**Endoscopies:** 85 Urinary interventions 1,131 Gastrointestinal: 56 Other	**Endoscopy Location:** Operating Room
Resident Specialists	3 General Surgeons participate in regional on call with Prince Rupert 1 Urologist 1 ENT Surgeon	1 Ophthalmologist 2 Gynecologists 3 Dentists	
OR Time Allocation **Resident Surgeons:** General Surgery: 1 surgeon has 1 OR and 1 scope day/week and the other has 1.5 days/wk, including scope day Urology: 1 day per week		Resident con't Gynecology: 2 surgeons each have one day and one assist day. ENT Surgeon: usually 1.5 day/week **Specialist Offices:** Office space not provided on site	

Source: Health Authority Profiles, NH Financial cube data and Stakeholder Focus Groups, NH Perinatal C-Section Data.

Site-Specific Issues and Opportunities in Surgery at the Mills Memorial Hospital in Terrace:

A number of the identified NH-wide issues in surgery (Section 2 of the Report) are evident at the MMH in Terrace, most notably: staffing issues; aspects of the surgery patient journey; absence of OR metrics; management of add-ons; inadequate physician HR planning; insufficient attention to quality assurance and quality improvement; and, issues related to breast diagnostics and treatment. In addition:

- The MMH in Terrace has 3 ORs (usually using 2), an Endoscopy Suite, a cataract room and a procedure room in the ED. It also has a 5-bed ICU. A full complement of surgeons (General Surgeons, an Ophthalmologist, Gynecologists, a Urologist, an ENT specialist and Dentists) work at the MMH in Terrace. It functions informally as the 'hub' hospital for the NW HSDA;
- The ORs are small and outmoded; the ORs are too small to accommodate Orthopaedic Surgery.

- MMH in Terrace is a designated Trauma center, but finds it difficult to live up to this expectation without an orthopedic service on site. Frequently trauma patients are transferred out due to orthopedic trauma.
- The ICU is an 'open' ICU and there is no formalized medical leadership and no standardized admission or discharge criteria; lack of clarity regarding admission policies and priorities at times impedes flow of patients from the OR, and may lead to unnecessary disagreements between physicians;
- There is one Pathologist, who sends more complex work to Prince George; wait-times in Pathology are at times lengthy;
- There is inconsistent ultrasound coverage at this site;
- The ability to meet the Central Reprocessing Standards pertaining to clean and soiled equipment is an issue.

Site-Specific Recommendation # 6 (Mills Memorial Hospital, Terrace)

The Consultants endorse the work currently underway through which a capital redevelopment of the MMH in Terrace will hopefully be approved.

Outcome Measures:

- Designation of the MMH in Terrace as the hub hospital in the NW HSDA.
- Consolidation of Orthopaedic Surgery at the MMH.
- Development of enhanced trauma services at the MMH.
- Reduction of capacity pressures at other sites.

Site-Based Recommendation # 7 (Mills Memorial Hospital, Terrace)

That the NW HSDA support the Critical Care Program's initiative to confirm the ICU at MMH in Terrace as the NW's Regional ICU in keeping with the hub hospital model for the NW. The ICU at MMH will require established medical leadership and the development of standardized admission and discharge criteria ensuring access, enhancing critical care and surgical flow. This is also aligned with the designation of MMH in Terrace as the Trauma Centre for the NW.

Outcome Measures:

- Improved critical care and surgical patient flow.
- Less overtime in the PACU.
- Enhanced quality of care.
- Avoidance of physician conflicts.

Northern Interior Heath Service Delivery Area

St. John Hospital, Vanderhoof

SJH in Vanderhoof is a 24 acute care bed facility. The services provided at SJH include emergency treatment, labor and delivery-ray and ultrasound, minor orthopedic surgery, minor general surgeries, in-patient recreation and physiotherapy.

The surgical site profile of St. John Hospital in Vanderhoof is profiled in *Table 6.*

Surgical Activity Summary St. John Hospital- Vanderhoof- Nechako Local Health Area-053			
LHA population: 14,998 **Vanderhoof polulation:** 5,000	**Communities Served:** **First Nations include:** Tl'azt'en, Nak'azdli, Yekooche, Nadleh Whut'en and Saik'uz Nations.	**In-patient beds:** 24 **Occupancy:** 106.6% **ICU beds:** None **ED Visits:** 12,091 **Ambulatory Visits:** 1,829 **Deliveries:** 159 **Vaginal:** 103 **C-Sections:** 56 **C-Section rate:** 35%	**OR Services** **# of OR Theaters:** 1 **Days per week:** 5 days **On-call:** 24/7 **Staffing:** all RN staff
Preadmission Clinic Process: RN completes the pre-operative phone consult and works in the clinic with the GPA. GPA may consult 1 wk in advance or same day of surgery. Visiting specialist provides consultation independently at end of slate in facility.	**Booking Office:** Staffed by an LPN who compiles the slate.	**Anesthesia Coverage:** 4 GPAs	**General Surgery/Section Coverage:** 4 GP Surgeons
Surgical Day Care Cases: 1,435	**Inpatient Surgical Cases:** 109	**Endoscopies:** 388 387 Gastrointestinal 1 Other	**Endoscopy Location:** OR

Resident Surgeons: 4 GP Surgeons (1 does endoscopies) 1 GP Endoscopist	**Visiting Surgeons:** 6 Orthopaedic Surgeons 2 ENT Surgeons Plastic Surgeon
Specialist Offices: Utilize space in facility but work independently.	
OR Time Allocation: GP Endoscopists: 1 day scoping/wk Mon- local endoscopy Tues- shared between visiting and local.	Wed -Dental Thur- General Surgery Fri- Other

Source: Health Authority Profiles, NH Financial cube data and Stakeholder Focus Groups, NH Perinatal C-Section Data

Site Specific Issues and Opportunities in Surgery at St. John Hospital, Vanderhoof:

Relative to the NH-wide issues in surgery (Section 2 of the Report), the surgery program at SJH in Vanderhoof would benefit from: a standardized surgery patient journey; availability of IT-enabled OR metrics; clarification of hospital site roles; and, increased emphasis on quality assurance and quality improvement. Of note:

- Transitional housing is provided to new staff; this is very beneficial to recruiting;
- Interviewees identified unmet surgical needs in the areas of Urology and Gynecology;
- Tremendous community and physician support exists for staff education and the acquisition of equipment;
- During the 2012/2013 fiscal year, 617 daycare surgery procedures were performed on residents of the Nechako LHA at UHNBC. The greatest proportion of these daycare surgeries at UHNBC were for diseases and disorders of the digestive system (190 patients); kidney, genitourinary, male and female reproductive system (165 patients); and musculoskeletal system and connective tissue (135 patients).

Site-Specific Recommendations (St. John Hospital, Vanderhoof):

The positive organizational culture of SJH in Vanderhooof is clearly evident. Medical and administrative leadership is strong and there is much to learn from this organization.

Site-Based Recommendation # 8 (St. John Hospital, Vanderhoof)

The NI HSDA Surgical Council look for opportunities to increase the number of daycare procedures performed at SJH in Vanderhoof. (This was previously discussed in Section 2). There may be opportunity to increase services in Orthopaedic Surgery, Urology and endoscopy which would decrease clinical pressures at UHNBC.

Outcome Measures:

- Increased efficiency of surgical service delivery in region.
- Reduced clinical pressure at UHNBC.

GR Baker Memorial Hospital, Quesnel:

The GRBMH in Quesnel is a 38-bed acute care with four ICU beds, five crisis stabilization beds and a 40-bed extended care facility.

The surgical site profile of the GRBMH in Quesnel is detailed in *Table 7.*

Surgical Activity Summary-GR Baker Memorial Hospital-Quesnel-Local Health Area 028			
LHA population: 24,051 **Quesnel population:** 9,746	**Communities Served:** Several first nations including Lhatka- Dene, Nazko, Esdilagh, Lh'oosk'uz Dene and Ultkatcho.	**In-patient beds**: 38 **Occupancy:** 105% **ICU beds:** 4 **ED Visits:** 17,442 **Ambulatory Visits:** 8,741 **Deliveries:** 158 **Vaginal:** 107 **C-Sections:** 51 **C-Section rate:** 32%	**OR Services** **# of OR Theaters:** 2 (1 runs 5 days and the other runs 3 days/wk) **Days per week:** 5 **On-call:** 24/7 **Staffing:** all RN staff
Preadmission Clinic Process: GPA will see patients in own office or day of surgery. Visiting specialists see new patients following OR Day.	**Booking Office:** Booking Clerk develops surgical slate according to physician requests – slate is made up 2 weeks in advance. The Booking Clerk organizes teaching clinics.	**Anesthesia Coverage:** 5 GP Anesthetists	**General Surgery/Section Coverage:** 5 GP Surgeons alternate weekly

Surgical Day Care Cases: 1,675	**Inpatient Surgical Cases:** 237	**Endoscopies:** 57 Urinary interventions 636 Gastrointestinal 7 other	**Endoscopy Location**: 3rd Operating Room
Resident Surgeons: 2 General Surgeons 1 ENT Surgeon 4 Dentists		**Visiting Specialists:** 1 General Surgeon 2 Plastic Surgeons 1 Urologist 3 Orthopaedic Surgeons 1 Ophthalmologist	
Specialist Offices: Suite for visiting specialists			
OR Time Allocation: General Surgery 23 days/ 4wks (includes scopes) **Visiting Specialists:** ENT Surgeon - 1 day/4 wks		Plastic Surgery- 1 day/ 4 wks Orthopaedic Surgery- 4 days/4 wks Urology- OR AM/Cysto in afternoon.	

Source: Health Authority Profiles, NH Financial cube data and Stakeholder Focus Groups, NH Perinatal C-Section Data.

Site-Specific Issues and Opportunities in Surgery at the GR Baker Memorial Hospital, Quesnel:

A number of the identified NH-wide issues in surgery (Section 2 of the Report) are in evidence at the GRBM Hospital in Quesnel, most notably: staffing issues; aspects of the surgery patient journey; lack of availability of OR metrics; allocation of resources to surgeons; physician HR planning; lack of clarity of site role; and, insufficient focus on quality assurance and improvement. In addition:

- There are 2 ORs, but one is closed 2 days per week; interviewees stated they would "like it back";
- Interviewees expressed unmet needs in the areas of Urology and Gynecology;
- "Too close to Prince George, but too far," particularly in winter when transportation limited and at times very dangerous;
- In 2012/2013 fiscal year, 640 residents form the Quesnel LHA received daycare procedures at UHNBC for the following procedures:
  - Kidney, genitourinary tract, male and female reproductive system (194 residents).
  - Musculoskeletal system and connective tissue (143 residents).
  - Digestive system (106 residents).

- ENT (21 residents)

- There is a 4-bed ICU, which only runs when the sole Internist is present; lack of admission/discharge criteria for ICU a concern; many inappropriate admissions ,e.g. for oxygen saturation monitoring;
- There were 159 deliveries in 2012/2013 and a very high C-Section rate of 32%.
- OR days end at 1:30-2:30 PM, since OR nurses are required to staff the PARU; substantial OR overtime is required - several days per week.

Site-Specific Recommendation # 9 (GR Baker memorial Hospital, Quesnel)

The NH Surgery Council, working with the NI Administration, to consider expansion of day surgery services at this site, including expanded OR time for the resident ENT surgeon and potential recruitment of a visiting Urologist and a visiting Gynecologist.

Outcome Measures:

- Expanded surgical services 'closer to home.'
- Reduced surgical pressures at UHNBC.

Site-Specific Recommendation # 10 (GR Baker Memorial Hospital, Quesnel)

The NI HSDA Surgery Council to support the Critical Care Program's recommendations regarding the role and functioning of the ICU (or High Acuity Unit) at the GRBMH.

Outcome Measures:

- Improved efficiency of use of ICU and enhanced surgical flow.
- Enhanced surgical patient care.

University Hospital of Northern B.C., Prince George:

UHNBC is located in Prince George and is the clinical academic campus for undergraduate physician training through the Northern Medical Program, run by the University of British Columbia and University of Northern British Columbia. UHNBC is a 212 bed Tertiary Care facility that provides all core and specialty services with the exception of the Neurosurgery and Cardiac surgery. The newly built BC Cancer Center for the North is located adjacent to UHNBC.

The surgical site profile of UHNBC in Prince George is detailed in *Table 8.*

Surgical Activity Summary-University Hospital of Northern British Columbia (UHNBC) in Prince George- Local Health Area- 057			
LHA population: 96,984 Prince George population: 75,000 UHNBC is a clinical academic campus and hosts residents in UBC's family resident program	**Communities Served:** Traditional territories of the Dakelh (Carrier) peoples and the people known as the Lheidli T'enneh.	**In-patient beds:** 212 **Occupancy:** 116.5% **ICU beds:** 10 7 bed High Acuity Unit 8 bed Orthopaedic Surgery post-op unit 3 bed surgical step-down **ED Visits:** 47,863 **Ambulatory Visits:** 89,185 **Deliveries:** 1,101 **Vaginal:** 766 **C-sections:** 335 **C-section rate:** 30%	**OR Services** **# of OR Theaters:** 7 **Days per week:** 5 Emergency OR from 1130-1530 M-F. **On-call:** 24/7 **Staffing:** RNs, Clerks and Aids **Scoping:** Endoscopy Suite **Ophthalmology:** main OR
Preadmission Clinic Process: Nurse screens patients and clerk books patients into the Preadmission Clinic	**Booking Office:** Staffed by booking clerks who develop the surgical slate and anesthetist rosters. The surgical slate is finalized 2 days before surgery. Physician offices book scopes and block book patients.	**Anesthesia Coverage:** 24/7 **Section Coverage:** OB	
Surgical Day Care Cases: 12,379	**Inpatient Surgical Cases:** 5,047	**Endoscopies:** 1,327 Urinary interventions 4001 Gastrointestinal 263 Other	**Endoscopy Location:** Cysto and endoscopy suites in Ambulatory Care
Resident Specialists	9 General Surgeons 8 Orthopaedic Surgeons 4 Ophthalmologists	5 Gynecologists 3 Urologists 2 Plastic Surgeons	1 Maxillofacial Surgeon Multiple Dentists 1 ENT Surgeon

Specialist Offices: Off site **OR Time Allocation :** Each surgeon has one day/wk plus endoscopy time; Orthopaedic Surgeons have more OR time	Some specialties have split their existing time allocation to share amongst the newer recruits

Source: Health Authority Profiles, NH Financial cube data and Stakeholder Focus Groups, NH Perinatal C-Section Data.

Site-Specific Issues and Opportunities in Surgery at University Hospital of Northern British Columbia, Prince George:

Each of the identified NH-wide issues in surgery (Section 2 of the Report) is evident at UHNBC. In addition:

- The selection of the Chief-of Surgery works on a rotational basis and is not competition based.
- 7 ORs; 4-5 ORs in summer; emergency OR from 11:30 to no-longer-needed (mostly Orthopaedic Surgery); there is no other OR kept open for emergencies during the day;
- Each surgeon is assigned one day per week of OR time plus OR time that "falls open" when surgeons are away plus one-half day per week of Ambulatory Care time; Orthopaedic Surgeons are assigned additional OR time for joint replacement surgery and daily trauma OR time;
- The ORs at UHNBC are described as being small and outmoded; although there has been substantial population growth in Prince George over the past decade, interviewees indicated only one additional OR has become available during that time; in the Orthopaedic Surgery OR, the viewing boxes do not accommodate contemporary CT image files; smoke evacuators are not being utilized by physicians and they are not completing the requirement to capture fluoroscopy times;
- Cataract surgery is performed in the main OR (This issue is addressed in Section 2 of the Report: "Ophthalmology *Services in NH*").
- The Ambulatory Care Department consists of 2 Endoscopy Suites, 2 cystoscopy rooms; rooms for fluorescein angiography, minor surgery, venous access device insertion, intravenous therapy and bronchoscopy; surgeons are assigned clinic time and then book their own clinic slates; significant over-booking is common; there is an Ambulatory Care Steering Committee, but it does not seem to be fully effective in problem solving and policy setting;
- There is a lack of privacy in the OR holding area;
- The ICU is a closed unit which functions effectively; a newly developed 7-bed High Acuity Unit has just recently opened;

- The Consultants learned of lack of alignment between the Department of Anaesthesia and the Department of Surgery on a number of matters; anaesthetists and surgeons are paid differently, resulting in different incentives;
- The installment of *Surginet* has been problematic; this issue is being addressed on multiple fronts;
- There are >1,100 deliveries annually; emergency C-Sections are performed in the OR, often requiring that other cases be bumped; this practice has led to notable physician disagreements;
- There is no interventional radiologist at UHNBC;
- Surgeons and anaesthetists at UHNBC state that they have not always been consulted regarding important equipment purchases or Information Technology initiatives;
- There is no interest amongst surgical staff at UHNBC for development of a bariatric surgery program;
- There is an interest in future planning for cardiac services; in 2012-2013, 712 patients accessed inpatient care outside of NH in other BC hospitals for diseases and disorders of the circulatory system and 152 patients accessed such care outside of BC.
- The Surgical Solutions Committee is co-chaired by the Chiefs of Surgery and Anaesthesia and has all of the key stakeholders around the table, but a number of interviewees indicated that it did not function well as a problem-solving or policy-setting entity;
- UHNBC operates at over 115% capacity; as a consequence, some types of surgery within the scope of practice at UHNBC is being referred elsewhere. Examples include: breast reconstruction surgery and flap closure of chronic wounds;
- At the same time, some Worksafe BC-related surgery that could be performed elsewhere is being performed at UHNBC;
- The topic of efficiency- an important determinant of clinical quality - is discussed in Section 2: *"Achieving Maximally Efficient Surgical Services."* However, there are a large number of utilization management issues at UHNBC, which deserve description. These include:
    - Many inefficiencies associated with booking and scheduling of surgery and with pre-anaesthesia care; these will be addressed through full implementation of *Surginet*;
    - Many inefficiencies in the ORs; OR metrics will ultimately be captured by *Surginet*, creating an opportunity for their management;
    - Anaesthetists and surgeons routinely show up late for the first case on weekends; nursing staff arrive on time and then have to wait; partially as a consequence of late starts, weekend OR overtime is not uncommon;

- Management of emergency cases is described as being difficult and inefficient. The Consultants were told: “At 3 AM, no-one wants to come in; at 7 AM, it is difficult to find an anaesthetist; at 8 AM, no OR is available;”
- Some surgeons refuse to make rounds early in the day to discharge patients, even when the hospital is over-capacity; this results in patients requiring lengthy stays in the PACU later in the day, while beds are being found;
- Some surgeons refuse to come to the in-patient unit at night, when called;
- Some surgeons do not visit patients they have sent to the ED until the end of the day which results in extended ED lengths of stay and contributes to ED congestion;
- Patients needing surgery may wait in hospital for days, their surgeries being repetitively cancelled, while elective slates and multiple add-ons are completed; there does not seem to be a process to manage this;
- Cataract surgery and C-Sections are being performed in the main ORs
- Surgeons book their own ambulatory care clinic appointments, and often over-book or tell patients: “just go to clinic;”
- Interviewees described some anaesthetists refusing to attend maternity patients at night for management of epidurals;
- RNs in the pre-operative areas do not start the preoperative IVs, resulting in delays within the OR;

Issues such as these have been identified elsewhere in the Report and Recommendations suggested.(Section 2: “*Achieving Maximum Efficiency in Surgery in NH*” and “*The Partnership Between NH and its Surgery Program Physicians.”*

Site-Based Recommendation # 11 (UHNBC)

The Administrations of the NI HSDA and NH to initiate a planning process for the capital redevelopment of the ORs at UHNBC, with consideration of adding additional ORs in anticipation of ongoing population growth and aging and introduction of additional services.

Outcome Measures:

- Enhanced capacity in surgery at UHNBC.
- Creation of excess capacity in anticipation of future needs.

Site-Specific Recommendation # 12 (UHNBC)

The Administration of UHNBC, working with the NI HSDA Surgery Council, to explore options for opening the OR next to maternity services for C-Section and double set-up surgery; arrangements with Anaesthesia for provision of reliable 24/7 coverage to that OR will be required.

Outcome Measure:

- Significantly enhanced patient safety (mother and infant).
- Reduced OR congestion and overtime.

Site-Based Recommendation # 13 (UHNBC)

A review of the organization and functioning of the Ambulatory Care Department at UHNBC has been completed. The Consultants appreciate that the Administration of UHNBC will implement certain recommendations from this report, but encourage rapid action on the following: surgeons should no longer be permitted to schedule their clinic appointments and block booking of patients into Ambulatory Care and into the Cast Clinic should be discontinued.

Outcome Measure:

- More efficient and patient-centered Ambulatory Care processes.

Site-Based Recommendation # 14 (UHNBC)

The NH Administration and the Administration of UHNBC, working with the NI Surgery Council, to explore options for outsourcing surgical procedures to the Prince George Surgery Centre to reduce clinical pressures in surgery at UHNBC. Areas to be explored include:

- **Cataract Surgery;**
- **Plastic surgery performed on behalf of Worksafe BC;**
- **Breast reconstruction surgery;**
- **Other surgical procedures currently being referred out- of-region, such as flap closure of chronic wounds;**

Outcome Measures:

- Reduced clinical pressures at UHNBC
- Increased care 'closer-to-home'.
- Increased efficiency and reduced costs.
- Enhanced patient satisfaction and quality of care.

Site-Based Recommendation # 15 (UHNBC)

That NH negotiate an arrangement with Vancouver Coastal (Richmond General Hospital) and the Vancouver Island Health Authority for access to Bariatric Surgery for NH patients

Outcome Measure:

- Agreements ensuring access to Bariatric Surgery Services for NH patients.

Site-Based Recommendation # 16 (UHNBC)

That the Administration of UHNBC to conduct a detailed analysis of the transfer of patients from NH to other jurisdictions for treatment of cardiac disorders. The UHNBC Administration, working with NH Senior Leadership Team, to than make a decision regarding future planning for an interventional cardiology suite and for a cardiac surgical facility.

Outcome Measures:

- Detailed analysis of transfers out of Northern Health for cardiac procedures.
- A decision regarding planning for Cardiac Services.

North East Health Service Delivery Area

Fort St. John Hospital:

Fort St. John Hospital is a new state-of-the-art 55 bed hospital serving the local population of Fort St. John and a catchment area of 69,000. The facility offers a full range of services including diagnostics, surgery, acute care, medicine, ICU, maternity, palliative care, a community cancer centre and community hemodialysis. There is also a social worker, aboriginal liaison worker and visiting specialist clinic program.

Detailed information regarding surgical activity at the Fort St. John Hospital is presented in *Table 9.*

Surgical Activity Summary-Fort St. John Hospital- Peace River North Local Health Area- 060			
LHA population: 35,925 Fort St. John Population: 21,000	**Communities Served:** Territories of the Dane-zaa Beaver and Cree peoples. Local First Nations include Halfway River Blueberry River and Doig River as well as many people of Metis heritage.	**In-patient beds:** 55 Occupancy: 93.7 % **ICU beds:** 3 **ED Visits:** 24,880 **Ambulatory Visits:** 13,064 **Deliveries:** 647 **Vaginal:** 477 **C-Sections:** 172 **C-Section rate:** 27%	**OR Services** **# of OR Theaters:** 3 (1 for C-sections) **Days per week:** Mon-Tues- 2ORs; Friday 1 OR only. **On-call:** 24/7 **Staffing:** all RN staff
Preadmission Clinic Process: RN .34 FTE allocation for PAC. GPA will see everyone who receives an anesthetic.	**Booking Office:** Clerk completes the slate; books other i.e. needle biopsies and other specialist appointments.	**Anesthesia Coverage:** GPA: currently 5 moving to 6 in the near future	**General Surgery/Section Coverage:** 4 GP Surgeons
Surgical Day Care Cases: 2,782	**Inpatient Surgical Cases:** 350	**Endoscopies:** 1 Urinary Intervention 927 Gastrointestinal 16 Other	**Endoscopy Location:** OR
Resident Specialists: 2 General Surgeons (1 position is currently unfilled). They participate in the regional on call with Dawson Creek and District Hospital 2 Gynecologists 1 Dentist GP Surgeons: Slotted into space when resident surgeons are not available		**Visiting Specialists**: 2 ENT Surgeons 2 Orthopaedic Surgeons 6 Ophthalmologists (1 Paediatric) 1 Dentist 1 Maxillofacial Surgeon	
Specialist Offices: Visiting Specialists see patients in Visiting Specialist Department			
OR Time Allocation: General: 1 OR and 2 scope days one week and 2 OR and 1 scope day the next week. Gynecology: Every Wed plus additional time		Every Wed and Friday : Visiting Specialists Orthopaedic Surgery: 1-2 days per month	

Source: Health Authority Profiles, NH Financial cube data and Stakeholder Focus Groups, NH Perinatal C-Section Data.

Site-Specific Issues and Opportunities in Surgery at Fort St. John Hospital:

A number of the identified NH-wide issues in surgery (Section 2 of the Report) are in evidence at the, Fort St. John Hospital most notably: aspects of the surgery patient journey; physician HR planning and recruitment; lack of availability of OR metrics; allocation of resources to surgeons; lack of clarity regarding hospital role; insufficient focus on quality assurance and improvement; issues related to organization of Orthopaedic Surgery; and, issues related to breast diagnostics and treatment. In addition:

- Fort St. John Hospital is a new facility with considerable unutilized capacity in surgery;
- Lack of availability of sufficient surgeons for predictable, sustainable call; this impacts ED functioning; also interferes with ability of Fort St. John Hospital to recruit physicians;
- The "ICU" at Fort St. John Hospital is not a true ICU; it functions as a High Acuity Unit.
- A number of physician interviewees indicated: "in Fort St. John and Dawson Creek, NH has 2 three-quarter hospitals - neither having predictable specialist on-call availability, neither having a fully-functional ICU;"
- Lack of FRCP Anesthetist(s); current GPAs realize that a FRCP Anaesthetist is required in Fort St. John;
- Currently, considerable work in surgery takes place in Grand Prairie, Vancouver, Edmonton and Prince George that could take place in Fort St. John Hospital. For example, the availability of 2 general surgeons would allow more complicated bowel surgery to be performed. The availability of more advanced anaesthesia and an enhanced ICU would also permit higher acuity surgery. (70 patients from Peace River North received in-patient surgical care at UHNBC).
- Patients from Fort St. John Hospital who have joint replacement surgery or hip fracture repair at the Dawson Creek and District Hospital are often returned to the Fort St. John Hospital for recovery; they are sent with some orders, but there are no Orthopaedic surgery care maps in place at the Fort St. John Hospital, and in-hospital recovery times are often lengthy. Fort St. John Hospital staff currently lack the post-operative orthopaedic training to provide optimal care.
- The perioperative team is a high-functioning unit, with excellent morale. There is excellent leadership and initiatives related to professional development, innovative recruiting and availability of an educator have contributed to the above. Education of young staff benefits older staff.

Site-Specific Recommendation # 17 (Fort St. John Hospital)

The NE HSDA Surgery Council to support the Critical Care Program in recommending that a regional ICU for the NE be developed at the Fort St. John Hospital with identified leadership and developed admission and discharge criteria. This recommendation is aligned with the hub and spoke model proposed and with Fort St. John Hospital's design as a trauma centre.

Outcome Measures:

- Enhanced critical care capacity in the NE.
- Enhanced surgical patient flow.
- Fewer patient transfers.
- Increased performance of higher acuity surgery.
- Facilitation of specialist physician recruitment.

Site-Based Recommendation # 18 (Fort St. John Hospital)

The NE HSDA Surgery Council, working with others, to ensure the recruitment of at least one FRCP Anaesthetist to the Fort St. John Hospital.

Outcome Measures:

- Enhanced anaesthesia services.
- Enhanced education of GPAs.
- Ability to do more complex surgery.

Dawson Creek and District Hospital (DCDH):

Dawson Creek and District Hospital is a full service community hospital that provides service to Dawson Creek and surrounding communities. The facility has 31 in-patient beds, an ED - Outpatient Unit, inpatient units, lab and medical imaging, Oncology and an in-patient Mental Health Unit.

Detailed information regarding surgical activity at Dawson Creek and District Hospital is provided in *Table # 10.*

<table>
<tr><th colspan="4">Surgical Activity Summary-Dawson Creek and District Hospital
Peace River South Local Health Area- 059</th></tr>
<tr><td>LHA population: 27,777
Dawson Creek population: 11,000</td><td>Communities Served: Traditional territories of the Dane-zaa, Cree and the Saulteau speaking peoples, The West Moberly First Nations and the Saulteau First Nations as well as many people of Metis Heritage.</td><td>In-patient beds: 31
Occupancy: 95.1%
ICU beds: 1 funded; 3 additional monitored beds
ED Visits: 22,706
Ambulatory Visits: 9,409
Deliveries: 348
Vaginal: 255
C-Sections: 93
C-Section rate: 27%</td><td><u>OR Services</u>
# of OR Theaters: 2 - alternate between rooms
Days per week: 5
On-call: 24/7
Staffing: all RN staff</td></tr>
<tr><td>Preadmission Clinic Process: RN 3 days per week. Patients scheduled by clerk</td><td>Booking Office: Clerk schedules according to times physician provide</td><td>Anesthesia Coverage: 3 GPAs and 1 temporary GPA</td><td>General Surgery/Section Coverage: Regional on call with gaps in service</td></tr>
<tr><td>Surgical Day Care Cases:
2,790</td><td>Inpatient Surgical Cases: 733</td><td>Endoscopies:
29 Urinary Interventions
926 Gastrointestinal
6 Other</td><td>Endoscopy Location: Emergency Department</td></tr>
<tr><td colspan="2">Resident Specialists:
1 General Surgeon-participates in regional on call with Fort St. John
2 Orthopaedic Surgeons
1 Gynecologist</td><td colspan="2">Visiting Specialists:
1 Urologist</td></tr>
<tr><td colspan="4">Specialist Offices: On Site in the Emergency Department</td></tr>
<tr><td colspan="4">OR Time Allocation:
Ortho: 1 day per/ week per surgeon
Gynecology: 1 day per week</td></tr>
</table>

Source: Health Authority Profiles, NH Financial cube data and Stakeholder Focus Groups, NH Perinatal C-Section Data.

Site-Specific Issues and Opportunities in Surgery at Dawson Creek and District Hospital:

A number of the NH-wide issues in surgery described in Section 2 of the Report are in evidence at Dawson Creek and District Hospital most notably: staffing issues; the patient journey in surgery; lack of availability of OR metrics; physician HR planning issues; insufficient emphasis on quality assurance and quality improvement; allocation of resources to surgeons; uncertainty about hospital role; and, issues related to the organization of Orthopaedic Surgery. In addition:

- There are elements of non-productive competition between Dawson Creek and District Hospital and Fort St. John Hospital;
- There is a Medical Executive instead of a COS, but this arrangement is working well and beginning to attack issues;
- The Dawson Creek and District Hospital is frequently over-capacity and surgical cases are frequently postponed due to overcapacity and sometimes due to staffing issues;
- The number of endoscopy procedures on some days is excessive (up to 30 per day);
- 105 patients from Peace River South received daycare surgery at UHNBC in 2012/2013.
- 3 DC surgeons are nearing retirement; the General Surgeon is performing less surgery; the Gynecologist and one of the Orthopaedic Surgeons is nearing retirement;
- Central Sterile Supply at Dawson Creek and District Hospital a risk issue due to the physical space and inability to meet national standards;
- Occupational and Physiotherapy vacancies have been a challenge in the past and are a significant concern at this time.

Site-Specific Recommendation # 19 (Dawson Creek and District Hospital)

The NE HSDA Surgery Council and the NE Administration to support the Critical Care Program's goal of reconfiguring the ICU at the Dawson Creek and District Hospital to a 'High-Acuity Unit' with re-clarified admission criteria.

Outcome Measures:

- A realistic characterization of the High Acuity Care Unit at Dawson Creek and District Hospital, with implications re: utilization and staffing
- Support of the ICU at Fort St. John Hospital as a regional critical care resource.
- Enhanced patient care.
- Increased health system efficiency.

Site-Specific Recommendation # 20 (Dawson Creek and District Hospital)

The NE HSDA Surgery Council commission a review of endoscopy practices at the Dawson Creek and District Hospital.

Outcome Measures:

- Quality assurance of endoscopy services.
- An acceptable daily volume of endoscopies.
- Potential enhancement of endoscopy services in keeping with need in the NE and the skills of the Internist at Dawson Creek and District Hospital.

Site-Specific Recommendation # 21 (Dawson Creek and District Hospital)

The NE HSDA Administration to explore options related to redevelopment of its Sterile Surgical Processing Unit, ensuring it meets contemporary standards.

Outcome Measure:

- Optimized Sterile Surgical Processing Unit.

Site-Specific Recommendation # 22 (Dawson Creek and District Hospital)

That the NE HSDA Administration and Surgical Council explore options for the expansion of the Visiting Specialist program at Dawson Creek and District Hospital to provide additional daycare surgery capacity for patients who are currently travelling out of the HSDA to UHNBC or to Alberta for such services.

Outcome Measures:

- Increased efficiency of surgical service delivery in the NE HSDA.
- Ensuring sustainability of surgical health human resources at the Dawson Creek and District Hospital.
- Provision of more surgical care close-to-home.

Fort Nelson Hospital:

Fort Nelson Hospital houses 25 acute-care beds, and 8 long- term care beds. Care extends to full lab and x-ray facilities, community counselling services, basic obstetrics and minor surgeries.

Detailed information regarding surgical activity at the Fort Nelson Hospital is presented in *Table # 11.*

Surgical Activity Summary-Fort Nelson Hospital-Local Health Area 081			
LHA population: 6,431	**Communities Served:** Several First Nations including the Fort Nelson First Nation , Prophet River First Nation, Kwadacha Nation and the Daylu Dene Council call this area their home	**In-patient beds:** 25 **Occupancy:** 53.8 **ICU beds:** None **ED Visits:** 4,827 **Ambulatory Visits:** 3,469 **Deliveries:** 13 **Vaginal**: 6 **C-Sections:** 7 **C-Section rate:** 54%	**OR Services** **# of OR Theaters:** 1 **# days per week:** 2 .5 days per year **On-call:** 24/7 **Staffing:** all RN staff
Preadmission Clinic Process: Nurse screens patients and visiting specialists examine all patients	**Booking Office:** Nurse schedules	**Anaesthesia Coverage**: 1 GPA	**General Surgery/Section Coverage:** Not available
Resident Specialists: None		**Visiting Specialists:** an ENT Surgeon 2x per year	
OR Time Allocation: Limited by visiting specialist availability			

Source: Health Authority Profiles, NH Financial cube data and Stakeholder Focus Groups, NH Perinatal C-Section Data
Source: Healthy Mom and Indicator Report, Fort Nelson, Northern Health

Site-Specific Issues and Opportunities in Surgery Program at Fort Nelson Hospital:

- Fort Nelson is a remote community. It is over 400 km to Fort St. John. In winter, the roads are frequently dangerous and commonly closed. In winter, availability of air transportation is inconstant.
- In 2012/2013 there were 64 deliveries by mothers from Fort Nelson; there were 76 deliveries in 2011/2012 and 99 deliveries in 2010/2011;
- There is currently no consistent obstetrics service at Fort Nelson Hospital; mothers leave the region at 36 weeks; some pre-term deliveries or late-labour deliveries do take place at Fort Nelson Hospital; leaving the region for obstetrical care results in significant costs to patients except for reserve-natives; to have maternity services, Fort Nelson Hospital would need 2 GPAs and 2 GP Surgeons and the hospital now

has one GPA and no GP Surgeons; the hospital has been attempting to recruit, without success difficulty;

- In 2013/2014 there were 13 deliveries in Fort Nelson of which 7 were C-Sections.
- The 2 nurses with OR experience are retiring in the near future;
- Minor ENT surgery occurs 2 half-days per year; patients are mostly children requiring ear tubes or adenoid surgery; anaesthesia is given by the GPA;
- No other surgery is performed on-site; the surgical skills of physicians and RNs is being lost; the 2 RNs with training in surgery are scheduled to retire in the near future;
- Interviewees indicated they would like to have a visiting General Surgeon, visiting Orthopaedic Surgery, visiting Gynecology, and a visiting ENT Surgeon;
- The community provides equipment and supports staff, e.g. housing for an International Medical Graduate (IMG) who has not been licensed and has not worked yet;
- NH is aiming to develop a Primary Care Medical Home in Fort Nelson in the future;
- Interviewees suggested they would like to do GP Oncology - and may have an interested physician.

Site-Specific Recommendation # 23 (Fort Nelson Hospital)

The Administrations of the NE HSDA and NH to initiate a planning exercise to explore all options related to delivery of obstetrical services at the Fort Nelson Hospital, including the development of a Low-Risk Obstetrics Service there. Other surgical services at the Fort Nelson Hospital to be discontinued.

Outcome Measure:

- Clarification of the role of Fort Nelson Hospital will clarify medical HR needs and allow for productive planning related to enhanced community care.

Section 4:

Implementation

The Consultants have not provided an Implementation Plan in this Report. We understand that NH's Administration will determine which Report Recommendations to accept, and will then prioritize these and develop an Implementation Plan, inclusive of assigned accountabilities, clear timelines, and outcome measures. However, the Consultants offer the following general suggestions regarding implementation:

1. Some Recommendations are straightforward (e.g. developing a revised role description for the Visiting Specialist Clerk at BVDH in Smithers), and should be promptly assigned and acted upon.
2. Recommendations related to capital projects, if accepted, will clearly be managed through usual NH processes, each with their established timelines.
3. There are a number of 'touchstone Recommendations', which should be acted upon early. Once this is done, it will be easy to prioritize and establish timelines for the Recommendations that logically follow them. Examples are as follows:
   a) The Recommendation on governance and management is key. In the opinion of the Consultants an early decision should be made about a preferred governance and management structure, so that implementation can occur quickly. Once this is done, the Recommendations that are subordinate to it will be easy to identify, and accountabilities and a timeline can be assigned to each.
   b) The Recommendation on adoption of a hub-and-spoke model for surgical sites within each HSDA is another example of a touchstone Recommendation. Should NH accept this Recommendation and implement it, it will be easy to identify what service delivery changes should follow, and when.
   c) A third touchstone Recommendation pertains to quality. The NH Surgery Program requires a Quality Plan, and NSQIP should anchor it. Once this is done, prioritizing other quality-related Recommendations and assigning accountabilities and timelines to them will be straightforward.
   d) A final touchstone Recommendation pertains to enhancement of the relationship between NH and its Surgery Program physicians.

Section 5:

Cost Considerations

It is beyond the mandate of this review to determine the cost implications of the recommendations. Nonetheless, the following is presented as a high-level guide to some of the financial implications, should the Report's recommendations be accepted. Of note, there are anticipated costs and, also, anticipated cost savings.

The vast proportion of cost savings will occur as a consequence of improved quality and efficiency. These savings will be real and substantial, and data regarding savings associated with specific quality initiatives (e.g. NSQIP) and specific efficiency initiatives (e.g. standardization of process, employing established processes to take full advantage of data generated through programs such as *Surginet* or *aCATS*) are available from health care organizations in BC and Alberta and beyond. Additional cost savings will occur related to service re-distribution and as the NH physician culture continues to evolve positively, reduced staff and management turnover.

Costs associated with the Recommendations are difficult to estimate with certainty, but will primarily be associated with the following prioritized needs:

1. It is the strong opinion of the Consultants that that NH fully implement NSQIP, first at UHNBC in Prince George and then at the other hub hospitals. NSQIP should be the foundation of the quality agenda in surgery, an agenda that is aligned with NH's values and Goals, and one that is a focus of Government. This will require more than data collection. This will require dedicated quality and change management specialists, supported by a physician champion, who will work together and with others to achieve change in areas where NSQIP data indicate change must occur. In the opinion of the Consultants, this should be one of the highest priorities of the Organization.
2. Modest expenditures may be required to enhance Nurse Educator support in surgery in each HSDA and to standardize and enhance nursing professional development opportunities throughout NH. The costs should be more than countered by a reduced need to train new managers and staff and by lessened Agency costs.
3. The other area of significant cost related to the Recommendations pertains to the support that will be required by the NH Surgery Program Executive and Medical Program Lead and the NH Surgery Program Council, if they are to drive the substantial change in surgery required in NH. In the opinion of the Consultants, the support provided cannot be marginal; it should be substantial, and comprised of experts in change management, in project management, in quality, in data analysis

and in budget analysis; it should be provided for the duration of the change management process, which will take several years.

The Consultants have not commented upon costs associated with recommended capital projects, planning for which is already underway in NH in most instances.

Section 6:

Summary and Conclusions

The Consultants appreciate the opportunity of conducting this review, and the helpful collegiality of those interviewed. It is clear that most welcomed this review, and there is wide-spread hope that helpful recommendations emerge from it, recommendations that can be accepted and implemented.

The key recommendations fall neatly into five categories. A number relate to the creation of a Program Vision, and governance and management structures and supports that will allow dedicated, accountable teams of professionals to lead the substantial change effort that will be required in the Surgery Program for that Vision to be achieved.

A second set of recommendations relate to the creation of an integrated network of surgical sites in each HSDA and throughout NH: what the network architecture should be; what set of mutually-supportive roles should be played by each site within that architecture; what services should be moved and what services should replace them.

A third series of recommendations relate to optimizing the delivery of surgical services in NH: ensuring that there is availability of staff and physicians; enhancing the surgical patient journey; and, increasing the efficiency with which surgical services are provided.

A fourth and fifth set of Recommendations relate to the less tangible - but most important - aspect of surgical care: how the Program can become a true beacon of quality in NH and beyond by focusing not only on clinical excellence, patient safety and improved patient access, but by ensuring that the quality of worklife for the staff and physicians of the Surgery Program is high, and the organizational culture of the Program is a preferred one.

The Consultants do not under-estimate the magnitude of change that will be required should the recommendations in the Report be accepted, and we appreciate that managing such change will be difficult. However, we believe strongly that the development of strong Clinical Programs in NH is essential, if meaningful integration of acute care services is to be achieved. The journey toward development of an integrated system of clinical care in surgery will provide many lessons to other Clinical Programs, and assist them in their maturation.

Acknowledgements:

We would like to acknowledge the generous support from innumerable individuals that we experienced throughout the course of this review and we would particularly like to acknowledge the support provided by Laura Johnston, Zdenka Masarova and Shelley Hatcher.

Terms of Reference
Regional Surgical Plan Steering Committee

Goals:

- Determine future demand by site and region
- Present service delivery options to maximize quality and sustainability each site
- Define roles of site surgical services each site, e.g. primary, secondary, tertiary
- Identify resources needed for each site and/or region *(physicians, ORs, in-patient beds)*
- How to ensure wait times and pay for performance targets are achieved
- Determine how to maximize efficiency and effectiveness e.g. scheduling practices
- Determine how to strengthen NH's Surgery Program
- For each recommendation, identify timelines, accountabilities and outcome measures
- Provide recommendations for ongoing governance and management
- Overarching goal: identify a Vision for the Surgery Program in NH

Membership:

Dr. Ronald Chapman –Chair	Dr. Robert Bear	Sue Carpenter
Dr. Stewart Hamilton	Penny Anguish	Michael McMillan
Dr. James Hargreaves	Diane Healey	Dr. Geoff Appleton
Shelley Hatcher	Dr. Bret Batchelor	Dr. Francois Coetzer
Dr. Bill Simpson	Kim Ewen	Dr. Dick Raymond
Dr. Matt Fletcher	Dr. Suzanne Johnston	Kathryn Peters
Laura Johnston	Dr. Gavin Grapes	Dr. Willem Lombard
Dr. Nazar Murad	Dr. Philip Nel	Chris Simms
Dr. Becky Temple	Ken Winnig	Dr. Brian Dubois

Membership Roles:

As proposed in the Project Work Plan

To provide direction and support of the process.

To review the DRAFT project Work Plan and DRAFT Surgical Plan and provide feedback.

Timeline:

As proposed in the Project Work Plan.

Timelines are approximate and will depend on the availability of the Steering Committee members.

It is estimated that the DRAFT Surgical Plan will be presented to the Steering Committee for review in Aug/Sept 2014.

It is estimated that the finalized plan will be presented to the NH Executive for approval on Oct 7th, 2014.

Meetings:

Will be called by the Steering Committee Chair as required.

Regional Surgical Plan Steering Committee

Guiding Principles:

- An inclusive, consultative and data-driven approach
- A primary focus on the needs of the patient
- Care close-to-home, as appropriate
- A focus on quality and efficiency
- A focus on the future and best practices, not on history and usual practices
- A focus on enhancing the integration, co-ordination of surgical care throughout the North
- A focus on the progressive strengthening of NH's Surgery Program
- A focus on using outcome measures to track progress
- Ensuring existence of enabling governance and management structures