A CLINICAL SERVICES PLAN FOR YUKON TERRITORY

Final Report

Submitted to Deputy Minister

Department of Health and Social Services

Government of Yukon Territory

Please note that there are two companion documents that accompany this report:

1. Data Compendium
2. Clinical Service Matrices

March 31, 2014
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Acknowledgements

This study was undertaken with the support of the Minister and Senior Management of the Department of Health and Social Services of the Government of Yukon Territory under the leadership of the Deputy Minister, as Executive Sponsor of the study. Throughout, the Deputy Minister stressed the autonomy of the consultants and the importance of an independent and evidence-based assessment.

Many individuals contributed to the understanding of the issues, challenges, and history of the elements under consideration. Acquisition and assimilation of the qualitative and quantitative data would not have been possible without their commitment and participation. These individuals are knowledgeable resources from government, agencies, communities, corporations, councils, and professional associations.

The consultants are, individually, and collectively, indebted to the perseverance, patience, good humour, and skill sets brought to the study by Emily Wale, and to the Deputy Minister and Assistant Deputy Minister, Health Services, for enabling her secondment as Project Manager.

While the benefit from the input of these resources was substantial, accountability for the acquisition, collation, and interpretation of the qualitative and quantitative data, and the subsequent analytics, planning considerations, and clinical matrices, is that of the consultants, alone, and should not be attributed elsewhere.
Notes to Reader

This report is structured to optimize the flow of the study and reporting. The initial section tabulated the key findings from the study and the recommendations. The key findings for the relevant sections are also available at the conclusion of those chapters.

The chapters are organized in a progressive and intuitive fashion:

- Introduction
- National Perspectives
- Territorial Profiles
- Key Concepts
- Hospital Sector
- Department of Health and Social Services
- Alcohol and Drug Services
- Mental Health Services
- Palliative Care Services
- Collaborative and Team-Based Care
- Nursing Services
- First Nations Health Programs
- Chronic Disease Management
- Clinical Services Planning
- Appendices

The research component of the study yielded a wealth of information relevant to the Government of Yukon Territory and to the territorial residents and providers of health and social services. Not everything was recorded in this report, as the study maintained its focus on clinical services planning.

Companions to this study are:

- Project Charter
- Data Compendium
- Clinical Service Matrices
Dear Ms. Meade:

Attached is the final report of Health Intelligence Inc. and associates in the development of a clinical services plan for health and social services in Yukon Territory. This is a collaborative effort of Health Intelligence, HealthStats, and Social Sector Metrics, and reflects an adjusted population needs-based methodology. The report is constituted by narrative and analytic studies that converge in support of clinical service matrices to be used in health and social services planning for the territory. The key findings and recommendations are summarized in the first chapter of the report.

Our recommendations are far-reaching, with significant resource implications to your government. It has been our experience, however, that a carefully considered clinical services plan can be implemented in an incremental fashion that is sensitive to government policy and fiscal reality, while acknowledging that change can be difficult in a large, complex organization. That notwithstanding, there are immediate pressures that warrant attention; these have been stressed in the report.

Also, it has been observed that upfront costs in health care, if carefully selected, will not only improve the quality of outcomes, but also can decrease system costs; however, unlike upfront costs, measuring those direct and indirect savings can be difficult, as they are not consonant with typical accounting and costing models. Nonetheless, it is prudent to embark on clinical services planning with a parallel, contemporary program of measuring clinical outcomes for historic and subsequent longitudinal analyses.

Please note, as well, that there are two companion documents to this report: the first is the Data Compendium and the second, Clinical Service Matrices, the navigational tool to implement the plan and to underpin a robust and current database.

Thank you for your commitment to an evidence-based study that provides forecast planning and a navigational tool to be applied to that planning, for the effective, efficient, and timely delivery of health and social services to the benefit of the residents of Yukon Territory.

Yours truly,

David K. Peachey
Principal, Health Intelligence Inc.
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1.1 Key Findings

Following are non-prioritized key findings that inform clinical service planning in Yukon Territory, organized by corresponding themes and referenced to the corresponding chapter number.

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<tr>
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<tr>
<td>3</td>
<td><strong>National Perspectives</strong></td>
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<tr>
<td>3.1</td>
<td>All jurisdictions in Canada continue to evolve quality frameworks for the delivery of health and social services.</td>
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<td>3.2</td>
<td>Explicitly integrating quality to clinical services planning is both complex and essential to a patient-centred health delivery system. Applying workforce and material resources must be matched with a delivery system to permit appropriate and timely access to needed services.</td>
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<tr>
<td>3.3</td>
<td>The granular elements necessary to expand quality perspectives are clinical relevance, relevance, and best practices.</td>
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<td>3.4</td>
<td>Effective productivity in health and social services is an increase in outputs per unit of input where there is evidence of improved quality of care and improved health outcomes that contribute to achieving health system goals.</td>
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<td>3.5</td>
<td>Generalism has fallen behind, across specialties, while sub-specialization has continued to rise; in the current state, this will have negative implications to recruitment and retention of physicians to rural and remote areas.</td>
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<td>3.6</td>
<td>Central to primary care reform is collaborative, or team-based integrative care, with multidisciplinary teams of providers, working at “top-of-license” within a non-hierarchical model. These teams can include any mixture of nurses (including advanced care and nurse practitioners, registered nurses, and licensed practical nurses), pharmacists, physiotherapists, dietitians, physicians, mental health counselors, educators, and others.</td>
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<td>3.7</td>
<td>Early experience with pay-for-performance indicates that it will be more challenging to realign payment incentives beyond clinical process and administrative quality measures to include complex care and care coordination; the risks of pay-for-performance is the absence of incented desired behaviour and the incenting of unintended behaviour.</td>
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<tr>
<td>3.8</td>
<td>As population health supersedes individual encounters in measuring outputs and outcomes of health care delivery, it is likely that pay-for-performance programs will assume greater prominence.</td>
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<td>3.9</td>
<td>Most legacy systems in health care may be characterized as incoherent aggregations of practitioners and facilities providing care to those who seek it, not necessarily those who need it.</td>
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<td>As population health supersedes individual encounters in measuring outputs and outcomes of health care delivery, it is likely that pay-for-performance programs will assume greater prominence.</td>
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### Territorial Profiles

#### Population Profiles

| 4.1 | There is no regional structure for the delivery of health and social services in Yukon Territory. The population is primarily concentrated in distinct communities. Eighteen communities have been identified in population estimates for the territory. Fourteen of these have health centres and constitute the study cohort. |
| 4.2 | Yukon Territory continues to experience a growth in Gross Domestic Product and overall economic stability; overall employment rates are favourable, but these analyses are skewed by Whitehorse data that override significant unemployment outside Whitehorse. |
| 4.3 | Low income families and individuals are prevalent outside Whitehorse; low income correlates with decreased health status. |
| 4.4 | Population demographics provide one description of Yukon Territory, but with less than ideal confidence; however, it is evident that the highest rate of population growth by age cohorts over the next ten years will be those over 60 years of age. |
| 4.5 | Migration is the greatest driver of population increase in Yukon Territory. |
| 4.6 | Mortality rates in Yukon Territory are significantly greater than the national average; 34% of deaths were related to cancer; 28% of deaths related to cardiac events; and, 9% involved alcohol. |
| 4.7 | Between 25% and 30% of the population of Yukon Territory self-identify as First Nations. |
| 4.8 | Social and support services are the largest deficit in rural and remote Yukon Territory. |
| 4.9 | Rural and remote communities experience severe housing shortages and secondary health and social services consequences. |
| 4.10 | The services provided by the Child Development Centre are highly valued and seen as an area of expansion, having a clear return on the investment; the current program suffers from the need for more frequent visits and, especially, from the requirements of a referral, specific diagnosis, and attendance at school. |
| 4.11 | The absence of rural shelters for both men and women is considered a serious issue for rural and remote communities. |
| 4.12 | Transportation, especially to Whitehorse, is a serious rural and remote issue due to expense, inefficiency, and imbalance between First Nations and non-First Nations communities. |
### Health Centre Profiles

Health centres outside Whitehorse are profiled individually in the report; general themes were evident in the areas of health and social services across the territory, as follows:

- Two of the health centres are single nurse stations; concerns are significant with respect to safety and sustainability of a single nurse model.
- Physician visits (with the exceptions of Dawson City, Watson Lake, and Mayo) are relatively infrequent; Watson Lake is served by locum tenens physicians, leading to concerns regarding future resourcing.
- Despite the 2012 enactment of supportive legislation, there are no Nurse Practitioners (NP) practising outside Whitehorse; the NP in Whitehorse has been unable to acquire hospital privileges.
- Little collaboration is evident, in many health centre locations, between health and social services.
- Mental health services are in a significant deficit outside of Whitehorse.
- Alcohol and drug services (ADS) are in a significant deficit situation outside of Whitehorse; this include all aspects of ADS care, including the general absence of aftercare and a high rate of recidivism.
- Telehealth is underused despite many instances of possible value and cost savings.
- Chronic disease management protocols require additional support in the rural and remote Yukon Territory.
- Palliative care is inconsistent outside Whitehorse and, frequently, not available.
- Requirement for increased health promotion.
- Requirement for enhanced dental services outside of Whitehorse; the exception is First Nations communities who are provided with dental care in Whitehorse.

### Epidemiology Profiles

While some trends in the Epidemiology and Utilization Profiles present themselves in the data, it should be noted that, due to small volumes, some of the confidence intervals are quite large and changes or differences may not be statistically significant. The points of note are meant to highlight where there may be emerging concerns in terms of resource planning.

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<td>4.14</td>
<td>Hospitalized acute myocardial infarction (AMI) events have increased by 30% from 2007 to 2011, and more sharply among females (46%) than males (34%).</td>
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<td>4.15</td>
<td>Hospitalized stroke events have fallen over the same period by 43% (56% for females, but only 18% for males).</td>
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<td>4.16</td>
<td>Hospitalization for injury has declined 15% (22% for males and 3% for females).</td>
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<td>4.17</td>
<td>Hospitalizations for Ambulatory Care Sensitive Conditions (ACSC) (2006 Revision) have risen by 7% from 2007 to 2011 (12% among females, and declined slightly, by 2%, for males); this can indicate decreased access to primary care and the attendant use of clinical practice guidelines.</td>
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<td>4.18</td>
<td>Caesarean Sections have declined marginally (7%) over that period; rates among urban residents is marginally higher than rural residents over the period 2007/08 to 2011/12 (23.7 versus 22.6)</td>
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<td>4.19</td>
<td>The rate of visits to General and Family Practitioners fell by 18%, but visits to specialists rose by 23%.</td>
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| 4.20  | • Coronary Artery Bypass Grafts (CABGs) rose by 32% from 2007 to 2011 (following a dip in the previous two years); the increase for males was 51%  
• Hip replacements declined by 5%, but that was attributable to a 24% drop among males, whereas there was a 9% increase among females  
• Knee replacements rose 31% (attributable to an increase over 100% for males)  
• Percutaneous Coronary Interventions (PCIs) rose 30% (27% for females and 35% for males)  
• Cardiac re-vascularization procedures rose by 30% (20% among females and 40% among males)  
• Hysterectomies rose by 7%                                                                                                                                                                                                                                                     |
| 4.21  | The number of prevalent ESRD patients has doubled over an eight year period from 2004 to 2011 (10 to 21 patients). The combined number of incident ESRD patients in B.C. and the Yukon has also risen, from a low of 623 in 2003 to 773 in 2011. The figures for Yukon alone were not available.                                                                                      |
| 4.22  | Injury rates are a sentinel indicator of risk in a society. Hospitalizations for unintentional injuries have risen in recent years to nearly 400 in 2012/13 from about 250 in 2001/02. Correspondingly, the rates per 100,000 have risen from 835 to 1,092 over the same period. On the other hand, rates of hospitalization for intentional injury, while generally seeing an increase through this period (from a low of 135 per 100,000 to a high of 258), saw the lowest level in 2012/13 (120). |
| 4.23  | Hospitalization indices for mental illness (787) surpass the corresponding data significantly (489) while the mental illness patient days (541) are significantly less than the corresponding Canadian data (707); this indicates greater rates and shorter stays that could reveal early discharges or the absence of community support.                        |

**Utilization Profiles**

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<tr>
<td>4.21</td>
<td>On health care availability in the territory, 61% of rural residents gave a rating of “good or excellent,” compared to 71% among urban residents. The gap widens when asked to rate availability of health care in the community - to 55% as compared to 72%.</td>
</tr>
<tr>
<td>4.22</td>
<td>Hospitalizations for injury in Yukon Territory substantially exceed those in Canada as a whole: 1,159 per 100,000 population versus 516, age-standardized.</td>
</tr>
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### Key Findings

| 4.23 | Avoidable mortality refers to untimely deaths that should not occur in the presence of timely and effective health care or other public health practices, programs, and policy interventions. It serves to focus attention on the portion of population health attainment that can potentially be influenced by the health system. The mortality rate per 100,000 for Yukon Territory was 254 versus 183 for Canada. PYLL per 100,000 for Yukon Territory was 5,043 versus 3,353 for Canada. |
| 4.24 | Other indicators (as age-standardized rates per 100,000) are:  
- Hospitalized hip fracture events (65 years and older): 848 (Canada 435)  
- Ambulatory Care Sensitive Conditions: 507 (Canada 290) - often referred to as avoidable admissions  
- 30-Day Readmission:  
  - Medical: 16.0 (Canada 13.4)  
  - Surgical: 9.6 (Canada 6.6)  
  - Obstetrical: 2.8 (Canada 2.0)  
- Self-injury hospitalization: 175 (Canada 67)  
- Mental illness hospitalization: 787 (Canada 489)  
- Mental illness patient days: 541 (Canada 707) |
| 4.25 | At 74%, the CTAS 4 and 5 scores at Whitehorse General Hospital are significantly high; this indicates that patients are coming to the Emergency Department with very minor conditions, potentially not able to access primary care. |
| 4.26 | Per capita consumption of alcohol in Yukon Territory is the highest in Canada by a significant margin. |
| 4.27 | Examining medical travel data for 2008 through 2013, paid amounts rose to over $6.5 million from $1.5 million in 2008, a 33.3% increase. Claims rose from just under 5,000 to nearly 11,000 over the same period. Medical Evacuation (Medevac Air) accounted for the largest amount of expenditures, currently over $4 million. Subsidies account for $1.5 million and mileage, another $700,000. Claims amounts for insured residents constituted $5.2 million in 2013. Nearly $1.1 million was for NIHB claims (recovered funding). One-way trips accounted for $4.4 million, and $2.3, million for round trips. |
| 4.28 | Medical travel is complex, expensive, and incompletely understood; a full analytic process is required, apart from this study, to develop cogent arguments for reform. This study supports such a separate initiative to be undertaken by a resource, expert in medical travel and emergency care. |
| 4.29 | Sixty-six (66) resident and 185 visiting physicians provide care to the residents of Yukon Territory over the course of the previous fiscal year. For GPs, CIHI, using 2012/2013 data and the Health Canada FTE methodology, determined that the combined resident and visiting GP complement was 70.4 FTE. This calculation is very high for a population of approximately 35,000 people and is inconsistent by other datasets that indicate many patients do not have access to primary care physicians. |
| 4.30 | Visiting specialist data and CIHI FTE data converge to support the concept of increasing the complement of General Surgeons and Obstetricians, and attempting to recruit to repatriate services provided by Orthopedic Surgery, Ophthalmology, and Paediatrics. |
### Key Findings

**4.31** Utilization rates based on age-gender cohorts by community were used to project future amounts for physician services. Rates for 2012/13 only and for an average across multiple years (2007/08 through 2012/13) have been prepared. Population estimates from each of the three projection scenarios were applied for five and ten year horizons. Although figures are presented by community, only the overall figures for Yukon Territory (or for Whitehorse) are considered to be stable.

For projected amounts based on single year (2012/13), utilization rates only are higher than when multi-year averages are used. The five year trend scenario, based on single year rates, returns the highest increases over the ten years (31%). Estimated increases for the 10-year and 2-year scenarios are 25% and 21%, respectively. The corresponding increases using average multi-year rates are 27%, 33% and 24%, for the 10-year, 5-year and 2-year scenarios, respectively. They appear to grow more rapidly, but start from a lower base in 2014 than the single year estimates. In general, the estimates are closely aligned.

**4.32** The following observations are provided for DHSS Health Services providers:
- Across the territory, 195 practitioners (182 FTEs) were identified as involved in the provisions of health services; 65 are full time. There are 94 on-call FTEs, and 36 practitioners are part-time (23 FTEs)
- Most of the resources (148 individuals, 137 FTEs) reside in Whitehorse
- 124 individuals (116 FTEs) are involved in Community Nursing; 67 (62 FTEs) are involved in Community Health
- 54 individuals (52 FTEs) are assigned to General Programs; 29 (26 FTEs) work from the Whitehorse Health Centre
- 24 individuals (23 FTEs) work in mental health positions
- 14 individuals (12 FTEs) are involved in Communicable Disease Control

**4.33** The following observations are provided for DHSS Continuing Care providers:
- 387 individuals (360 FTEs) are involved in Continuing Care, mostly in Whitehorse (382 individuals, 356 FTEs)
- The majority of staff (276 individuals, 266 FTEs) are involved in Extended Care Services. 88 (72 FTEs) are in the Care and Community Branch
- Dementias and psychoses will be workload drivers, as will increased survivorship from previously data illness
- 183 individuals (178 FTEs) are situated at Copper Ridge Place. 54 individuals (50 FTEs) are at Macaulay Lodge and another 39 (38 FTEs) are at the Thomson Centre
- 88 individuals (72 FTEs) are assigned to Home Care Services
### Key Findings

| 4.34 | The following observations are provided for DHSS Social Services providers:  
|      | - 373 individuals (365 FTEs) provide Social Services; 332 (326 FTEs) are located in Whitehorse.  
|      | - 229 individuals (224 FTEs) work in the Family and Children’s Branch; 119 (116 FTEs) work in Adult Services  
|      | - 95 individuals (94 FTEs) work in Residential Youth Treatment Services  
|      | - 65 individuals (63 FTEs) work in Alcohol and Drug Services areas |

| 4.35 | Pharmacy services appear likely to expand after the legislative process that will examine the Pharmacy Act; some of those services are currently being provided by primary care physicians. |

### Key Concepts

| 5.1 | Conceptually, core services are described as an evidence-based understanding of population health service needs that carry expectations of timely and efficient access. At a level of detail, however, the application of core services is a complex challenge. Canadian experience with defining and implementing core services is best demonstrated in British Columbia, Manitoba, Ontario, and Nova Scotia. It is important to stress that a particular jurisdiction must identify its own core health and social services; core services from one jurisdiction are not automatically transferrable. |

| 5.2 | Rurality can be measured objectively; using a customized adaptation of an existing measure of rurality indices, the ordinal rankings of rurality in Yukon Territory, using the communities with health centres, are, as follows:  
|      | 1. Old Crow  
|      | 2. Beaver Creek  
|      | 3. Ross River  
|      | 4. Dawson City  
|      | 5. Faro  
|      | 6. Destruction Bay  
|      | 7. Pelly Crossing  
|      | 8. Watson Lake  
|      | 9. Mayo  
|      | 10. Teslin  
|      | 11. Carmacks  
|      | 12. Haines Junction  
|      | 13. Carcross  
|      | 14. Whitehorse |

| 5.3 | Role optimization encourages each professional to provide services to the maximum skill level attainable, as part of an integrated team, and, always, in a patient-centred model. In essence, the goal is to maximize individual scopes of service to provide quality and accessible care to those in need and in a timely fashion. This is a fundamental element in advancing collaborative care and recruitment and retention initiatives. |

<p>| 5.4 | Patient-centred care (PCC) receives greater reference than implementation in Canadian health care. That notwithstanding, a tenet of clinical service planning is the central position of the patient and, generally, this requires a shift in extant thinking and models. Fundamental is the understanding that PCC is a care model and not a simple concept. |</p>
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| 5.5 | High-performing primary care can be characterized, as follows:  
• Data-driven improvement, to achieve efficiencies  
• Empanelment and panel-size management, to sustain continuity of care and access  
• Team-based care, wherein all members are responsible for quality  
• Population management, whereby the specific needs of subgroups are addressed  
• Continuity of care provisions  
• Prompt access to care, including a spectrum of providers |
| 5.6 | The electronic medical record (EMR) has become an integral part of delivering care and sharing medical information across sites, improving quality, and avoiding duplication; Yukon Territory requires a single territorial vendor that can be used in health centres, clinics, and hospitals, and be a source of analytic data that evaluates health outcomes. |
| 5.7 | Telehealth availability in Yukon is contemporary, yet underused. The quality of the audio and video feeds is high; however, the interviewees were unambiguous about the underutilization. Often this reflects a technology that is not front-of-mind and, possibly, underestimates the impact on access issues (and system savings with respect to patient travel); as well, it is not an insured service for physicians, with the exception of psychiatric services. |

### Hospital Sector

| 6.1 | The WGH currently employs over 350 staff and has 49 in-patient beds, 10 bassinets for newborns, and 10 surgical day care beds, an emergency department, and OR suites. The hospital is equipped with a full range of medical imaging services—CT scanning, digital mammography and ultrasound. WGH also offers laboratory services, a therapies department, as well as a broad range of medical and surgical specialists. |
| 6.2 | Staffing complements for the YHC are identified by site and by level. WGH has 293 FTEs. The FNHP has 10 FTEs. The two smaller hospitals have 17 FTEs (Watson Lake) and 15 FTEs (Dawson City). |
| 6.3 | Utilization data and analyses for Watson Lake and Dawson City demonstrate very low occupancy rates. |
| 6.4 | Physical constraint at WGH limits the consideration of a broader range of visiting and resident physician services. |
| 6.5 | WLCH data have not changed in any substantial way since the new hospital has been opened |
| 6.6 | Available diagnostic testing at WLCH is suboptimal during unsocial hours, with possible implications to patient safety and medical care |

### Department of Health and Social Services

...
A new five-year strategic plan is being developed for DHSS, serving as the foundation for detailed departmental and divisional annual plans. This important work is scheduled for completion at the same time as the CSP is tabled. Review of an earlier draft of the strategic plan, its values, its vision, and goals, objectives, and strategies, demonstrated its consonance with the CSP. There is no conflict identified with the directions within the CSP; the documents are seen as complementary.

There is a significant backlog of clients who require any number of the hearing services; the current wait list is 600. Greatest priority is given to children and infants and, then, those with high risk situations. Less intense self-referrals will wait one year to be assessed.

Further, workload drivers will expand required services, including the aging population, increased industrial screening, earlier identification of hearing loss in infants, and a growth in demand for impressions for safe hearing protection.

Input was received from all the Health Centre teams, identifying the challenges that confront community nursing. These are summarized, as follows:

- There is significant time expended by community nurses in the performance of non-nursing functions; depending on the size of the community and the number of vacancies, this time for PHCNs is estimated to be up to 20% and for PHCNICs, up to 50%; the communities providing solely public health (Whitehorse Health Centre, Dawson City Health Centre, and Watson Lake Health Centre) report decreased amounts of time spent on these tasks
- The absence of Electronic Health Records hinders program and workload planning and impedes otherwise achievable efficiencies and seamless care
- Absence of collaborative care
- Delay in integrating Nurse Practitioners has a negative impact on care, especially with limited physician visits to the communities; this is particularly difficult on NPs who are current employees but unable to work to full scope
- Housing for relief staff is inadequate
- No internet availability in relief housing is difficult for relief staff, many of whom are enrolled, concurrently, in advanced education programs
- Benefit packages are considered by nurses to be non-competitive

<table>
<thead>
<tr>
<th>7.1</th>
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</thead>
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<tr>
<td>7.4 The input from Health Centres also provided insight into care gaps of concern:</td>
<td></td>
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<tr>
<td>• Mental health and addiction services are not well resourced in communities</td>
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<tr>
<td>• Patients are being returned to the community with significant acuity and complexity (blood transfusion, cancer therapy, palliation, pain management)</td>
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<tr>
<td>• Early discharge programs return patients to communities in the absence of required resources, such as intravenous medications and complex dressings during unsocial hours</td>
<td></td>
</tr>
<tr>
<td>• Expectations often assigned to Health Centres are not equalled with required resources</td>
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<tr>
<td>• Aging infrastructure has left facilities cramped and in disrepair</td>
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</tr>
<tr>
<td>• Home care and palliative care services are limited in communities, leading to additional demands on PHCNs who are already providing primary care and emergency care 24 hours daily</td>
<td></td>
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<tr>
<td>• Limited physiotherapy and occupational therapy leads to additional workload on PHCNs</td>
<td></td>
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<tr>
<td>• Limited physician and dental services</td>
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</tbody>
</table>

| 7.5 There are several logistical challenges that warrant acknowledgement. These include improved eligibility thresholds (including a universal Yukon benefit with a deductible), technology, such as online, real-time billing, online adjudication, electronic formulary through a third party carrier, and purchasing logistics. |

| 7.6 One clear disadvantage, faced by the Child Development Centre today (and by extension, the residents of Yukon Territory), is that intake to the services of CDC is by referral (with a diagnosis) plus family consent. The assessment and services do not occur in the absence of either and, as such, approximately 50% of territorial children from age 0-4 years are seen. This is an example of care being provided to those who “seek” it; it will not necessarily be provided to all those who “need” it. Worthy of consideration is the approach of universal screening with the support and guidance of the Director, Family and Children Services. |

| 7.7 Disability services are provided in an inconsistent and very limited basis in rural Yukon Territory |

<table>
<thead>
<tr>
<th>Alcohol and Drug Services</th>
</tr>
</thead>
<tbody>
<tr>
<td>8.1 No provider or service interview conducted during the study was silent on the enormity of the problem with, and impact of, the abuse of alcohol in Yukon Territory.</td>
</tr>
<tr>
<td>8.2 Current ADS services are Whitehorse-centric; rural and remote services are in a deficit for each of prevention, detoxification, pre-treatment, treatment, and aftercare, especially the latter.</td>
</tr>
<tr>
<td>8.3 It is understood that a new ADS facility is scheduled to open in 2015 and is intended to expand the number of residents who can be provided with care; however, the absence of community-based services will leave a large void in the care available and a continuing high risk of recidivism.</td>
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<tr>
<td>8.4</td>
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<td>8.5</td>
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<td>8.6</td>
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<td>8.7</td>
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</tbody>
</table>

### Mental Health Services

<table>
<thead>
<tr>
<th>n</th>
<th>No provider or service interview conducted during the study was silent on the enormity of the problem with, and impact of, the management and challenges of mental health services in Yukon Territory.</th>
</tr>
</thead>
<tbody>
<tr>
<td>9.1</td>
<td>The full spectrum of mental health issues is prevalent and generates a huge burden on available resources and family members.</td>
</tr>
<tr>
<td>9.2</td>
<td>Care for mental health issues (and addictions) requires, at a minimum, a mental health infrastructure, professional services, and a patient, not only seeking care, but also, initiating the care when the time is right for the individual. The foundation of treatment is team-based care with multidisciplinary providers working together in optimized roles.</td>
</tr>
<tr>
<td>9.3</td>
<td>Mental health services are provided by MHS at DHSS, Many Rivers, and Blood Ties.</td>
</tr>
<tr>
<td>9.4</td>
<td>Many Rivers has 11 counselors and four territorial offices. Growth predictions are 10%, annually, over the next three years, possibly leading to a required staff increase of 25%. The greatest challenge, currently, is the provision of community services outside of Whitehorse.</td>
</tr>
<tr>
<td>9.5</td>
<td>Blood Ties is the Yukon Territory information and support centre for HIV/AIDS and Hepatitis C, providing counseling and outreach activities, working closely with other groups. As well, it runs a needle exchange program, and distributes Crack kits, and condoms.</td>
</tr>
</tbody>
</table>

### Palliative Care Services

<table>
<thead>
<tr>
<th>n</th>
<th>In Yukon Territory, particularly in rural settings, concerns and frustrations have been expressed regarding the absence of an infrastructure care, sometimes leading to the transfer of patients away from their home or home community.</th>
</tr>
</thead>
<tbody>
<tr>
<td>10.1</td>
<td>Options for a palliative care framework are anticipated in the spring of 2014, built on a foundation of principles and recognizing, “the many services and organizations that are involved in the delivery of quality hospice, palliative, and end-of-life care.”</td>
</tr>
</tbody>
</table>
### Key Findings

<table>
<thead>
<tr>
<th>Section</th>
<th>Findings</th>
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</thead>
<tbody>
<tr>
<td>10.3</td>
<td>During the conduct of the study, concern was expressed about the risk of the end of funding for the palliative care team. This is considered an essential investment on the part of DHSS. Continuing support for the framework initiative and its implementation are strongly encouraged.</td>
</tr>
<tr>
<td>10.4</td>
<td>The expanded palliative care team is a logical fit with the recommendations in this study.</td>
</tr>
</tbody>
</table>

### Collaborative and Team-Based Care

<table>
<thead>
<tr>
<th>Subsection</th>
<th>Findings</th>
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<tbody>
<tr>
<td>11.1</td>
<td>Collaborative care is central to workforce and clinical service planning, with a substantial and sustained impact on primary care and outcomes. Collaborative care teams can be described as providers that bring separate and shared knowledge together to support a comprehensive range of high quality, effective health care service. Collaborative care is integral to workforce and service planning, especially in a number of primary care and social services settings.</td>
</tr>
<tr>
<td>11.2</td>
<td>A comprehension of true collaborative care and support for its wide territorial implementation was evident throughout the study, especially from non-physicians, but also by some physicians.</td>
</tr>
<tr>
<td>11.3</td>
<td>Collaborative care is the centerpiece of the proposed model of care and delivery that would address many of the challenges faced in Yukon Territory.</td>
</tr>
<tr>
<td>11.4</td>
<td>As collaborative care evolves, especially within a vast geography and dispersed population, the resulting model of a Regional Collaborative Care Centre (RCCC) will assume the culture and priorities of the Yukon Territory. That notwithstanding, each centre will have common principles and objectives, and each will evolve as a care model, at a pace determined by DHSS and community commitment and available resources.</td>
</tr>
<tr>
<td>11.5</td>
<td>The development of highly function RCCCs is a priority; their reconfiguration in Whitehorse (Capital Collaborative Care Centres) should follow, such that the base unit of care across Yukon Territory is a collaborative care centre.</td>
</tr>
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### Nursing Services

<table>
<thead>
<tr>
<th>Subsection</th>
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</thead>
<tbody>
<tr>
<td>12.1</td>
<td>Nursing services in Yukon Territory are constituted by:</td>
</tr>
<tr>
<td></td>
<td>• Licensed Practical Nurse</td>
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<tr>
<td></td>
<td>• Registered Nurse</td>
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<tr>
<td></td>
<td>• Communicable Disease Control Nurse (can Rx and test for STIs)</td>
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<tr>
<td></td>
<td>• Mental Health Care Nurse</td>
</tr>
<tr>
<td></td>
<td>• Primary Health Care Nurse (expanded scope)</td>
</tr>
<tr>
<td></td>
<td>• Community Health Nurse (not expanded scope)</td>
</tr>
<tr>
<td></td>
<td>• Nurse Practitioner</td>
</tr>
<tr>
<td>12.2</td>
<td>The regulated nursing workforce in Yukon Territory grew by 17.7% between 2008 and 2012, reaching a total of 466 regulated nurses.</td>
</tr>
<tr>
<td>12.3</td>
<td>It is not unusual for nurses to be providing non-nursing functions, due to limited resources and staffing.</td>
</tr>
</tbody>
</table>
### Key Findings

| 12.4 | • The average age of regulated nurses in Yukon Territory in 2012 was 44.5 years  
|      | • In 2012, 13.5% of the regulated nursing workforce was under age 30 years, an increase of 5 percentage points from 2008; as well, the proportion of regulated nurses age 60 years or older increased from 7.7% in 2008 to 10.9% in 2012  
|      | • In 2012, 49.6% of regulated nurses in Yukon Territory were employed full-time (compared to the national figure of 56.9%)  
|      | • In 2012, 22.0% of regulated nurses worked in remote parts of the territory (compared with 23.2% of the population was living in remote parts of the territory)  
|      | • Of the 67 graduates of the Yukon LPN program employed in Canada in 2012, 71.6% were employed in the territory (and, 17.9% in British Columbia, 4.5% in Saskatchewan, and 3.0% in Ontario)

| 12.5 | Nurse Practitioners deliver high quality, cost-effective care, and are ideal members of a collaborative care team and as discipline specialists and managers of CDM programs. There is significant concern at the delays in advancing the NP model despite enactment of the requisite legislation.

| 12.6 | Some physicians have resisted the granting of admitting and discharge privileges to NPs.

| 12.7 | Still unexplored in Yukon Territory and Canada is the potential contribution of Nurse Practitioner Anesthetists.

| 12.8 | Stabilization of the nursing workforce and role optimization is the fundamental building block to implementation of collaborative care across Yukon Territory.

### First Nations Health Services

| 13.1 | The Whitehorse survey results indicate that about 17% consider themselves as having an First Nations identity. The town of Watson Lake reported 26% and the town of Dawson City, 33%. There is a weakness in how First Nations status is tracked and measured.

| 13.2 | First Nations communities share health and social services issues with the rest of Yukon Territory; as well, there are particularly acute challenges with alcohol and drug abuse, the need for counseling services, diabetes mellitus, and the need for services to be delivered at home, when requested.

| 13.3 | Evolution of care for First Nations follows two paths: one is access to required care provided by Western medicine; the other, traditional healing. In both instances, the presence of timely and effective care in the home and the community is of primary importance.

| 13.4 | There remain many issues that require resolution and need to be vetted through the CYFN, especially the Health and Social Commission. Many of these issues are evident in the needs assessment; however this is not a static process and must be sensitive to change, whether in need, access, or provider.

| 13.5 | The proposed model for delivery of health and social services will be supportive of the needs of First Nations communities.
### 13.6 Key Findings

Although not statistically significant in many instances, First Nations people are consistently reported at less desirable levels than the total population (higher body mass index, higher consumption of tobacco and alcohol, lower consumption of fruits and vegetables, lower levels of physical activity, lower life satisfaction and sense of well being, higher levels of chronic conditions). The one exception is a sense of belonging to local community, where First Nations achieved a higher rate than the total population.

### 14 Chronic Disease Management

14.1 Chronic Disease Management (CDM) has been provided in Yukon Territory by physicians to various degrees, a clinical exercise specialist, a health coach, five FTE nurses in Whitehorse, and a community liaison nurse.

14.2 CDM is a valuable clinical service and tool with a legacy of cost-effective, quality care; with responsibility across provider groups.

14.3 Current funding for CDM and the program, itself, are in jeopardy. Clinical service planning logically would look for the model to be expanded and to have strong rural and urban foci that include ongoing measurement of clinical outcomes.

### 15 Emergency Medical Services

15.1 Emergency Medical Services (EMS) in Yukon Territory is constituted by Ground Ambulance in Whitehorse, Medevac Services, based in Whitehorse, community volunteer staff, and medical communications staff.

15.2 2014 service estimates show continuing growth in all dimensions of EMS care and delivery.

15.3 There is a clear recruiting problem with a deficit of three air crew (ground crew is reasonable) and challenges that reflect compensation scales, limited housing, and constrained budget.

15.4 As EMS falls under the mandate of the Department of Community Services, the issues are noted, but it would be out of the scope of this study to include recommendations.

### 1.2 Recommendations

Clinical services planning entails development and assessments of the following:

- An accurate and validated current state assessment
- Analyses of implications of the current state:
  - Deficits
  - Issues
  - Sector-specific challenges
- Estimates of the future state variables and drivers of workload
Summary of Key Findings and Recommendations

- System design that will provide an infrastructure for change
- Health human resource modeling to populate the infrastructure
  - Based on \( t_n \), where \( n \) is a moving target in the planning process\(^1\)
- Clinical services matrices as the navigational, planning tool for the territory and for planning regions—acceptance of the tool and the planning cycles is dependent on territorial resources, priorities and policies
- Some of the recommended changes are of a relatively minor nature; others carry a significant fiscal impact\(^2\), yet warrant serious consideration on the bases of quality, access, and recruitment
- Commitment to the maintenance of real-time data that refresh the project database
- Commitment to measurement of clinical outcomes and the advancement of best practices, based on evidence.

These can be challenging undertakings for government and providers. Change is easy to resist; however, the evidence at hand provides the imperative for change. Certainly, maintaining the status quo would do little more than extend the cycle of provider-centred care and impede the successful implementation of patient-centred care.

Change always brings surprises; however, it is not difficult to identify those where change will have the greatest impact. **Government** will need to prioritize its spending against other pressing demands, but always with attention to needs. For health and social services in Yukon Territory, the needs are high.

**Providers** will need to come to terms with shifts in the care model:

- Government is being asked to redefine its spending priorities, over time, and to contemplate revised structure and governance for health and social services; governance will need to be centralized and service delivery will need to be regionalized, using targeted core services in a hub-and-spoke model
- The hospital corporation is being asked to determine the most appropriate services to be provided at the two community hospitals, and how those services can achieve a seamless interface with collaborative care models

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\(^1\) For planning purposes, the further out a planning cycle, the lesser the impact of variables; many planning cycles extend to ten years, but require a point of initiation, in this case, three years; once the three-year plan is set and the underpinning data refreshed, the cycle can extend to year five and year ten, and then beyond

\(^2\) The challenge of fiscal impact is to correlate costs with benefits, when costs are easily estimated and benefits are not, because of the direct and indirect measurements
• The nursing profession is being asked to transition to a model of care that is supportive of top-of-license nursing services on a continuing basis
• The medical profession is being asked to transition to pan-territorial collaborative care and to leave the “medical model” behind
• All other providers of care are being asked to adjust delivery models so that collaborative and integrated care is central

Following are non-prioritized recommendations specific to clinical service planning in Yukon Territory.

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<tr>
<th>n</th>
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<td>1.1</td>
<td>That six Regional Collaborative Care Centres be established as a priority in Yukon Territory, as described in chapter 16 of this report</td>
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<tr>
<td>1.2</td>
<td>That five Capital Collaborative Care Centres be established in Whitehorse, as described in chapter 16 of this report</td>
</tr>
<tr>
<td>1.3</td>
<td>That the Regional Collaborative Care Centres be staffed in keeping with the health human resource modeling, as described in chapter 16 of this report</td>
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<td>1.4</td>
<td>That the Capital Collaborative Care Centres be staffed in keeping with the health human resource modeling, as described in chapter 16 of this report</td>
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<td>1.5</td>
<td>That the twelve principles used for the development of the clinical services plan be adopted as the principles that underpin the collaborative care centres</td>
</tr>
<tr>
<td>1.6</td>
<td>That a generalist Nurse Practitioner be located at each RCCC, with the exception of 0.33 FTE at each of Beaver Creek, Burwash Landing, and Destruction Bay; as well, discipline specific and generalist NP positions be established in Whitehorse</td>
</tr>
<tr>
<td>1.7</td>
<td>That recruitment and retention of community nurses for rural Yukon Territory health centres continue to be a priority until vacancies have been eliminated to the level where individual responsibilities can be fulfilled within the existing job descriptions</td>
</tr>
<tr>
<td>1.8</td>
<td>That the types and numbers of nursing staff be reassessed on an annual basis to ensure that role optimization is being achieved</td>
</tr>
<tr>
<td><strong>2</strong> Regional Collaborative Care Centres</td>
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<tr>
<td>2.1</td>
<td>That each RCCC developed local strategies for dealing with the child development diagnoses and management</td>
</tr>
<tr>
<td>2.2</td>
<td>That assessment criteria for Child Development Centre be relaxed so that referral and diagnosis, and attendance at school are no longer required</td>
</tr>
<tr>
<td>2.3</td>
<td>That community visits by Physiotherapists be expanded through RCCCs so that each centre receives visits every four to six weeks, and that this be resourced accordingly</td>
</tr>
<tr>
<td>2.4</td>
<td>That each RCCC developed local strategies for dealing with the prevention and management of Fetal Alcohol Spectrum Disorder</td>
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<td>2.5</td>
<td>That community visits by Occupational Therapists be expanded through RCCCs so that each centre receives visits every four to six weeks, and that this be resourced accordingly</td>
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<tr>
<td>2.6</td>
<td>That a Child Abuse Treatment Services worker be based in each RCCC and visit each centre at least biweekly and on a required basis</td>
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<tr>
<td>3</td>
<td><strong>Clinical Service Matrices</strong></td>
</tr>
<tr>
<td>3.1</td>
<td>That Clinical Service Matrices be the implementation and navigational tool to proceed, initially, with the first three years of clinical services planning, and, thereafter, once the first three years of planning is complete</td>
</tr>
<tr>
<td>4</td>
<td><strong>Social Determinants of Health</strong></td>
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<tr>
<td>4.1</td>
<td>That rural shelters be established for both men and women</td>
</tr>
<tr>
<td>4.2</td>
<td>That transportation, as both a social determinant of health and an essential element of health and social services delivery, be improved for communities with health centres</td>
</tr>
<tr>
<td>4.3</td>
<td>That housing, as both a social determinant of health and an essential element of health and social services delivery, be improved for communities with health centres</td>
</tr>
<tr>
<td>5</td>
<td><strong>Territorial Programs</strong></td>
</tr>
<tr>
<td>5.1</td>
<td>That the chronic disease management program in Yukon Territory be funded and managed through a Nurse Practitioner model, with a territorial Manager and regional administrators; and, that the responsibility for adopting and using clinical practice guidelines be affirmed as a responsibility of all providers</td>
</tr>
<tr>
<td>5.2</td>
<td>That a central locum tenens model be considered by DHSS if physician staffing in rural and remote Yukon Territory becomes more difficult</td>
</tr>
<tr>
<td>5.3</td>
<td>That integrated palliative and end of life care be provided territorially in keeping with the revised territorial model of DHSS</td>
</tr>
<tr>
<td>5.4</td>
<td>That telehealth be used on a regular basis to facilitate quality care at health centres and minimize medical travel</td>
</tr>
<tr>
<td>5.5</td>
<td>That a territorial Electronic Health Record be established for interprofessional information sharing and data acquisition for population health studies</td>
</tr>
<tr>
<td>5.6</td>
<td>That the dietary and nutritional services available by telehealth through the Whitehorse General Hospital be used on a regular basis</td>
</tr>
<tr>
<td>5.7</td>
<td>That an efficacious territorial strategy for cancer screening and management be developed and implemented</td>
</tr>
<tr>
<td>5.8</td>
<td>That an efficacious territorial strategy for the prevention and management of cardiovascular disease be developed and implemented</td>
</tr>
<tr>
<td>5.9</td>
<td>That the Department of Health and Social Services meet quarterly with the Health and Social Commission of the Council of Yukon First Nations to review First Nations Health Programs for accessibility and effectiveness</td>
</tr>
<tr>
<td></td>
<td>Recommendations</td>
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<tr>
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<tr>
<td>5.10</td>
<td>That the long-term strategic priorities articulated for Adult Services in section 7.3.2 of this report be supported as a priority</td>
</tr>
<tr>
<td>5.11</td>
<td>That disability services be examined throughout Yukon territory to redress the inconsistent and limited services delivered today, especially in rural Yukon Territory</td>
</tr>
<tr>
<td><strong>6</strong></td>
<td><strong>Service Delivery</strong></td>
</tr>
<tr>
<td>6.1</td>
<td>That a Nurse Practitioner-led clinic be established at the Emergency Department of Whitehorse General Hospital, or elsewhere in Whitehorse, to attend to Canadian Triage and Acuity Scale 4 and 5 patients</td>
</tr>
<tr>
<td>6.2</td>
<td>That the audiology staff be increased to address the current wait list and anticipated increased volume of services</td>
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<td>6.3</td>
<td>That the Department of Health and Social Services develop and implement a long-term strategy for an increased patient cohort diagnosed with one of the dementias</td>
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<td>6.4</td>
<td>That the medical travel program be evaluated by an expert resource for management, necessity measures, cost, and reform, where indicated</td>
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<td>6.5</td>
<td>That the Deputy Minister of Health and Social Services define core health and social services for residents of Yukon Territory and align these services with ordinal rurality indices, and that the core services profile be re-evaluated on a regular basis</td>
</tr>
<tr>
<td>6.6</td>
<td>That an annual analysis of standard hospital metrics be conducted by the Yukon Hospital Corporation for Dawson City Community Hospital and Watson Lake Community Hospital, and be reviewed with the Deputy Minister of Health and Social Services in the context of collaborative care and service delivery to the residents of Yukon Territory</td>
</tr>
<tr>
<td>6.7</td>
<td>That the availability of diagnostic testing at Watson Lake Community Hospital during unsocial hours be assessed for timeliness and scope, and be remedied if not in keeping with expectations of contemporary health care</td>
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<tr>
<td>6.8</td>
<td>That health centre and home care resources be assessed against the increased acuity and needs of patients returning after early discharge programs</td>
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<td>6.9</td>
<td>That home care nurses and support staff be increased to meet the needs of each community or catchment area</td>
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<td>6.10</td>
<td>That the pilot disability project in Dawson City be extended an additional year</td>
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<tr>
<td><strong>7</strong></td>
<td><strong>Workforce Planning</strong></td>
</tr>
<tr>
<td>7.1</td>
<td>That a Workforce Planning Committee be struck by the Deputy Minister of Health and Social Services to meet quarterly to assess the activity levels of the health and social services workforce</td>
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<tr>
<td>7.2</td>
<td>That time and intensity studies of patient volumes be undertaken to establish the ideal FTE number of General Practitioners in Yukon Territory</td>
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<tr>
<td>7.3</td>
<td>That the Medical Specialist Committee examine the possible recruitment of the following specialties to Whitehorse: additional general Surgeon; additional Obstetrician and Gynecologist; Orthopedic Surgeon; Ophthalmologist; Paediatrician</td>
</tr>
</tbody>
</table>
### Summary of Key Findings and Recommendations

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<th>Recommendations</th>
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<tbody>
<tr>
<td>8</td>
<td><strong>Reporting</strong></td>
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<tr>
<td></td>
<td>8.1 That clinical outcomes, including Ambulatory Care Sensitive Conditions, be measured, across the territory, and linked to activities such as collaborative care and chronic disease management, and be reported annually to the Minister of Health and Social Services</td>
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<td></td>
<td>8.2 That epidemiology profiles, similar to that constructed in this report, be reported annually to the Minister of Health and Social Services</td>
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<td></td>
<td>8.3 That the impact of telehealth services be documented, quantified and reported annually to the Minister of Health and Social Services</td>
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<td></td>
<td>8.4 That the Workforce Planning Committee report annually to the Minister of Health and Social Services</td>
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<td></td>
<td>8.5 That small area rate variation analyses be undertaken on an annual basis for procedures identified by the Deputy Minister of Health and Social Services and be reported annually to the Minister of Health and Social Services</td>
</tr>
<tr>
<td></td>
<td>8.6 That avoidable mortality rates for residents of Yukon Territory be reported annually to the Minister of Health and Social Services</td>
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</table>
2.1 Purpose

The purpose of clinical services planning can be considered a convergence of 3D and Triple Aim:

In 2008, the Central Region District Health Boards in New Zealand completed a regional clinical services plan (www.rcsp.org.nz). The articulated purpose was to provide “3D” for the region:

• **Details** about what clinical services can be sustained and developed in the lower North Island and how they can be best organized.

• **Direction** in the form of a draft plan for hospital services over the next 10 to 15 years, describing what types of clinical services will need to be provided where and to what level, in order to best meet the needs of the population of the Region. Direction is also provided in relation to the enablers—the services and functions that need to be developed further in order to support the proposed changes in hospital care—including transport, information systems and primary and community services.

• **Decisions** to be made locally and regionally in order to implement this plan. In particular, a decision-making framework is proposed that will make it easier and faster for District Health Boards to make decisions jointly.

The **Triple Aim** is a learning initiative of the Institute for Healthcare Improvement to understand models of care in a framework to optimize system performance (www.ihi.org/Engage/Initiatives/TripleAim):

• Improve the individual patient experience (quality and satisfaction)

• Improve the health of populations

• Reduce the per capita cost of health care

2.2 Scope

The scope of the study of Yukon Territory is all encompassing, involving the following:

• All communities and facilities

• All health and social services

• All residents

• All providers

• Relevant indices of population health
The contextual basis of this scope includes, but is not limited to, the following:

- Strategic direction of the Government of Yukon Territory
- Economic and fiscal realities in Yukon Territory, with the highest quality return on the investment of public funds
- Evidence-based care, based on population health needs
- National and territorial approaches to quality of care
- National and territorial approaches to core services
- National and territorial approaches to collaborative care
  - Providers as partners in team-based care, founded in mutual respect and an ability to achieve role optimization
- National and territorial approaches to primary health care reform
- Cultural competency and sensitivity
- Responsiveness to expectations of patients and families
- Existing and planned health care facilities

Underpinning the approach not this study is the belief that a health and social services system has the principal function of providing quality, timely, and sustainable care to its residents. It is patient-centred, and its processes, facilities, and providers converge for that singular purpose.

2.3 Deliverables

Following are the project deliverables:

1. Project Charter
2. Data Catalogue
3. Baseline Environmental Scan
4. Clinical Service Matrices
5. Draft and Final Reports
6. Knowledge Transfer

2.4 Governance

The Executive Sponsor of the study was the Deputy Minister of Health and Social Services of the Government of Yukon Territory.
The ultimate stakeholders in a Clinical Services Plan (CSP) are the residents of Yukon Territory. Other stakeholders are both community-based and territorial, and include the following:

- Health and Social Services Council
- Council of Yukon First Nations Health and Social Commission
- Non-governmental Organizations
- Regulated Health Professions
- Yukon Hospital Corporation
- Yukon Medical Association
- Yukon Registered Nurses Association

The consulting assignment was a collaborative effort by Health Intelligence Inc. (HII), HealthStats Inc. (HSI), and Social Sector Metrics Inc. (SSM). The principals of these companies are Dr. David Peachey (HII), Mr. William Croson (HSI), and Mr. Nicholas Tait (SSM). HII was the project lead, with HSI, the statistical and analytic resource, and SSM, the technical resource for the development of the Clinical Service Matrices.

The project was supported by a governance structure that included a Steering Committee (SC), a Project Advisory Committee (PAC), a Technical Working Group (TWG), DHSS contacts for programs and policies, and, secondarily, through discussions with community and organizational stakeholders.

The **SC** was constituted by the following:

- Minister of Health and Social Services
- Deputy Minister of Health and Social Services
- Assistant Deputy Ministers of Health and Social Services

The **PAC** membership included organizational representation, as follows:

- Council of Yukon First Nations
- Department of Health and Social Services - Alcohol and Drug Services
- Department of Health and Social Services - Care and Community
- Department of Health and Social Services - Human Resources
- Department of Health and Social Services - Mental Health Services
- Department of Health and Social Services - Project Manager
- Health and Social Services (Dawson City)
Introduction

- Health and Social Services (Watson Lake)
- Kwanlin Dun First Nations
- Yukon Health Council
- Yukon Registered Nurses Association
- Yukon Medical Association

The **TWG** membership was constituted by individuals with unique data and methodology skills and, although drawn from organizations and departments, members did not represent specific interest groups.

The **DHSS** contacts for policies and programs represented the following:

- Adult Services
- Community Health Programs
- Extended Care
- Family and Children’s Services
- Insured Health Services
- Nursing
- Regional Services
- Safety and Clinical Excellence
- Wellness Initiative

### 2.5 Strategic Direction

Yukon Territory is committed to a needs-based model, built on a foundation of principles, that provides opportunities for patient-centred care through integrated and seamless delivery, encourages role optimization for all providers and equitable care for all patients.

The resultant methodology generated a current environmental scan of population needs, the actual supply of providers, and assumptions and variables that reflect system changes over a ten-year span. The model is not prescriptive, yet provides navigational capacity that can be applied if assumptions and variables change or do not materialize, as predicted.

It was essential that the methodology, comprehensiveness, and deliverables of the CSP support the Department of Health and Social Services of the Government of Yukon Territory (DHSS) in its overall responsibility for ensuring that quality, appropriate, cost-effective, and timely health services are available for all residents of Yukon Territory. These deliverables are recognized as complex, demanding, and multi-faceted.
The context of DHSS expectations required attention to a wide range of environmental (economy), societal (need versus want), structural (distribution of capacity), health resource (diverse providers in an integrated environment), and governmental (budget, policy, strategy, clinical service plan) variables.

2.6 Context

Providing quality, evidence-based health and social services in a timely fashion to territorial residents, dispersed widely across a vast geography, and within a sustainable and flexible model, carries significant challenges. The challenges are exacerbated when applied to the continuum of care from antenatal to end-of-life, focused, therefore, not only on acute care services. The system that underpins such care can be defined by infrastructure, facilities, and providers, working at a level of role optimization in a delivery model that is non-hierarchical and patient-centred.

Health care systems that are unplanned rarely, if ever, reach this potential; the level of commitment begins with high political office and senior management, and extends through an interdependent management structure and providers, characterized by having mutual respect and a collective commitment to integrated, collaborative care.

Even the most thorough examinations of a health and social services system have been based, generally, on remote data, a fact particularly relevant in times of rapid change. What can be offered is only a cross-sectional snapshot of a constantly evolving, often reactive, group of stakeholders, the structures they have developed and on which they depend, and the economic and societal forces shaping their decisions. These stakeholders, including, but not limited to, consumers, providers (including institutions), governments and other payers, are not homologous groups. Individual patients utilize health care services according to need, as well as to attitudes and beliefs about the efficacy of those services, and are constrained or encouraged by factors of accessibility. Providers offer diverse types and intensities of services, and are distributed unequally across geographic regions. Governments face varying levels of financial pressure and public involvement, and their responses differ significantly.

What is important in such an analysis is not the need for reform, or even its direction. Instead, the focus is on the current state of the system; an environmental scan becomes a starting point for evaluating the delivery of health and social services and for providing an opportunity to effect reasoned change. Such is the nature of clinical services planning—planning that is transparent and based on the best outcomes for patients that need health and social services. The caveat is that the planning process cannot be prescriptive, but must be navigational and responsive to changes in both pre-identified and unforeseen variables.

Successful planning provides better services for patients and their families and provides opportunities to address inequities. To achieve successful planning in the long-term, requires commitment across the system and belief in the values of the system and the imperative for change that maintains the patient at the centre of that system. Making progress is incremental and the full engagement of stakeholders across the system is always staggered; however,
policy persistence and an unwavering dedication to “our system” will lead to a successful endpoint.

The primary objective of the CSP is to provide the DHSS with a planning tool to deliver a quality, expertly led, collaboratively developed service plan that is evidence-based, sustainable, equitable, and detailed.

**Health human resources**, intrinsically, are the health care system. Without question, technology, beds, and pharmaceuticals are vital to its functioning, but the quality of care received by the people it serves starts and ends with the quality of its health human resources.

A health workforce and clinical services plan focuses on the full spectrum of health human resources. This is why alignment with the objective of appropriate inter-professional and intra-professional, innovative, delivery models is central to the design of a strategic framework and direction for workforce and clinical services planning.

Health human resources address the challenge of balancing supply and demand in a highly labour intensive delivery system. To be effective and sustainable requires the right mix and number of health care workers, ideally in multidisciplinary teams founded on mutual support and respect. Understanding the complexity of the work force, the contributing roles of supply and demand in generating shortages, demographic trends, and working conditions are additive in assessing the current and long-term pressures on the workforce. While sound, evidence-based decisions are essential to improve resource planning and, in this context, effective productivity, less frequently referenced are the consequences and challenges of silo thinking. Resource planning and related policy initiatives may be dysfunctional without coordination across the health workforce.

The **fundamental purpose** of health workforce and clinical service planning is to support achievement of, and continuous improvement in, high quality, economically sustainable, patient-centred health care. High quality means services that are timely, efficient, equitable, patient-centred, safe, and effective, as described in 2001 by the Institute of Medicine. Sustainable means affordable for current and future generations, such that changes in annual expenditures are consistent with the annual change in real (net of inflation) gross domestic product. Patient-centred means a health delivery system organized around the holistic needs of patient and family.

In the absence of health workforce planning as the basis of health system planning, policy, and implementation, the status quo will prevail. Across Canada, the status quo means a largely demand-based system of growth and change in health workforce needs.

**Clinical services forecasting** is a forward-looking projection based upon assumptions regarding key determinants of population need and workforce supply. **Clinical services planning** is the process of shaping the future forecast according to organizational strategy, policy, and objectives. The work of clinical services planning is neither formulaic nor necessarily, intuitive; rather, it is navigating and weighting details, both seeking information and
responding to it. It requires sensitivity to the key determinants and variables of health human resource and service planning, and responsiveness to unanticipated changes in those variables; this approach merges with population health assessments and projections as the basis of a clinical services plan.

Application of the determinants of need and supply to a forecasting model requires informed assumptions about their current state and future behaviour. The validity of assumptions requires ongoing and detailed research on each key determinant. For this reason, the research phase of a project included extensive consultation across the territory with multiple key informants, extensive data analysis, peer-reviewed literature review, and stakeholder strategic and operational plan analysis.

2.7 Determinants

The determinants that underpin clinical service planning are separated into variables of need and variables of supply. A current state assessment of both need and supply provided the foundation for going forward with a **five-year clinical services plan** and the development of **clinical services matrices**.

Deriving analyses and recommendations is more than an exercise of metrics, based on a merger of the quantitative need and supply determinants. Rather, the final deliverables incorporated qualitative assessments to reflect stakeholder positions and secondary data.

Clinical services planning requires consideration of many determinants that impact the **need**:

- Population
  - Growth, age, gender, distribution, culture, fertility, mortality rate, in/out migration (permanent and seasonal), and socio-economic status (family income, employment, education)

- Disease incidence and prevalence

- Access to services
  - Target time to being seen, to diagnosis, and to treatment for defined core services
  - Services delivered locally, regionally, territorially, and out-of-territory

- Clinical programs
  - Factors impacting service sustainability, such as on-call intensity/frequency, and maintenance of competency, with an appropriate caseload
  - Evidence-based technology innovations
  - Facility capital project

**Exhibit 02-01** is a non-prioritized summary of the determinants of need.
Clinical services forecasting and planning requires consideration of many determinants that impact the supply of providers:

- Demography and mobility
- Age, gender, in-migration and out-migration, retirement and separations
- Education and training
- Key determinants of supply, by discipline
- Professional profiles
- Productivity
- Enhanced collaborative care

**Exhibit 02-02** is a non-prioritized summary of the determinants of supply.
2.8 Principles

Project principles constitute the anchor to underpin the complexity of a ten-year clinical services plan that provides quality, evidence-based care that is sustainable and based on population health needs.

The principles are derived to reflect the strategic direction of the DHSS and are meaningful to the members of the Project Advisory Committee and to the identified stakeholders. They need to be evident, explicitly, in how clinical services planning is designed, conducted, and applied, and anchor the project. Following are the underpinning principles:

i. **Transparent**
   All aspects of methodology, data acquisition and analysis, decision-making, and modeling are easily understood or able to be explained.

ii. **Patient-Centered**
    Decisions, modeling, and related considerations are focused on the patient as the centre of the care delivery system; patient-centred means a health delivery system organized around the holistic needs of patient and family.

iii. **Appropriate to population need**
    Identify and apply evidence-based markers of population need, such as growth, aging, mobility, gender, disease incidence/prevalence rates and morbidity and mortality rates.
iv. **Culturally sensitive**
   Responsive to cultural implications and sensitivities of analyses and decision-making

v. **Affordable now and sustainable in the future**
   Consistent with the economic base and its annual real growth

vi. **Equitable across the geographic distribution of the population**
   Incorporate local access to core services; referral access to added services

vii. **Preserve and enhance quality of care**
   Apply defined standards for acceptable, appropriate, accessible, efficient, effective, and safe care

viii. **Supports appropriate access to needed services**
   Identify needed services and define access standards and progressive targets for locally, regionally, territorially, and extra-territorially delivered services

ix. **Active, robust practitioner engagement**
   Define and implement actions to ensure effective practitioner input at each phase and with each component deliverable

x. **Aligned with appropriate inter-professional and intra-professional, innovative, delivery models**
   Define and integrate collaborative models of care; role optimization of health professions

xi. **Designed in context of government and stakeholder health system strategic priorities and plans**
   Includes government, health authorities, faculties of medicine, colleges, professional associations, and First Nations communities

xii. **Inclusive of relevant determinants of current and future provider supply**
   Integrate age, gender, national and provincial/territorial determinants

xiii. **Predicated on productive, sustainable, quality, benchmarked workload**
   Define and integrate the concepts of full-time equivalence, sustainable burden of work, sentinel qualitative and quantitative metrics, and productivity benchmarks

### 2.9 Approach

Derivation of the project deliverables requires the acquisition, validation, and analysis of diverse information, some of which require further harmonization. The five methodological phases were, as follows;

1. **Project Initiation Phase**

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3 See section 2.3 of this report on page 21
2. Qualitative Intelligence Phase
   i. Document acquisition and review
   ii. Literature review and update
   iii. Key informant interviews

3. Quantitative Intelligence Phase
   i. Development and verification of data catalogue
   ii. Data acquisition
   iii. Thematic data analyses

4. Clinical Service Matrices Phase

5. Reporting Phase
   i. Clinical Service Matrices
   ii. Draft final report
   iii. Final report
   iv. Knowledge transfer

**Project Initiation Phase** was the foundation upon which the study was conducted. Preliminary meetings were held with DHSS to discuss relevant files, a project charter, a master slide deck, a preliminary work plan, and a preliminary data acquisition menu. These constituted the first deliverables for presentation to the Project Steering Committee. At the same time, primary contacts were established for the initially identified qualitative and quantitative segments. Membership on the Project Advisory Committee and the Technical Working Group were ascertained, and the respective terms of reference drafted.

**Overall Objectives of Initiation Phase**
- Clarify key policies and parallel initiatives and leadership strategic vision
- Identify data needs and availability, and create a data acquisition plan
- Initiate data and document acquisition
- Confirm and approve preliminary project mandate, charter, master slide deck, detailed plan, and membership on the advisory committee

**Qualitative Intelligence Phase** was the acquisition of relevant documentation and its review, a synthesis of an updated literature review, and the individual and aggregate of key informant interviews. **Research Phase (Document Review)** provided an understanding of key legacy files, to be augmented by subsequent activity related to data and document collection, analysis, and integration. These files were reassessed on a monthly basis to ensure their integrity and collective comprehensiveness, and were catalogued on a secure server to facilitate access by...
the consultants and Project Manager. As well, the documents were cross-referenced and have been included as an Appendix to this report.  

Research Phase (Literature Review) built on an established literature base with respect to workforce and clinical service planning to ensure that optimal methodological and benchmarking data are incorporated into the study. Research Phase (Data Acquisition) was designed to acquire and validate comprehensive provider, population, and service data, as both primary datasets and secondary datasets. Their subsequent assessment and cross-referencing enabled the development of thematic views of the health care system in Yukon Territory. The final data formats provide the basis of maintaining key data in real-time, going forward, and the application of determined variables of need and supply, when integrated into the Project Integrated Data Management Database (PDMD). The various data sets were augmented through key leadership and provider interviews and surveys, where required. These data, when aggregated, provided the basis of inquiry during the site visits and interviews. The aggregated data also formed the basis of milestone reviews and testing of face validity of preliminary meetings with the Project Advisory Committee. Research Phase (Site Visits and Interviews) provided critical weighting to the analysis of the qualitative and quantitative research. In addition to interviews across the DHSS, stakeholders, community representatives, and organizational and agency representatives were interviewed to inform the consultants of unique experiences and system observations. These included site visits or telehealth interviews with every Health Centre in the Yukon Territory. The regional data were integrated with the extant data sets, following which a further step of validation occurred. A list of those interviewed is provided as an appendix to this report.

Overall Objectives of Research Phase (Document Review)
Review documentation on current service delivery profiles including, but not limited to, communities, networks, technology, capital programs, referral patterns, patient and physician movement within territories and to other jurisdictions
Review other source documents, as identified during the Initiation Phase

Overall Objectives of Research Phase (Literature Review)
Where applicable, ensure the approaches to methodology and benchmarking are comprehensive, valid, and contemporary

Overall Objectives of Research Phase (Data Acquisition)
Acquire, collate, and aggregate the best available, comprehensive and validated data to be used as the foundation for the study and to provide the basis for a ten-year projected clinical services plan
Enable the development of a PDMD that will be the vital data resource for the study and the basis of a desk-top resource that will be one of the project deliverables

See also Appendix A.4 Reference Files Catalogue on page 275

See also Appendix A.7 Interview Catalogue on page 296
Facilitate the development of a meaningful section on data limitations; this section will provide guidance to the interpretation of report data and to the development of a strategy to improve subsequent data acquisition and application by the DHSS.

**Overall Objectives of Research Phase (Site Visits and Interviews)**

Site visits and interviews provide an opportunity to review the study and methodology with informed resources, to validate the data foundation, and to acquire further data based on a template approach as the basis of interviews.

**Quantitative Intelligence Phase** was the acquisition of relevant data in a variety of formats, the process of management and collation, validation, and analyses, using an approach of thematics:

1. **Geography**
   - Descriptors
   - Maps
   - Coordinates
     - Postal codes
     - Census subdivisions
2. **Population and Communities**
   - Descriptors
   - Population
     - Estimates
     - Projections
   - Vital Statistics
   - Migration
   - First Nations communities
   - Socioeconomic datasets
3. **Need and Epidemiology**
   - Incidence of morbidity

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6 See also Appendix A.5 Abstraction of Needs Assessment Data on page 279 abstracted from the Needs Assessments of Dawson City and Watson Lake (Health Intelligence, 2013).
Introduction

- Prevalence of morbidity
- Mortality rates
- Health Indicators
- Social factors

4. Utilization

- Medical services
- Hospital services
- Community services
- Social services
- Long-term care

5. Resources and Supply

- Providers
- Programs
- Services

The analytic phase of the study enabled the generation of a final data foundation, the conduct of absolute, relative, and comparative benchmarks analysis, and documentation of iterative, evidence-based findings. This phase also reviewed milestones and tested the face validity of detailed findings and preliminary directional planning.

**Overall Objectives of Quantitative Intelligence Phase**

*Finalize the data foundation and conduct benchmarks analysis to determine preliminary findings*

*Scenario testing*

**Clinical Service Matrices Phase** was a key deliverable; the theory and use of matrices is provided as a separate section of this report.⁷

**Reporting Phase** was the convergence of the adjusted population health needs and provider supply variables, weighted by interviews and site visits. A draft report was constituted by a detailed narrative, key references, forecasting and planning modeling, and the Clinical Service Matrices.

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⁷ See also chapter 16 Clinical Services Planning on page 240
In summary:

**Exhibit 02-03**
**Schematic of the Approach**

2.10 Sustainability and Vulnerability

Advocates of funding cuts to the provision of health and social services frequently point to the potential to reduce spending on health services by improving health. While there is no doubt that some health promotion measures have decreased the spread and burden of disease in individuals (AIDS education programs, tobacco-control measures), and others have contributed to public health (fluoridation), there is insufficient evidence to suggest that medical expenditures can, in the relatively short term, be decreased on the basis of health promotion. This is a relevant and long-term proposition.

A health care system has relatively little to do with health status. More important are what have come to be known as the social determinants of health: education and economic status, ecological stability, nutrition, legislation, community support, levels of crime and violence.
These are aggregated to a lifetime exposure to physical and social environments. The problem facing health policy-makers is that many of these factors are external to the health budget.

The bottom line is that, although the determinants of health are key factors in the need for and consumption of medical care, they are, for the most part, outside the jurisdiction of those immediately responsible for health policy. The assumption seems to be that benefits will accrue to health services because “someone else” is addressing the determinants of health. This has led to health reforms based almost entirely on controlling the supply of services and providers.

To support reform directions and to identify new ones, policy-makers are tending to put greater stock in health services research. Although the value of research is lauded, dedicated financial support and other resources continue to be scarce. Separate from the issue of research support, however, is the expectation that, beyond informing the debate, health services research will be able to provide all the answers. This is a dangerous misconception if it discourages consideration of societal values, relative needs, and resource allocation.

A number of jurisdictions have implemented forms of regionalization or, by virtue of changes in funding formulae, have compelled institutions and communities to undertake de facto regionalization initiatives. These may be positive steps in the rationalization of health services, but the absence of an overall plan has threatened the comprehensiveness of services in some areas. For example, hospitals have enjoyed a tradition of self-governance and, within limits, have been free to focus their services as determined by their boards of trustees. However, when all hospitals are facing pressures to change simultaneously, the importance of coordination within communities becomes apparent.

Differences in approaches to change are evident at all levels, leading to variations in access to and quality of care within institutions, across regions and from one province to another. Justification for these differences has made jurisdictional variations in the interpretation of the Canada Health Act and the willingness to adhere to its principles more explicit.

2.11 Data Limitations

The analytics of the project include the application of a number of research techniques, including the use of corroborating evidence, standardized interviews, and iterative data refinement to improve accuracy and quality, and to conduct testing, revision, and validation of preliminary results with the Ministry. Analyzed data include five-year and ten-year periods. This time frame is long enough to permit trend identification and analyses. Key limitations include:

Access to services

Indicators of access to services is one of a number of important indicators of population need. The quality of data on access to services varies, typically, by service, location, and specialty.
Active providers

Achievement of an accurate territorial roster of active providers is very important as a baseline data input to the model. Roster accuracy is difficult to achieve and maintain due to factors such as constant coming/go ing and changes in work status, practice scope, and location.

Certified Specialty

Readily available data on specialty of certification by individual is not assured. Working from the license status and cross-referencing to related sources, the consultants recommended changes, where necessary.

Communities

Information specific to each of the communities relied heavily on locally provided information from the Government of Yukon website (http://www.yukoncommunities.yk.ca); while not a true limitation, it does reflect the reality of reporting for small communities across Canada, and for those in territorial regions in particular; nonetheless, the information provided conveys considerable insight into each community.

Data

An important limiting factor of the needs-based approach is the unavailability of extensive epidemiological data, leading some designers to use an alternative approach based on utilization data.

The approach adopted for this study is an “adjusted population needs-based model” which incorporates demand utilization data, where appropriate. Specific data issues include the following:

- Access to validated primary data or data that are able to be validated; this is a standard limitation in any review of clinical service planning or assessment

- *Mitigating Strategy: the preliminary data are existing datasets*

- Access to secondary data identified after the preliminary assessment

- *Mitigating Strategy: the consultants have worked with the Project Advisory Committee to identify secondary data at the earliest possible time and to jointly evaluate access and impact*

- Access to resources identified as key interviews

- *Mitigating Strategy: the consultants have worked with the Project Steering Committee to identify the primary interviews at the earliest possible time; as well, the consultants worked with the primary interviews to identify the secondary interviews; every effort was
made to complete all interviews and, if necessary, to time-shift the project schedule to accommodate individual schedules

Full-time Equivalency

Full-time equivalency (FTE) is an essential but contentious concept, filled with competing interpretations and definitions, in addition to changes in status during the study period; throughout, the consultants worked with definable FTEs as the unit of service measurement.

Functional Specialty

Functional specialty for physicians, particularly, (such as a Cardiologist who spends 50% of professional time doing “general internal medicine”) is a complex, time-intensive construct to define, refine, and maintain. For example, an individual may change functional status in response to changes in local physician supply (recruitment of a General Internal Medicine specialist enabling a Cardiologist to revert to full-time Cardiology, which, in turn, decreases Cardiology referrals to another region). A second complication is blurring of the definitional line between licensed and functional specialty, such as practising Cardiology being linked to a requirement to practise General Internal Medicine. The model uses licensed specialty except in a few (less than 2%) instances where an individual is licensed in one specialty but has, often for many years, functioned totally in another specialty. In these instances, the individual is reassigned to the functional specialty.

Health Resources

Much of what has been described in Health Services Utilization applies to this section as well, as the sources are the same. Additional data have been obtained from the administrative perspective, for example, staffing complements. Given the changing nature of staffing, these are considered to be “snapshots” at a point in time. They do, however, provide insight into the breadth and depth of service offerings.

Health Services Utilization

In general, health and social services data are available through DHSS, either for each patient’s encounter with the various services or for various programs. This includes encounters where treatment is provided in the Yukon as well as for services provided outside of the territory, through reciprocal arrangements. Often, postal code information makes it possible to identify where the patient was located at the time of service in order to isolate activity related to a specific community.

As in other jurisdictions in Canada, medical services provided through alternative payment programs (APPs) are not as robust in detailing the levels of service provided, nor the equivalent amounts of cost in providing those services. This report relies on the information provided, recognizing that there may be gaps in reporting APP-related activity.
As in other jurisdictions in Canada, medical services data have evolved over time to address the need to account for payments to practitioners. The primary purpose of these systems was not to monitor utilization, although they have been enlisted for that purpose on occasion. This is a note to recognize that details of patient-physician encounters (diagnostic information, setting) are not considered to be robust, but are nonetheless informative.

Hospital utilization data submitted to CIHI have evolved considerably over time. Much of this data is deemed robust. We note, however, that activity associated with the Watson Lake Hospital is not reported to CIHI. The Dawson City Hospital has recently opened and, although it is too soon to have sufficient data reported to formulate a picture of services provided there, it is also not currently reporting data to CIHI. It has been indicated that there are plans for data from both Watson Lake and Dawson City to be included in submissions to CIHI. Some information is available through the Whitehorse General Hospital/Yukon Hospital Corporation, but it lacks the richness provided by standard CIHI abstracting processes. During the study, Dawson City and Watson Lake data were acquired and handled as freestanding sources.

Data for other ancillary health services are available on a service by service basis and provide a reasonable accounting of the activities provided for each area.

**Health Status**

Health Status indicators and reports, referenced in this study to describe health status, are generally not specific to the smaller communities in the territory; they present findings from a variety of studies that identify health status issues at the territorial level; in some cases, distinctions have been drawn between the rural experience in Yukon and the urban (Whitehorse) experience; these are helpful in painting a picture of the conditions in smaller communities and the challenges encountered outside of Whitehorse.

**Impact of Single Events**

The possible effects of overlooked events can be substantial as can over- or under-estimating of known future events. For example, the launch of a new cancer screening program may be known, but the percentage uptake by the population may be highly uncertain and the impact on service need is proportionately uncertain.

**Independent Variables are not Mutually Independent**

The central problem in forecasting is that “cases” (that is, the source data by time period) used to make forecasts do not represent the future time periods about which predictions are made.

A second problem that arises in forecasting is the nature of variable interdependency. For example, to what extent does supply influence demand? To what degree does demand for
services represent need for services (i.e., a source of constant challenge for practitioners necessitating case-by-case judgment decisions)?

**Managing Expectations**

Workforce supply and need modeling is an inexact science due to varying degrees of uncertainty in each variable, the nature of their inter-relationship, and variables not modeled. Models do not deliver certainty. A well designed, maintained, and enhanced model will significantly reduce uncertainty, thereby adding value to decision-making.

**Model Uncertainty**

Workforce supply and needs modeling occurs under conditions of uncertainty. As such, it is necessary to make note of the key areas of uncertainty.

**People**

Information products available through Government of Yukon Territory sources and Statistics Canada are often constrained by sparse data for small communities; surveys rely on response levels that support defendable estimates, derived from larger samples; some data are available at the community level (i.e., either through postal code level information at the Forward Sortation Area (FSA) level, or at the Census Subdivision (CSD, level; some data do not yield specific results for more discrete levels of disaggregation; there is sufficient detail available to develop a reasonable overview of the communities in Yukon.

**Timing**

Changes in provider counts and FTEs occurring after the effective date of source data will not be reflected in the baseline of the forecast projections.
3.1 Quality of Care

A framework, supporting the many dimensions of quality, is essential in assessing population need. The Institute of Medicine (IOM) definition of the core attributes of quality care has withstood the test of time:

- **Safe**: avoiding injuries to patients from the care that is intended to help them
- **Effective**: providing services based on scientific knowledge to all who could benefit, and refraining from providing services to those not likely to benefit
- **Patient-centered**: providing care that is respectful of and responsive to individual patient preferences, needs, and values, and ensuring that patient values guide all clinical decisions
- **Timely**: reducing waits and, sometimes, harmful delays for both those who receive and those who give care
- **Efficient**: avoiding waste, including waste of equipment, supplies, ideas, and energy
- **Equitable**: providing care that does not vary in quality because of personal characteristics such as gender, ethnicity, geographic location, and socioeconomic status

All jurisdictions have continued to evolve quality frameworks, often through commissions or quality councils, all driven by the use of validated and harmonized data. Examples include the use of linear tracking of case groupers by the Health Quality Council in Saskatchewan for a continuum of care analysis, and the Health Quality Matrix of the Health Quality Council in Alberta. The former demonstrates the effective use of data and the latter, a pragmatic framework. Constant across these initiatives is a congruence with the attributes of the Health Quality Council of Alberta and the original definition put forward by the IOM.

**Exhibit 03-01** represents the Alberta Health Quality Matrix that can be adapted to most frameworks of assessment.

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8 See also: chapter 5 Key Concepts on page 138; chapter 11 Collaborative and Team-Based Care on page 212; chapter 12 Nursing Services on page 220; chapter 14 Chronic Disease Management on page 235

9 Institute of Medicine, Shaping The Future For Health Crossing The Quality Chasm: A New Health System For The 21st Century, March 2001
Explicitly integrating quality to clinical services planning is both complex and essential to a patient-centred health delivery system. Applying workforce and material resources must be matched with a delivery system to permit appropriate and timely access to needed services. **Exhibit 03-02** is a matrix adaptation of both the HQCA Quality Matrix and the CanMEDS framework of the Royal College of Physicians and Surgeons of Canada.

**Exhibit 03-02**
Integration of the Health Quality Matrix and CanMeds Framework
The adaptation illustrates the explicit nature of links between quality and CSP. Services planning (in this example, physician-based) focuses on the ‘Medical Expert’ CanMEDS domain and the intersection with Efficiency, Effectiveness, and Accessibility found in the Health Quality Framework. Productivity is an integral component of CSP and it is around this concept that quality and CSP intersect. For example, an assessment of population need that identifies x% increase in chronic renal failure and a corresponding increase in nephrologists and advanced practice nurses to meet this need is applying an efficiency (volume of consultations) requirement along with the expectation of quality of service (correct diagnoses) and accessibility of service (wait time reduction and the use of other health professionals, working at top-of-license).

Expanding quality perspectives derives a granularity that is necessary to understand and achieve quality considerations:

- Clinical relevance consonant with health system quality frameworks:
  - Acceptability
  - Accessibility
  - Appropriateness
  - Effectiveness
  - Efficiency
  - Safety
- Professional relevance defined by health professions, regulatory and licensing bodies, and governance models:
  - Maintenance of competencies (core and expanded)
  - Continuing education
  - Robust methodology
  - Scalable with capacity to amend to individuals, aggregated professionals, and geography
  - Defined and measurable indicators that are relevant and consistent
- Best practices:
  - Rigorous and validated research methodologies
  - Underpinned by accessible and transparent best practices
  - Inter-jurisdictional lessons
Outputs and Outcomes

Avedis Donabedian identified three ways in which to define quality, reinforcing the challenges evoked by differences in perspective: an individualized definition, wherein the quality is measured against a patient’s wishes, expectations, and value systems; an absolutist definition, wherein clinical management achieves the best balance of health benefits and risks; and, a social definition, which incorporates the factors of an individualized definition, but with differing quantities and the addition of an aggregate net benefit or utility, whereby the social distribution of the benefit within a population assumes a greater importance.

Contemplating an economic model or a quality model in isolation risks conclusions that are not constructive in advancing policy that improves either dimension. A comparison of high intensity practices to low intensity practices can lead to reasoned outcome analyses, but at the risk of not addressing economic productivity. A study restricted to economic outputs can overlook quality consequences.

In healthcare, there is value attached to outputs that translate into improved health status. Productivity gains can be realized in terms of quantity and quality, but in the absence of an improvement in health status; however, all three, as an ideal, can be achieved. In addition, there need not be a trade-off between quality and quantity; cataract surgery is an example where productivity gains have been accomplished in both dimensions.

The real challenge is to determine what to measure and what to do with the information. Productivity measurement of health professionals and quality improvement in the care they provide depend upon obtainable goals that are reasonable, achievable, and provide a basis for improvement. Its evolution will be in a population-based model that is patient-centred, proactive, and incorporates evidence-based decision tools, cost-effective practice, and the continuing improvement of outcomes. Movement in this direction needs to be direct and unwavering, supportive of the controlled introduction of technology, and respectful of the knowledge and judgment, technical skills, communication skills, and risk and stress that underpin the art and science of an encounter with a patient.

The clear focus of macroeconomics, indeed any economic model, is outputs; attention to outcomes is not included in the model and is the fundamental limitation to its usefulness. The long history of attention to outputs within an economic model includes service volumes and intensity measures. Quality outputs are not included and outcomes are not measured. This presents a political conundrum built on legacy attention to the production of services (outputs) in the absence of evaluating their health effect (outcomes). Productivity studies in health care usually measure activity and outputs; a paradigm shift is required to transform the focus to outcomes while preserving valid economic analyses.

The required shift to outcomes cannot be anticipated to come easily or quickly at any of the levels of the health care system. Goals will be much more manageable through adherence to a process of evolution that builds upon simple, digestible pieces. Only then will the multiple dimensions of effectiveness be distilled into three distinct outcomes:
1. Health outcomes with a focus on patients and populations

2. System outcomes that include cost and sustainability

3. Provider outcomes with a focus on health human resources

An outcome can be any of negative, neutral, or positive; it may or may not improve population health status and may or may not be consonant with health system goals or priorities of the government.

Outcomes are the link between an economic model and quality care and improvement. The starting point of measuring effective productivity in health care requires a shift to the core belief that activity in a health care system cannot be justified unless the purpose is improvement or, at the least, maintenance of the health status of individuals or populations. The principal benefit of outcome measurement is to inform and stimulate practice improvement.

Inclusion of outcomes in assessing population need transforms a technical definition into one that incorporates concepts of quality and effectiveness. Ultimately, effective productivity indicators need to be identified for all types of outcomes. The diversity of outcomes, to some degree reflections of the different types of effectiveness, will require an even greater diversity of indicators.

Inputs and outputs, as recognized in the more traditional view of health care delivery and processes, will not disappear. They are not being replaced, but are included in the concept of effective productivity; the key difference is the addition of improved quality of care and improved outcomes that contribute to achieving health system goals. Inputs and outputs underpin an “economic model” and outcomes underpin a “quality model” – neither should be viewed in isolation.

**Effective Productivity**

The Western and Northern Health Human Resource Planning Forum defined “effective productivity” as an increase in outputs per unit of input where there is evidence of improved quality of care and improved health outcomes that contribute to achieving health system goals.

Implicit to acceptance of this definition is an understanding of the concepts and related definitions, guiding principles, assumptions, processes, and practices that advance the full potential of effective productivity while understanding potential barriers and the predictors and facilitators of success.

Traditional thinking has focused on inputs and outputs as key elements of productivity; to advance beyond this approach requires a fundamental shift in viewing and examining the health care system and its human resource complement of health professionals.

While technical, and sometime linear, elements cannot be ignored, their relevance will depend upon success in the “third revolution” described more than twenty years ago by Arnold Relman
in the New England Journal of Medicine. What he articulated as the era of assessment and accountability has undergone transformation, whereby productivity, today, can be contemplated as effective productivity and the goals and processes of health care systems will be positive outcomes not limited to a labour model of productivity.

This definition of effective productivity, linking the economic model and the quality model with outcomes, avoids contemplating either in isolation. Acceptance of the concept of effective productivity will be greater with the implicit and, where appropriate, the explicit inclusion of affordability and value, both in the context of sustainability.

A value dimension is attached to outcomes that translate into improved health status and is linked with care that is appropriate and patient-centred. Quality outcomes can lead to quality improvement that ideally translates into a social benefit for a population.

The scope of effective productivity includes all of the following:

- Clinical effectiveness
- Cost effectiveness
- Human resource effectiveness
- Management effectiveness
- Focus on patients and population
- Improved quality of care
- Improved health outcomes

In contrast, “ineffective productivity” was defined as outputs per unit of input where outcomes are negative or inefficient and fail to achieve health system goals or maintain the health status of an individual or population. Outcomes of ineffective productivity can be more than inefficient or ineffective; they can be inappropriate or harmful. In the broadest sense, any output that does not improve health outcomes or maintain health status is ineffective, without any consideration of the volume of outputs. In fact, volume becomes irrelevant. As summarized in a review of health human resources productivity, an institution or system that is increasingly efficient, measured as more outputs per unit of input, but with ineffective or harmful care is not more productive in any meaningful sense.

Inefficient productivity may have a positive outcome on quality of care or health status but be achieved through a waste of human or fiscal resources. Negative productivity describes health care activities that are any or all of inappropriate, unsafe, untimely, or inequitable. Equally important, . . . *an output measure should be adjusted for the incremental contribution of the activity to individual or collective welfare. This should include capturing any change in outcomes, which is attributable to the use of the inputs. A basic count of activities does not measure the quality of the*
output, such as change in quality of patient experience or clinical effectiveness. This is a continued weakness of the current method . . .

3.2 Medical Generalism

The Council on Graduate Medical Education in the United States has noted the decline in interest in most of the generalist specialties, especially in the context of declining postgraduate matching in family medicine, general internal medicine, and general paediatrics. The shortage of generalists in Canada is no less acute and, regardless of evidence of advancing corrective measures by Deans and Deputy Ministers, a system impact of change in educational policy will take several years to be evident.

Sheldon et. al. offer a slightly different perspective when advocating for a future focused on disease management, rather than specialty-based care. They contend certain services (trauma and emergency teams, cardiology and cardiac surgery specialties, and oncology) are already functioning in that manner. In oncology, care teams include a patient advocate, clinical nurse specialists, radiologist, radiation oncologist, pathologist, oncolgical surgeons, plastic surgeons, and medical oncologists. The result, according to Sheldon, is the need for a new concept of generalism. Rather than expecting a single practitioner to have some knowledge of all options, generalism should be a summation of the input of a spectrum of experts. One could interpret this viewpoint as being centred on tertiary programs, but can, just as easily, be manifest with collaborative care teams.

General Internal Medicine (GIM) has reexamined its future in the face of increasing sub-specialization. The RCPSC CanMEDS project has renewed a common focus on core competencies in the medical education system. Each Canadian Faculty of Medicine is revising curriculum, extensively, to align with the core competency focus. A senior representative of one large Faculty of Medicine made the following observation on generalism in the context of the ongoing curriculum renewal, I believe the majority of the health needs of the most people can be met by generalists: family physicians, general internists, general surgeons, general psychiatrists, general pediatricians, general obstetricians and gynecologists, general radiologists, general anesthetists and general laboratory specialists. I believe we should limit the number of subspecialists trained. He goes on to note that part of the trend to sub-specialization can be attributed to the disproportionate amount of teaching done by subspecialists, in comparison to generalists, with a predictable role model effect.

10 COGME: Update on the Physician Workforce, August 2000
13 O’Brien, B.D., Professor, Department of Medicine (General Internal Medicine), UofA Faculty of Medicine and Dentistry
The RCPSC continues to examine expanded generalism. There is broad support for a medical education system where training in all primary specialties must include a period of core training in order to develop a base of generalist competencies. There is, however, no consensus on the issue of generalism at the RCPSC. The Royal College Standing Education Committee, at its 2006 conjoint meeting with the Deans of Postgraduate Medical Education, sought to arrive at mutual understanding on the issue of generalism in Canada.

 Participants, after deliberations, agreed that the issue is context driven and the definition of generalism will vary pending on numerous factors that include but not limited to, the region of practice and the area of specialization. Participants were therefore, unenthusiastic with the idea of presenting one all encompassing definition of generalism. The RCPSC and CFPC did recommend that the Royal College and the CFPC, in collaboration with key partners, engage in an ongoing dialogue on the specialist and generalist mix to best meet the needs of Canadians.14

One contributing Dean emphasized that “…the generalism debate [be] properly placed under the ‘health care’ and ‘manpower’ umbrella (Reznick).” This direction would take PGME towards a more managed allocation of training positions between generalist or primary specialties and the subspecialties.

Primary Care Services

There is a widening dissonance between traditional primary care services and the evolution of primary care, witnessed across most settings (particularly, urban) and jurisdictions.

The College of Family Physicians of Canada, having established a clinical section for family physicians with special interests or focused practice, has approved programs in 18 domains:

- Addiction Medicine
- Family Practice Anaesthesia
- Cancer Care
- Child and Adolescent Health
- Chronic Pain
- Dermatology
- Developmental Disabilities
- Emergency Medicine

14 RCPSC and CFPC, Perspectives on Residency Education in Canada An Interim Report of the Core Competency Project, September 2007
3.3 Primary Care Reform

“Primary health care” is defined in a pragmatic manner on the Health Canada web site:

*Primary health care refers to an approach to health and a spectrum of services beyond the traditional health care system. It includes all services that play a part in health, such as income, housing, education, and environment. Primary care is the element within primary health care that focuses on health care services, including health promotion, illness and injury prevention, and the diagnosis and treatment of illness and injury.*

Useful, also on the Health Canada web site, is a description of primary health care services:

Primary health care serves a dual function in the health care system:

*Direct provision of first-contact services (by providers such as family physicians, nurse practitioners, pharmacists, and telephone advice lines)*

*A coordination function to ensure continuity and ease of movement across the system, so that care remains integrated when Canadians require more specialized services (with specialists or in hospitals, for example)*

Responsiveness to community needs is a key element of primary health care. Therefore, the range and configuration of services may vary from one community to another: there is no "one size fits all" model. Similarly, there may be various governance and funding models. Primary health care services often include:

- Prevention and treatment of common diseases and injuries

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15 See also section 5.4 Patient-Centred Care on page 151
• Basic emergency services
• Referrals to/coordination with other levels of care (such as hospitals and specialist care)
• Primary mental health care
• Palliative and end-of-life care
• Health promotion
• Healthy child development
• Primary maternity care
• Rehabilitation services

Through primary health care transition funding, Health Canada has invested in the belief that the Romanow Commission\textsuperscript{16} statement of “... high-quality, effective primary health care services have profound implications for the entire health care system”. The final report states, “... there is almost universal agreement that primary health care offers tremendous potential benefits to Canadians and to the health care system ... no other initiative holds as much potential for improving health and sustaining our health care system.” A target was set and agreed by first Ministers to a Health Care Accord which identified a target of 50% of Canadians having 24/7 access to an appropriate primary health care provider by 2011.

The College of Family Physicians of Canada (CFPC) strategic plan emphasizes that access to comprehensive continuing care in a family practice setting is the cornerstone of high-quality health care for the people of Canada.

The Canadian Medical Association (CMA) principles to guide health care transformation in Canada state, unequivocally, that, “A strong primary care foundation and collaboration and communication within and between health professional disciplines along the continuum are essential to achieving patient-centred care.”

The American Academy of Family Physicians conducts a regular assessment of physician workforce planning. Among its chief concerns is the increasing generalist-specialist imbalance in the United States, undermining the nation’s ability to achieve universal health care access and limits its ability to meet needs of underserved rural and urban populations\textsuperscript{17} Sixty-two percent (62%) of the American physician workforce are specialists.

The Council on Graduate Medical Education and the Association of American Medical Colleges have called for 50 percent of American medical graduates to enter generalist careers.

\textsuperscript{16} Building Values The Future of Health Care In Canada, R. Romanow November 2002

\textsuperscript{17} Family Physician Workforce Reform: Recommendations of the American Academy of Family Physicians (AAFP Reprint No. 305b), 2009
National Perspectives

CIHI 2008-09 data reports 58% of the national physician workforce FTEs are general practice, with a range from 51% in Nova Scotia to 63% in Saskatchewan.

Central to primary care reform is collaborative, or team-based integrative care, with multidisciplinary teams of providers, working at “top-of-license” within a non-hierarchical model. These teams can include any mixture of nurses (including advanced care and nurse practitioners, registered nurses, and licensed practical nurses), pharmacists, physiotherapists, dietitians, physicians, mental health counselors, educators, and others. Too frequently, there is a misconception that multiple professions, providing care in a common space, with or without shared patients, constitutes collaborative care; this fails to recognize that collaboration is an acquired skill, founded on mutual respect and role optimization.

Initiatives focused on strengthening primary care have and continue to be developed and implemented across Canada, frequently under the umbrella of “primary care reform.” Though well intended, that is cause for caution in the evaluation. Not infrequently, the reform models increase physician income and decrease patient access. As well, accompanying pay-for-performance funding has been aligned in Canada, with exceptions, with codifying existing behaviour and not incenting change.

3.4 Pay-for-Performance

Pay-for-performance initiatives in physician compensation models have evolved, over the past decade, to become a component in the pursuit of enhanced quality in health care systems. In the Canadian context, these initiatives utilize incentive payments to reward a physician for achieving targets (some American incentives also reward hospitals). From a policy perspective, pay-for-performance is part of the broader framework of patient-focused funding, a hospital funding concept adapted from the Standing Committee of the Hospitals of the European Union — (it can be argued that universal Medicare was intended to be the ultimate example of patient-focused funding).

Pay-for-performance strategies have been part of physician compensation, in some form or another, since the inception of universal Medicare. Recently, however, there has been movement from implicit performance payments to explicit programs as part of a realignment of payment incentives in health care.

An ideological conundrum is whether pay-for-performance programs result in incremental payments to physicians for providing services that should be considered integral expectations of being a competent physician. The underlying issue is whether the “performance” that is being rewarded financially is extraordinary or expected. This distinction is an important ideological one for the funder of care. The ideological debate notwithstanding, there have been a plethora of initiatives to assess the impact of pay-for-performance in achieving higher quality and more efficient health care.

The origins of pay-for-performance, targeting quality and/or efficiency benchmarks, identify, largely, with processes of care in prevention screening and chronic disease management. In the
United States, private managed care plans and the Centers for Medicare and Medicaid Services (CMS) have been the leaders in adopting pay-for-performance programs. The largest managed care plan with substantial experience in pay-for-performance is the California Pay-for-performance program, integrated, in 2000, by the Integrated Healthcare Association. By 2005, more than 100 such programs were operational in the United States, including those sponsored by CMS, with performance measures generally weighted by three categories:

- Clinical, such as immunization and screening programs
- Patient experience, such as timely access, communication, and coordination of care
- Information technology, such as electronic support for clinical decision-making

In the United Kingdom—the jurisdiction having a substantial experience with pay-for-performance initiatives, as measured by number of physicians and population covered—the roots of pay-for-performance reside in the 1990 General Practice contract, with the introduction of target payments for immunization and cervical cancer screening. The massive, 2004 expansion to the program incorporated a Quality and Outcomes Framework with financial rewards for achievement against a scorecard of 146 indicators within four categories:

- Clinical, such as coronary heart disease, diabetes, cancer, and mental health
- Organizational, such as record keeping, education, and training
- Patient experience, such as satisfaction surveys and visit times
- Additional services, such as cervical screening, child health surveillance, maternity services, and contraceptive services

Experience in Canada has been more limited, to date, with Ontario and British Columbia having the most relevant experience, although incentives were prominent in the 2008 agreement in Nova Scotia. The many primary care reform models in Ontario include additional payments for achieving specified thresholds of preventive care. In British Columbia, the Full Service Family Practice Incentive Program includes an obstetrical care bonus and an expansion of payments introduced, in 2003, for monitoring patients with diabetes, congestive heart failure, and hypertension. More recently, the provincial Primary Health Care Charter set out seven priorities for primary care:

- Access to primary health care
- Access to primary maternity care
- Chronic disease prevention
- Management of chronic diseases
- Coordination and management of co-morbidities
• Care for the frail elderly
• End-of-life care

These seven priorities potentially are all amenable to pay-for-performance approaches; although, early experience with pay-for-performance indicates that it will be more challenging to realign payment incentives beyond clinical process and administrative quality measures to include complex care and care coordination; hence, limiting its potential to targeted behaviours and outcomes.

3.4.1 Evolution

As population health supersedes individual encounters in measuring outputs and outcomes of health care delivery, it is likely that pay-for-performance programs will assume greater prominence. These programs could measure individuals or groups, incorporating risk-adjusting methodologies, within a framework that incorporates the government vision for care. Such financial incentives should consider performance that is based on internal-to-practice considerations, with the end result always being improved outcomes. The measurement methodology will need to be sensitive to changes in performance so that the rewards are not skewed in favour of those practices where the baseline of performance is already high. Nonetheless, articulated goals should be consonant with gains to population health indices.

Experimentation with pay-for-performance initiatives in the two jurisdictions with the most accumulated experience—the United Kingdom and the United States—offers useful comparisons, insights, and lessons concerning the potential utility of these interventions in shaping physician behaviour and in achieving improved health outcomes and cost efficiencies within two different funding models of health care. In the United Kingdom, pay-for-performance was implemented in primary care settings in the government-funded National Health Service (NHS), and in the United states, under a managed care, market approach to health care funding.

Prior to its implementation in 2004 in the United Kingdom, the NHS had embarked on a 10-year program of structural change to enhance system quality. This included clinical guideline development and dissemination for major diseases, establishing chronic disease clinics, clinical governance initiatives in physician offices, practice audits, provider-performance feedback, and increasing reliance on the electronic medical record. As part of the pay-for-performance initiative, the NHS funded practices for investment in IT, and the hiring of additional clinical (nurse) and administrative staff.

Targets were set for physician performance under the initiative; although, a pre-intervention measure of physician performance was not undertaken. After one year, overall performance targets were met or exceeded across a broad spectrum of practices, adding an average overall increase of 25 percent (40,200 US$) to individual physician incomes.
There is a general consensus that the United Kingdom likely paid too much for the resulting performance enhancements, and that the quality of care provision at the baseline likely was higher than it was deemed to have been. As well, it was not possible to attribute fully the high level of measured performance to the pay-for-performance incentive. The prior ten-year structural enhancements and the non-incentive funding for IT and additional clinic staff were significant contributing factors, as well.

Underlying pay-for-performance initiatives in the United States, in addition to quality improvement objectives, is the expectation of actual savings in the cost of health care delivery. The accumulated wisdom in the United States is that the cost of pay-for-performance tends to be additive, without, necessarily, improving quality or efficiency or appropriateness (Epstein, 2007). At a minimum, current proponents aim for cost neutrality and the extraction of greater value for the money being spent. However, overall system cost neutrality can be achieved only if payers are prepared to pay less to providers who under-perform, as the flip side to paying a premium for performance enhancement. A recently proposed CMS initiative indicates the willingness of US funders to adopt the punitive route.

Experiments in the United States with pay-for-performance have demonstrated modest successes, and, where they have not, speculation is that better results might have been achieved with higher incentives. It has been suggested “the CMS may have much to gain from recognizing that pay-for-performance is fundamentally a social experiment likely to have only modest incremental value” (Epstein, 2007). The United Kingdom experience demonstrates the success of using a substantial incentive while highlighting the risk of paying too much for the resulting gain.

The accumulated experience suggests other generalities, as well. Pay-for-performance is more readily adaptable to clinical domains where there is sufficient evidence to support meaningful process and outcomes measures. Correspondingly, there are certain clinical domains for which it is more difficult to derive applicable process and outcomes measures upon which to reward performance—where there is a gap in the evidence base or in guideline development; or where patient preference in treatment options is a warranted divergence from the clinical guideline, as for highly invasive surgical interventions. In addition to the development of applicable measurement parameters, complex care and care coordination pose significant challenges for pay-for-performance programs, in that care is shared across multiple providers, necessitating the development of methodologies for apportioning any incentive. These challenges—development of measurement parameters and apportioning incentives across multiple providers—suggest that pay-for-performance may not yield the desired health care quality returns. Paying for care episodes and care coordination is a suggested alternative to pay-for-performance in these instances (Davis, 2007).

Practice size and characteristics also have a bearing on the likely success of pay-for-performance interventions. Group practices, practices with linkages to other practices and institutions and to patients, and IT facilitation of knowledge transfer and communication are all
associated with better outcomes under pay-for-performance (Pham et al., 2007). This was reiterated at the 2006 NCQA Policy Conference.

At present, the limited success of pay-for-performance interventions, their considerable associated cost, and apparent limited application give rise to legitimate questions concerning their role in any health system reform that is aimed at quality and efficiency enhancements. At a minimum, it represents a strong argument for extracting greater value and accountability from the existing system—for example, making existing fee-for-service payments more accurately reflect cost structures and improving relativity, removing any inadvertent incentives to favour certain services, adding payments for care coordination and longitudinal care, and fostering the development of integrated care networks.

Lessons from the United Kingdom point to additional opportunities to extract greater value from the existing system through identifying gaps in the evidence base for clinical guidelines for major diseases, the development and widespread dissemination of such guidelines, and the development of chronic disease clinics to enhance care coordination and longitudinal care. These interventions would seem to be prerequisites, as well, to implementing pay-for-performance initiatives.

3.5 Patient Expectations

Canadians are accustomed to the standards and quality that characterize our health system. All developed countries are facing the same cost and sustainability challenge as population’s age and grow. We expect rapid access to high quality service regardless of circumstance. Government policy on access to health services sets standards and has made many explicit decisions around access. These policies directly impact physician workforce planning assumptions. Patient expectations can be both reasonable and unreasonable, knowing the difference is integral to clinical service planning.

The Winnipeg Regional Health Authority examined the question more directly through Community Health Councils and elicited specific responses to what were “reasonable” and “unreasonable” expectations.

Unreasonable expectations included:

- That the health care system can fix everyone and that people do not have any responsibility for their own well-being
- That funding for health care is infinite
- That people should be able to access health care for any issue at any time
- That people with non-urgent medical issues receive immediate care at emergency departments

Reasonable expectations included:
• The right to primary care
• Fair and equitable access to health care for all
• Timely access to primary care, specialists, diagnostics, and treatment
• Respectful and compassionate care
• Electronic medical records
• More resources provided for disease prevention and health promotion
• The use of most current technology
• That health care is provided in the community, as much as possible

Ipsos Canada, Decima Research, Environics Research Group, Innovative Research Group Inc., Ekos Research Associates Inc., Pollara Inc., and The Strategic Counsel, among others, tend to ask the question in terms of “expectations,” rather than reasonableness. Their surveys and results comprised the primary research base for a high level report to the Health Council of Canada, which summarized public perceptions and expectations as follows:

• Overall ratings of the health care system have improved slightly in recent years; but, a large majority of Canadians still believe that the system is unsustainable and urgently in need of substantive change
• Federal and provincial/territorial governments receive relatively low ratings for their performance on health care, though Canadians have slightly more confidence in their provincial governments
• There is overwhelming support for increased spending on health care, from both levels of government; there is a strong sense that the federal government should transfer more money to the provinces/territories, but not without conditions – there is also strong support for national standards in health care provision
• The highest policy priority for Canadians is timely access to care; quality is also a major concern; both are believed to have declined in recent years, and – without fundamental change to the system – are seen as likely to decline more in the future
• There is increasing attention to private sector provision of health care services, in large part a response to expectations about the quality of public services; most people interested in private health care view this as an addition to, rather than a replacement for, the public health care system; and, support for private care does not preclude support for additional public funding – many support both
• There is strong support for additional home care services, and moderate support for a national pharmacare program
It can be argued, reasonably, that the Winnipeg Regional Health Authority asked the more appropriate question than did the national pollsters, if one assumes resources (local, provincial, and national) are finite.

Most legacy systems in health care may be characterized as incoherent aggregations of practitioners and facilities providing care to those who seek it, not necessarily those who need it. Few jurisdictions, if any, have addressed the challenge of providing an infrastructure with timely processes that converge to provide universal access. The absent piece is usually a health information infrastructure to acquire intelligence. An intelligent health care system continuously incorporates new knowledge and efficiencies, and identifies the optimal points for intervention. This requires a clear understanding and analysis of both population health and providers integrated in a collaborative system and working to top-of-license.

3.6 Key Findings Summary

<table>
<thead>
<tr>
<th></th>
<th>Summary</th>
</tr>
</thead>
<tbody>
<tr>
<td>3</td>
<td>National Perspectives</td>
</tr>
<tr>
<td>3.1</td>
<td>All jurisdictions in Canada continue to evolve quality frameworks for the delivery of health and social services.</td>
</tr>
<tr>
<td>3.2</td>
<td>Explicitly integrating quality to clinical services planning is both complex and essential to a patient-centred health delivery system. Applying workforce and material resources must be matched with a delivery system to permit appropriate and timely access to needed services.</td>
</tr>
<tr>
<td>3.3</td>
<td>The granular elements necessary to expand quality perspectives are clinical relevance, professional relevance, and best practices.</td>
</tr>
<tr>
<td>3.4</td>
<td>Effective productivity in health and social services is an increase in outputs per unit of input where there is evidence of improved quality of care and improved health outcomes that contribute to achieving health system goals.</td>
</tr>
<tr>
<td>3.5</td>
<td>Generalism has fallen behind, across specialties, while sub-specialization has continued to rise; in the current state, this will have negative implications to recruitment and retention of physicians to rural and remote areas.</td>
</tr>
<tr>
<td>3.6</td>
<td>Central to primary care reform is collaborative, or team-based integrative care, with multidisciplinary teams of providers, working at “top-of-license” within a non-hierarchical model. These teams can include any mixture of nurses (including advanced care and nurse practitioners, registered nurses, and licensed practical nurses), pharmacists, physiotherapists, dietitians, physicians, mental health counselors, educators, and others.</td>
</tr>
<tr>
<td>3.7</td>
<td>Early experience with pay-for-performance indicates that it will be more challenging to realign payment incentives beyond clinical process and administrative quality measures to include complex care and care coordination; the risks of pay-for-performance is the absence of incented desired behaviour and the incenting of unintended behaviour.</td>
</tr>
<tr>
<td>3.8</td>
<td>As population health supersedes individual encounters in measuring outputs and outcomes of health care delivery, it is likely that pay-for-performance programs will assume greater prominence.</td>
</tr>
<tr>
<td>3.9</td>
<td>Most legacy systems in health care may be characterized as incoherent aggregations of practitioners and facilities providing care to those who seek it, not necessarily those who need it.</td>
</tr>
</tbody>
</table>
4.1 Geographic Profiles

Exhibit 04-01
Map of Yukon Territory
There is no regional structure for the delivery of health and social services in Yukon Territory. The population is primarily concentrated in distinct communities; eighteen communities have been identified in population estimates for the territory. Fourteen of these have health centres and constitute the study cohort. The largest community is Whitehorse, the capital, with over three quarters (76%) of the territorial population. Dawson City and Watson Lake are the next largest communities, with 5% and 4% of the population, respectively. Fifteen communities comprise the remaining 14% of the population.

4.1.1 Postal Codes

The availability of population data is a key component for the analyses in preparation of the CSP. While providing a snapshot of recent characteristics, fundamentally, the population data provide the means to understanding how the population has changed in the past and is expected to change in the future. To a large degree, the geography associated with the population data governs how the analyses were structured. Other data were made to conform to the geography used for the population estimates and projections, where possible.

Exhibit 04-02 provides the Postal Codes and Forward Sortation Areas (FSAs) assigned by Canada Post for the Yukon and how they map to communities in the territory. In places where data are presented at the postal code level, these were mapped to coincide with the communities identified in the population data, as an analytic proxy.

Exhibit 04-02
Postal Codes and Forward Sortation Areas of Yukon Territory

<table>
<thead>
<tr>
<th>Postal Codes and Forward Sortation Areas of Yukon Territory</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Urban</strong></td>
</tr>
</tbody>
</table>
| **Southeastern Yukon** | **Y0A** | 1B0: Teslin  
| | | 1C0: Watson Lake |
| **Central Yukon** | **YOB** | 1A0: Beaver Creek  
| | | 1B0: Carcross  
| | | 1C0: Carmacks  
| | | 1G0: Dawson  
| | | 1H0: Destruction Bay  
| | | 1J0: Elsa  
| | | 1K0: Faro  
| | | 1L0: Haines Junction  
| | | 1M0: Mayo  
| | | 1N0: Old Crow  
| | | 1P0: Pelly Crossing  
| | | 1S0: Ross River  
| | | 1T0: Tagish |
4.1.1 Census Subdivisions

Data from Statistics Canada are presented at the Census Subdivision level in Exhibit 04-03. The communities were reviewed to ensure consistency with communities, as identified by the Yukon Bureau of Statistics (YBS). It was often the case that Statistics Canada information formed the basis of YBS data and the two conformed seamlessly.

**Exhibit 04-03**
Census Subdivisions of Yukon Territory

<table>
<thead>
<tr>
<th>Postal Codes and Forward Sortation Areas of Yukon Territory</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Urban</strong></td>
</tr>
<tr>
<td>-----------</td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Yukon Population (2011 Census)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>CSD Name</strong></td>
</tr>
<tr>
<td>----------------</td>
</tr>
<tr>
<td>Beaver Creek</td>
</tr>
<tr>
<td>Burwash Landing</td>
</tr>
<tr>
<td>Carcross</td>
</tr>
<tr>
<td>Carcross</td>
</tr>
<tr>
<td>Carmacks</td>
</tr>
<tr>
<td>Champagne Landing</td>
</tr>
<tr>
<td>Dawson</td>
</tr>
<tr>
<td>Destruction Bay</td>
</tr>
<tr>
<td>Faro</td>
</tr>
<tr>
<td>Haines Junction</td>
</tr>
<tr>
<td>Ibex Valley</td>
</tr>
<tr>
<td>Johnsons Crossing</td>
</tr>
<tr>
<td>Keno Hill</td>
</tr>
<tr>
<td>Kloo Lake</td>
</tr>
<tr>
<td>Klukshu</td>
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</tbody>
</table>
## Yukon Population (2011 Census)

<table>
<thead>
<tr>
<th>CSD Name</th>
<th>CSD Type</th>
<th>Population</th>
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</thead>
<tbody>
<tr>
<td>Lake Laberge</td>
<td>Self-government</td>
<td>20</td>
</tr>
<tr>
<td>Macpherson-Grizzly Valley</td>
<td>Unorganized</td>
<td>1,072</td>
</tr>
<tr>
<td>Marsh Lake</td>
<td>Unorganized</td>
<td>619</td>
</tr>
<tr>
<td>Mayo</td>
<td>Village</td>
<td>226</td>
</tr>
<tr>
<td>Moosehide Creek</td>
<td>Self-government</td>
<td>0</td>
</tr>
<tr>
<td>Mt. Lorne</td>
<td>Hamlet</td>
<td>408</td>
</tr>
<tr>
<td>Old Crow</td>
<td>Settlement</td>
<td>245</td>
</tr>
<tr>
<td>Pelly Crossing</td>
<td>Settlement</td>
<td>336</td>
</tr>
<tr>
<td>Ross River</td>
<td>Settlement</td>
<td>352</td>
</tr>
<tr>
<td>Stewart Crossing</td>
<td>Settlement</td>
<td>25</td>
</tr>
<tr>
<td>Swift River</td>
<td>Settlement</td>
<td>0</td>
</tr>
<tr>
<td>Tagish</td>
<td>Settlement</td>
<td>391</td>
</tr>
<tr>
<td>Teslin</td>
<td>Teslin land</td>
<td>0</td>
</tr>
<tr>
<td>Teslin</td>
<td>Village</td>
<td>122</td>
</tr>
<tr>
<td>Teslin Post</td>
<td>Self-government</td>
<td>138</td>
</tr>
<tr>
<td>Two and One-Half Mile Village</td>
<td>Settlement</td>
<td>0</td>
</tr>
<tr>
<td>Two Mile Village</td>
<td>Settlement</td>
<td>10</td>
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<tr>
<td>Upper Liard</td>
<td>Settlement</td>
<td>132</td>
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<tr>
<td>Watson Lake</td>
<td>Town</td>
<td>802</td>
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<tr>
<td>Whitehorse</td>
<td>City</td>
<td>23,276</td>
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<td>Whitehorse, Unorganized</td>
<td>Unorganized</td>
<td>287</td>
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<tr>
<td>Yukon, Unorganized</td>
<td>Unorganized</td>
<td>1,688</td>
</tr>
<tr>
<td>TOTAL</td>
<td></td>
<td>33,897</td>
</tr>
</tbody>
</table>
4.2 Socio-Economic Status

Socio-economic data are available from the Yukon Socio-Economic Web Portal and the website of Statistics Canada. The Yukon Web Portal contains a range of reports presenting data from the territorial level and, in some instances, at the community level.


Following are highlights taken from that report:

- Employment fell from 2011 to 2012 (as well, unemployment fell in 2013)\(^\text{18}\)
- 39% of working Yukoners were public employees in 2012
- 25% of private sector workers were self-employed
- Weekly earnings increased
- The average annual inflation rate dipped in 2012, but was higher than the national average
- In October 2012, the Community Spatial Price Index (all items) ranged from 202.0 in Old Crow to 110.6 in Carmacks (Whitehorse = 100) (Compendium 7)
- The average price of regular gasoline in Whitehorse rose 3.3% in 2012 over 2011
- Rents have increased steadily over ten years (28.7%), matching a general decline in the vacancy rate over the period
- The total production value of gold in Yukon rose over 400% from 2003 to 2012
- The total volume of roundwood harvested has remained stable since 2009
- Retail trade has risen steadily since 2003 (over 59%, or $250 million), and wholesale trade has increased by $79 million (110% over the same period)
- The volume of liquor sales rose from 4.3 million to 5.0 million litres from 2003 to 2012
- GDP rose 3.4% between 2011 and 2012 (6.1% for goods-producing and 2.1% for service-producing industries) based on preliminary estimates, following a decline in growth rates since 2008
- Travelers entering Yukon by land through Canada Customs has increased steadily since 2003, reaching more that 400,000 in 2012

\(^{18}\) A YBS Yukon Employment bulletin, reported an unemployment rate of 5.4% in November 2013, and Yukon has one of the highest participation rates and one of the highest employment rates in Canada
• Vehicle registrations continue to increase

Immigration and ethnocultural diversity results from the 2011 National Household Survey (NHS) indicate that 88% of Yukon’s population were Canadian-born, 11% were foreign-born, and 1% were non-permanent residents.

In September 2013, the Department of Economic Development published the Yukon Economic Development Outlook report (http://economics.gov.yk.ca/). The following short term outlook was forecast for 2013 and 2014:

Forecast for 2013

• Despite difficulties in the mining sector, the current expectation is for Yukon’s GDP to post growth for the tenth consecutive year in 2013, with real growth expected to be 0.9 per cent

• Yukon’s population is forecast to continue to grow in 2013 and average almost 36,500

• Yukon’s labour force is expected to remain at the record average annual high of 20,400 in 2013, while a decline in employment is expected to contribute to a slight increase in the unemployment rate

• Weaker mineral prices are expected to contribute to lower exploration spending in 2013, falling to about $60 million, which would represent the lowest level of spending since the mid-2000s

• Although prices for a variety of metals are expected to be lower in 2013, an expected increase in the level of mineral production should see the value of mineral production remain high and be within the $450-$500 million range

• Recent weakness in commodity prices and the associated difficulty obtaining financing for project development have resulted in delays in mine project development in 2013, which is reflected in the lower development expenditures forecast of $80 million

• Expectations for tourism in 2013 are for 328,000 border crossings, which represents visitation growth of 2.1 %

• The value of building permits in Yukon is expected to decline to about $80 million, with declines expected in both residential and non-residential permits

• The value of retail sales in 2013 is expected to be stable, with the estimated $672 million recorded in 2012

Forecast for 2014

• Higher mineral production and expenditures related to development of two new mines are expected to contribute to real GDP growth of 8.8 per cent in 2014
Territorial Profiles

- Yukon’s average annual population is expected to exceed 37,000, with the population of Whitehorse expected to exceed 28,000 in 2014
- Yukon’s average annual labour force is forecast to increase to a new high of 20,800 in 2014, while Yukon’s average annual employment is expected to increase to a new record of 19,500
- Exploration spending is forecast to increase marginally in 2014 to about $75 million
- Benefitting from an expectation of higher production from all three current mining operations, and anticipation of slightly higher mineral prices, the value of mineral production is forecast to reach $550 million in 2014
- Mine development expenditures are expected to total upwards of $100 million in 2014
- Annual border crossings are expected to grow by 1.5 per cent in 2014 to 333,000
- The value of building permits is expected to grow to $125 million in 2014, with anticipated permitting related to the F.H. Collins School replacement in Whitehorse, residential activity related to the Whistlebend subdivision, and new mine development all contributing to the annual total
- The expectation is for retail sales to return to growth in 2014, with the forecast calling for retail sales to total $691 million

The unemployment rate in Yukon (5.4% among those 15 years and older in 2013) is favourable relative other parts of Canada. There is still an issue with respect to youth unemployment (among those 15-24 years, the rate was 8% in 2013). The influence of Whitehorse masks higher unemployment in other communities where the rate was 10.3% in 2013 for those 15 years and older (Compendium 8).

Low income is known to be a factor in the health status of individuals. Compendium 9 presents data from Statistics Canada about the population in Yukon that is considered to be low income. A higher proportion of lone parent families and individuals are considered to be low income in relation to couple families. Low income families and individuals are more prevalent outside of Whitehorse.

4.3 Population Profiles

The population of Yukon Territory, as of June 2013, was 35,526, an increase of 664 (1.9%) over one year (35,862 in June 2012). Approximately 28,000 live in Whitehorse and approximately 8,600 of the territorial population live in small, remote communities with limited services. The two next largest communities are Dawson City and Watson Lake, while the remaining 14 communities range in population size from approximately 40 to 900 people. It is noted that the YBS data vary from the Statistics Canada; such discrepancies are not

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Footnotes:


Health Intelligence Inc. and associates
unusual. It is also noted that community visits and interviews generated even further differences. For statistical integrity, the YBS data are used, as provided in Exhibit 04-04.

### Exhibit 04-04
Community Populations

<table>
<thead>
<tr>
<th>Community</th>
<th>Population</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Beaver Creek</td>
<td>114</td>
<td>0.3</td>
</tr>
<tr>
<td>Burwash Landing</td>
<td>96</td>
<td>0.3</td>
</tr>
<tr>
<td>Carcross</td>
<td>429</td>
<td>1.2</td>
</tr>
<tr>
<td>Carmacks</td>
<td>510</td>
<td>1.4</td>
</tr>
<tr>
<td>Dawson City</td>
<td>1,987</td>
<td>5.4</td>
</tr>
<tr>
<td>Destruction Bay</td>
<td>44</td>
<td>0.1</td>
</tr>
<tr>
<td>Faro</td>
<td>392</td>
<td>1.1</td>
</tr>
<tr>
<td>Haines Junction</td>
<td>855</td>
<td>2.3</td>
</tr>
<tr>
<td>Marsh Lake</td>
<td>535</td>
<td>1.5</td>
</tr>
<tr>
<td>Mayo</td>
<td>483</td>
<td>1.3</td>
</tr>
<tr>
<td>Old Crow</td>
<td>250</td>
<td>0.7</td>
</tr>
<tr>
<td>Pelly Crossing</td>
<td>348</td>
<td>1.0</td>
</tr>
<tr>
<td>Ross River</td>
<td>363</td>
<td>1.0</td>
</tr>
<tr>
<td>Tagish</td>
<td>242</td>
<td>0.7</td>
</tr>
<tr>
<td>Teslin</td>
<td>448</td>
<td>1.2</td>
</tr>
<tr>
<td>Watson Lake</td>
<td>1,474</td>
<td>4.0</td>
</tr>
<tr>
<td>Whitehorse</td>
<td>27,889</td>
<td>76.4</td>
</tr>
<tr>
<td>Other</td>
<td>69</td>
<td>0.2</td>
</tr>
<tr>
<td>Yukon</td>
<td>36,526</td>
<td>100.0</td>
</tr>
</tbody>
</table>

1 Other includes communities such as Champagne, Elsa, Johnson’s Crossing, Keno City, Stewart Crossing & Swift River.

Comparing June 2003 to June 2013, Yukon’s total population increased by 6,550, or 21.8%; the population of Whitehorse has increased by 5,648, or 25.4%; Dawson City has increased by 222, or 12.6%; and Watson Lake has decreased by 71, or 4.6%.

**June 2013** figures show:

- Yukon’s population consisted of 18,624 males (51.0%) and 17,902 females (49.0%), a modest change from June 2003, where males comprised 49.7% of Yukon’s population, and females 50.3%
Territorial Profiles

- Almost sixteen percent (15.8%) of Yukon’s population was under 15 years of age, 74.0% was between 15 and 64 years, and 10.1% was 65 years of age or older. In June 2003, 19.9% of Yukon’s population was under 15 years of age, 73.5% was between 15 and 64 years, and 6.5% was 65 years and over, reflecting an overall younger population in the earlier time period.

The 2011 Census results indicated that:

- Yukon Territory’s population growth between 2006 and 2011 was 11.6%, the highest of any province or territory;
- Approximately 80% of census families were couple-families;
- Of the population aged 15 and older, 54.4% were either married or in common law partnership;
- 49.4% of couple families had children;
- Private dwellings increased by 12% from 2006, showing the highest growth among provinces and territories; and,
- The average household size was 2.4 persons, compared to 2.5 in Canada.

The Yukon Bureau of Statistics prepares population projections for the territory. Projections by age-gender cohort have been created for 2012 through 2037. The data are provided at the community level. For this analysis, the focus will be on a ten-year horizon, from 2014 to 2024.

The process of preparing the projections has been described as follows:\textsuperscript{20}:

The projections were prepared based on the June 2012 population, and observed population changes over the previous 10 years, 5 years, and 2 years (referred to respectively, as “Ten-year trends”, “Five-year trends”, and “Two-year trends”). The population projections are standard life-table projections, and are based on births, deaths, in-migrations and out-migrations. The parameters of the model are determined by observed population trends in the past. The projections start from the population in June 2012.

The projections carry the following caveats:

i. The Yukon’s population growth is determined more by migration than by natural growth. Migration in the Yukon has historically been cyclical and correlated with business cycles and mineral prices. The population projections, on the other hand, assume that migration and natural growth is constant, which is counterfactual. In the past, it was recommended that the projected population in 10 years be taken as more meaningful than over the short term, since over the long run, the ups and downs of the Yukon economy will likely cancel out.

\textsuperscript{20} Sebastien Markley, Socio-Economic Statistician, Yukon Bureau of Statistics
The model is not forward-looking. The model does not incorporate any information on any possible future shocks to population growth (projected mine developments or possible drops in future mineral exploration, for example). Therefore, the projections are invalid if there is good reason to believe that the population change over the next few years will not resemble the trends observed in the past few years.

The model is not actually adapted to the community level. Community-level estimates have been included because this added detail was requested. There are no reliable measures of natural growth or migration within individual communities, so Yukon-wide parameters have been applied to each individual community’s population to obtain projections of community-specific populations. This means that differences in each community’s growth as projected by the model only reflect differences between each community’s initial population breakdown, and do not reflect actual differences in how these communities evolve. In the past, for example, Dawson City’s population grew faster than Watson Lake’s which was due to greater net-migration to Dawson than to Watson Lake. If these dynamics hold up, the projections may end up over-estimating Watson Lake’s growth. For these reasons, extra caution should be exercised when looking at community-level projections.

Some of these shortcomings will be addressed in the next year. There will be an attempt to incorporate economic analyses in the projection model in order to form a more realistic basis for the assumptions about future migration.

Yukon’s population declined steadily between 1997 and 2001, and then fluctuated around 30,000 between 2001 and 2003. Since 2004, the population has been increasing at a steady pace. Successive new highs within most quarters have been set since the second half of 2008, the most recent being May 2013 at 36,816.

The projections across the three scenarios (10-year, 5-year and 2-year) suggest the possibility of a broad range of growth between 2014 and 2024, ranging from 13.7% to 22.8%. The ten-year population projections and percentage changes are shown in Exhibit 04-05, noting the caveat about community level figures cited, in item 3 above.
<table>
<thead>
<tr>
<th>Community</th>
<th>Projected Population</th>
<th>% Change from 2014</th>
<th>Scenario</th>
<th>10-Year</th>
<th>5-Year</th>
<th>2-Year</th>
<th>10-Year</th>
<th>5-Year</th>
<th>2-Year</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>2014</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>01. Beaver Creek</td>
<td>114</td>
<td>115</td>
<td></td>
<td>—</td>
<td></td>
<td></td>
<td>—</td>
<td></td>
<td></td>
</tr>
<tr>
<td>02. Burwash Landing</td>
<td>98</td>
<td>98</td>
<td></td>
<td>—</td>
<td></td>
<td></td>
<td>—</td>
<td></td>
<td></td>
</tr>
<tr>
<td>03. Carcross</td>
<td>441</td>
<td>443</td>
<td></td>
<td>—</td>
<td></td>
<td></td>
<td>—</td>
<td></td>
<td></td>
</tr>
<tr>
<td>04. Carmacks</td>
<td>534</td>
<td>537</td>
<td></td>
<td>—</td>
<td></td>
<td></td>
<td>—</td>
<td></td>
<td></td>
</tr>
<tr>
<td>05. Dawson City</td>
<td>2,003</td>
<td>2,024</td>
<td></td>
<td>1,992</td>
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<td></td>
<td>—</td>
<td></td>
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</tr>
<tr>
<td>06. Destruction Bay</td>
<td>52</td>
<td>53</td>
<td></td>
<td>—</td>
<td></td>
<td></td>
<td>—</td>
<td></td>
<td></td>
</tr>
<tr>
<td>07. Elsa</td>
<td>0</td>
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<td></td>
<td>0</td>
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<td>—</td>
<td></td>
<td></td>
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<tr>
<td>08. Faro</td>
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<td>386</td>
<td></td>
<td>381</td>
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<td>—</td>
<td></td>
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<td>09. Haines Junction</td>
<td>845</td>
<td>852</td>
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<td>838</td>
<td></td>
<td></td>
<td>—</td>
<td></td>
<td></td>
</tr>
<tr>
<td>10. Marsh Lake</td>
<td>525</td>
<td>532</td>
<td></td>
<td>524</td>
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<tr>
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<tr>
<td>12. Old Crow</td>
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<tr>
<td>13. Pelly Crossing</td>
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<tr>
<td>14. Ross River</td>
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<td>28,149</td>
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<tr>
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## Population Projections

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### Scenario 2024

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</table>
Expected changes over 10 years (2014 to 2024) by age-gender cohort are presented in Exhibit 04-06. Results have been present for the Yukon as a whole, due to sparse populations at the community level. Consistent with the general trend of an aging population, those 65 years and older are expected to increase substantially over the next ten years.
## Population Projections by Age-Gender Cohort

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<th>Demographics</th>
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<td>65-69</td>
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<td>75-79</td>
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<td>80-84</td>
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<tr>
<td>Total</td>
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</table>
Exhibit 04-07 illustrates the growth of those over 65 years as a proportion of the population from 11% in 2014 to 17% by 2024. Over the same period, those in the 15-29 year age group are declining by about four percentage points.
4.4 Vital Statistics

Vital Statistics provide a picture of the life cycle drivers of population: births, marriages and deaths. Data were provided by the DHSS for the period 2007 through 2013.

Compendium 10 represents a profile of births over that period. There does not appear to be a consistent pattern of births over the seven years, although there has been a drop in each of the last two years. Only 1% of births were under 35 weeks gestation during the seven year period and over 80% fell between 38 and 41 weeks. The birth weight of 96% of infants was over 2.5 kg.

There were a consistent number of marriages over the seven years from 2007 through 2013, in the neighbourhood of 150 per year (Compendium 11). There appears to be a very modest increase in deaths over the same period. The deaths exhibited the following traits:

- 14% of deaths were autopsied
- 29% involved the coroner
- 8% were considered accidental
- 28% were from heart related causes
- 34% were cancer related
- 9% involved alcohol
- less than 2% were homicides

The mortality rate in Yukon Territory is high relative to the national average. From 2000 to 2009, the rate was consistently higher in Yukon Territory (difference ranging from 63 to 280 deaths per 100,000 population), where the national average was between 515 and 616. (Compendium 12).

4.5 Migration

Migration is the main driver of population change in Yukon Territory. Migration in Yukon Territory has, historically, been cyclical and correlated with business cycles and mineral prices. The Yukon Bureau of Statistics (YBS) bases its approach for projecting future population levels on the strength of migration patterns.

The National Household Survey 2011 estimated that 11.3% of the Yukon population are immigrants, up marginally from the 2006 Census (10.0%) and the 2001 Census (10.6%).

4.6 Community Profiles

Information on First Nations communities is available at (http://www.eco.gov.yk.ca/788.html).
Yukon Territory is a vast, wilderness territory of over 483,450 square kilometres. The majority of Yukoners live in the capital city of Whitehorse. Dawson City and Watson Lake are the next largest communities, with the rest of the population situated in small villages and hamlets throughout the territory. The following are brief profiles of the communities in Yukon Territory. The cohort communities for this study are those with a Health Centre, tabulated and described, as follows:

### Exhibit 04-09
Yukon Territory Community Profiles

<table>
<thead>
<tr>
<th>Community</th>
<th>Descriptor</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Beaver Creek</strong></td>
<td>Beaver Creek is the westernmost community in Canada, located on the Alaska Highway just a few kilometers from the Alaska border. Home to the White River First Nation, the population of Beaver Creek is approximately 114.</td>
</tr>
<tr>
<td><strong>Carcross</strong></td>
<td>Carcross is located south of Whitehorse and north of Skagway, Alaska, on Lake Bennett. Tagish, the smaller of the two communities, is about 30 kilometres east of Carcross. The area was a stopover and supply centre during the Klondike gold rush. Carcross is home to the Carcross/Tagish First Nation. Carcross was traditionally a “Caribou Crossing,” which is how the community got its name. Approximately 429 people live in Carcross today.</td>
</tr>
<tr>
<td>Community</td>
<td>Descriptor</td>
</tr>
<tr>
<td>-----------</td>
<td>------------</td>
</tr>
<tr>
<td>Carmacks</td>
<td>Carmacks is a highway community located between Whitehorse and Dawson City and on the Klondike Highway. Located on the Yukon River, the community is named for George Carmack, one of the discoverers of gold in the Klondike. Carmacks is home to the Little Salmon/ Carmacks First Nation. Approximately 510 people live there.</td>
</tr>
<tr>
<td>Dawson City</td>
<td>Dawson City is centrally located in the territory, about midway between Yukon Territory’s southern border and the Beaufort Sea in the north, at the confluence of the Yukon and Klondike rivers. Laterally, it is situated toward the western side of the territory, nearer to the border with Alaska. Dawson City is 532 km from Whitehorse along the Klondike Highway, with a driving time of nearly 8 hours. Dawson City – a National Historic Site – was Yukon’s original capital city. At the peak of the gold rush in 1898, it was the largest city in western Canada with a population of 40,000. Today, the population is approximately 1,987. Tourism and placer gold mining are the town’s major economic activities. DHSS states that approximately 30% of Dawson City’s population identify as First Nations and home to the Tr’ondëk Hwëch’in, a self-governing First Nation since 1998. Tr’ondëk Hwëch’in offer a variety of services to its citizens and the community. Chief Isaac, Inc. functions as the independent economic development arm for the First Nation, with interests in commercial property rental and management, residential and commercial construction, trucking, and fire suppression services. DHSS describes the main occupations of Dawson City as tourism, mining, and public service. It has a vibrant arts community, and offers adult education, pre-employment programs, safety training, and distance education programs through Yukon College. The community also supports a number of recreational activities throughout the year. Regular flight service is offered through Air North.</td>
</tr>
<tr>
<td>Community</td>
<td>Descriptor</td>
</tr>
<tr>
<td>-------------</td>
<td>-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Destruction Bay</td>
<td>Destruction Bay is a small community on the Alaska Highway (historical mile 1083) in Canada’s Yukon on Kluane Lake. Population in 2001 according to the Census was 43. The Yukon Government’s Bureau of Statistics estimated the population at 59 in June 2005. Populated mostly by non-First Nations residents, community residents provide Yukon government services to residents in the area (school, highway maintenance), including nearby Burwash Landing and some tourism-related businesses along the Alaska Highway. The name is derived from the wind blowing down structures erected by the military during highway construction in 1942-43. The community has a one room school serving kindergarten through grade eight. Burwash Landing is located on the shores of Kluane Lake, on the Alaska Highway. The community’s major attraction is Kluane Museum of Natural History. Approximately 96 people live in Burwash Landing, which is the administrative centre of the Kluane First Nation.</td>
</tr>
<tr>
<td>Faro</td>
<td>Faro was established in 1969 to support an open-pit lead and zinc mine nearby. The mine is no longer in operation, but is being monitored in preparation for reclamation. The population of Faro has fluctuated with mining operations, but today approximately 392 people live there. It is located on the Pelly River, in the Anvil Mountains, northeast of Whitehorse on the Robert Campbell Highway.</td>
</tr>
<tr>
<td>Haines Junction</td>
<td>Haines Junction is the point of access to Kluane National Park and Reserve, making it a popular recreation destination for Yukoners and tourists alike. The village is located at the junction of the Alaska Highway and the Haines highway and is set against the spectacular backdrop of the St. Elias Mountain Range, home to Canada’s tallest peak, Mount Logan. The Champagne &amp; Ashihik First Nations operate an administrative centre in Haines Junction. Approximately 855 people live in Haines Junction today.</td>
</tr>
</tbody>
</table>
### Mayo
Mayo is a prospecting and placer mining community in central Yukon, and serves as a supply centre for the surrounding area. It is located on the Silver Trail, southeast of Dawson City on the Stewart River, and has a population of approximately 483 people. Mayo lies within the traditional territory of the First Nation of Nacho Nyak Dun.

### Old Crow
Home to the Vuntut Gwitchin First Nation, Old Crow is the only Yukon community located north of the Arctic Circle and the only community that isn’t accessible by road. The community sits on the banks of the Porcupine River and is one of the earliest sites of human habitation in North America. Approximately 250 people live in Old Crow.

### Pelly Crossing
Pelly Crossing is located between Whitehorse and Dawson City on the North Klondike Highway. Families from Yukon River settlements moved to this location in the 1950s when the highway was completed and sternwheelers ceased transport operations on the river. The Selkirk First Nation is based in Pelly Crossing. The population of the community is approximately 348.

### Ross River
Ross River is a Kaska First Nations community at the confluence of the Ross and Pelly rivers. Ross River is where the Canol road meets the Robert Campbell Highway. The Ross River Dena Council is located in the community. Approximately 363 people live there.

### Teslin
Teslin is a Tlingit community located on the narrows of Teslin Lake at the mouth of the Nisutlin River. The village is an active tourism destination and a popular fishing spot, offering guides, boats and accommodations to visitors. Teslin is located south of Whitehorse on the Alaska Highway and has a population of approximately 448. The First Nations people of Teslin belong to the Teslin Tlingit Council.
<table>
<thead>
<tr>
<th>Community</th>
<th>Descriptor</th>
</tr>
</thead>
<tbody>
<tr>
<td>Watson Lake</td>
<td>The community of Watson Lake lies at the southernmost end of Yukon Territory, near the border with British Columbia, approximately 440 km east of Whitehorse. It takes nearly six hours to traverse the distance on land by motor vehicle. Watson Lake is a key transportation hub and home to the famous signpost forest. It is in the southeastern corner of the territory, at the junction of the Alaska Highway, the Robert Campbell Highway and the Stewart-Cassiar Highway. The town of Watson Lake has an approximate population of 1,474. The community lies in the traditional territory of the Liard First Nations people. DHSS describes Watson Lake as the “gateway to the Yukon.” It’s key functions include tourism, public sector administration, transportation, communication, and distribution for logging and mining activities in the territory. DHSS notes that approximately half of the population of Watson Lake self-identify as First Nations. The department further identifies that the community lies within the traditional territory of the Liard First Nation, part of the Kaska Tribal Council, and that the community, as a whole, is comprised of the town of Watson Lake, adjoining settlements of the Liard First Nation (including Upper Liard, Two-Mile Village and Two-and-a-Half Mile Village). The community supports a number of cultural and recreational venues, as well as the usual array of amenities offered in a small community. While the town has an airport, there are currently no scheduled services offered, making connection to Whitehorse and out-of-territory destinations primarily through road travel.</td>
</tr>
</tbody>
</table>
There is a geographically vast and dispersed rural population in Yukon Territory; some of the population is located in very small communities that do not have a health centre, and include the following:

**Dalton Post**

Dalton Post or Shäwshe is a former trading post and First Nations community on the Tatshenshini River. It was on the Dalton Trail near the Haines Highway. Today, it is a prime Pacific salmon fishing spot and serves as a base for whitewater rafting expeditions on the Tatshenshini and Alsek Rivers in the Tatshenshini-Alsek Park.

**Herschel**

Herschel was a settlement on Herschel Island, serving as a whaling station, North-West Mounted Police post and Hudson’s Bay Company store. It has been long abandoned, and shoreline erosion is threatening to wipe out the remaining buildings.

<table>
<thead>
<tr>
<th>Community</th>
<th>Descriptor</th>
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<tbody>
<tr>
<td><strong>Whitehorse</strong></td>
<td>Whitehorse is Yukon’s capital city and by far its largest community. Almost 75 per cent of the territory’s population lives in Whitehorse. It is Yukon’s administrative, transportation and communications centre. Whitehorse lies in the traditional territories of Ta’an Kwach’an Council and the Kwanlin Dun First Nation, in the wide valley of the Yukon River. The population of Whitehorse is approximately 27,889. Whitehorse also known as the Wilderness City, sits on the banks of the famous Yukon River. With its magnificent landscape and vibrant lifestyle, people enjoy living here year round. A healthy economy, small town values, a safe environment in which to raise a family, and ready access to the outdoor activities, makes Whitehorse an ideal place in which to live and work. Some communities outside of the Whitehorse area are unincorporated and do not have a municipal council; they are considered a Local Advisory Area, have elected councillors and form Local Advisory Councils (LAC). LACs, supported by Yukon Department of Community Services, do not have taxing, spending or bylaw-making authority, and are strictly advisory in their role. Elections are held in concert with the regular municipal election cycle of Yukon.</td>
</tr>
<tr>
<td>Health Intelligence Inc. and associates</td>
<td>Clinical Services Plan for Yukon Territory</td>
</tr>
</tbody>
</table>
Jake’s Corner

Jake’s Corner is a spot on the road, at historical mile 866 of the Alaska Highway, at the junction with connections to the Tagish Road and the Atlin Road. There are a small number of area residents, the junction being best known for a gas station and café. The gas station has numerous examples of old machinery.

Kluksu

Kluksu’s more recent history is as a seasonal First Nations fishing community, benefitting from a large Chinook salmon run. Located near the Haines Highway, it has no permanent population. Interpretive information is provided by the Champagne and Aishihik First Nations.

Little Salmon

Little Salmon is located on the Robert Campbell Highway between Faro and Carmacks, and stretches along the lake of the same name and the Yukon River. The only non-residential establishment is the Yukon government highway maintenance camp at Drury Creek. It was formerly an important settlement of the Little Salmon/Carmacks First Nation.

Miner’s Prayer

Miner’s Prayer was settled near the Blackstone River Mining Concern, providing a retreat where the miners could indulge in billiards, alcohol and other entertainment, otherwise forbidden on the mining settlement. Today it is home to fewer than thirty permanent residents. It can be accessed by gravel road veering west from mile 57 on the Dempster Highway.

Silver City

Silver City, a historic mining town, is today the residence of only a small number of people, one household being a bed and breakfast establishment. It is located at historical mile 1053 of the Alaska Highway.

Stewart River

Stewart River is a former settlement at the juncture of the Yukon and Stewart rivers. A few buildings and cabins remain, as well as a private museum, which are threatened by erosion. It was founded as a trading post in the 1880s before the Klondike Gold Rush to serve placer miners working along the Stewart River. The Burian family was still living there in the late 1980s.

Sulphur

Sulphur or Sulphur Creek was a mining camp south-east of Dawson on a creek of the same name that flows into the Indian River. A post office was opened there on 1903 by G. W. Coffin. It was closed in July 1922. The place is mentioned in Jack London’s story, To Build a Fire.
4.7 Health Centre Profiles

1. Beaver Creek
2. Carcross
3. Carmacks
4. Dawson City
5. Destruction Bay
6. Faro
7. Haines Junction
8. Mayo
9. Old Crow
10. Pelly Crossing
11. Ross River
12. Teslin
13. Watson Lake

Whitehorse
4.7.1 Beaver Creek

The interview was conducted with the Nurse-in-Charge at Beaver Creek and three representatives of the Kluane First Nations community at Burwash Landing. The First Nations and non-First Nations populations are approximately equal. The winter population of 113 doubles or triples during summer months.

The Health Centre is served by a single nurse (one of only two single nurse centres), who works 24-hours daily with a weekend break, in theory, every three weeks. A physician visits for one day every two weeks. As well, the First Nations people benefit from separate home and community resources. Recently initiated projects include an early intervention group and community self support.

There are no home care workers resident in Beaver Creek; if there are clients who need these services, auxiliary staff are hired to support the need.

Diagnostic services include basic imaging and point-of-care blood testing, in addition to electrocardiography. Laboratory transportation, where required, occurs monthly. Unless required on a more urgent basis, the imaging reports are provided within a week of the test.

Chronic medications can be dispensed from the Health Centre; otherwise, medications are provided through the mail service. Medevac assistance is usually required once or twice during the winter and several times over the summer (most commonly for myocardial infarction, trauma, cerebrovascular accident, alcohol withdrawal, and diabetes mellitus).

Telephone support is available through the Emergency Department of Whitehorse General Hospital. Telehealth is used rarely, as it is perceived to be of limited value and requires technology management.

The largest service gap is considered to be social and support services; the closest social worker is from Haines Junction. The social workers from Haines Junction will respond to urgent matters that involve child protection (demand is currently very limited). The associated care deficits relate to poor winter access, lasting about eight months of the year.

As well, there are significant needs for a range of health and social services:

- Alcohol and drug prevention services (almost no visits for this purpose)
- Alcohol and drug after-care services; very little currently except for assistance provided through Many Rivers out of Haines Junction, visiting once every two weeks
- Child development care and services visit about once annually and do not deal with children who are not part of the school system

21 A monthly delivery truck from Whitehorse will not provide transportation for pharmaceuticals
- The 1.0 FTE nursing service is considered to be unsafe; as well, the interview suggested that there is enough work for a second nurse to be busy
- No home care nursing services
- Palliative care is available only through telehealth
- Housing in White River
- Summer drug abuse (marijuana and cocaine) compounds the problems with alcohol abuse and minimal services; the social services provided from Haines Junction do not have any impact on alcohol abuse
- Referrals for substance abuse generally go to two sites: British Columbia and Alberta; timely referrals are a significant problem as these sites require a physician referral for each patient
- EMS services are voluntary

In summary, the key issues are the absence of significant social services (and those that occur are not linked with the Health Centre), counseling and substance abuse management, and safety.

### 4.7.2 Carcross

The interview was conducted with the Nurse-in-Charge at Carcross. The service area includes the Carcross/Tagish First Nations community; this area is 45 minutes from Whitehorse and includes a commuting population, some of whom receive care in Whitehorse. The populations are 422 in Carcross and 243 in Tagish, for a total of 665. There is a disproportionately high elderly population which continues to increase at a consistent pace. Overall, this provides a significant number of high risk patients and patients who require palliation; the ability to provide palliative care at home varies with family capacity, since there is not an adequate staffing complement to provide frequent visits.

The provider profile includes 2.0 FTE nurses, a physician (one of two) visit two days monthly, seeing 20-30 patients per day. It is felt, generally, that an additional day, monthly, would be well supported, as would improved access to medical advice by telephone. The Whitehorse General Hospital Emergency Department is used liberally due to proximity; however, when seeking telephone advice from the Emergency Department during unsocial hours, the calling nurse can wait up to two hours to speak with a physician.

Regional services provides services to both Carcross and Tagish, including those by a Social Worker based in Carcross. There are 3 auxiliary home support workers and a 0.4 FTE community liaison coordinator (who is an Occupational Therapist). Visiting services include a Many Rivers counselor one day weekly, and the Child Development Centre one day monthly. Occupational services will come from Whitehorse on request; home care services span Carcross, Tagish, and Teslin, and are organized out of Whitehorse. The dietitian services out of
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Whitehorse General Hospital are accessed by telehealth; however, there are no local physiotherapy services.

Key today is the absence of ADS services; previous visits have ceased and there is no aftercare. Mental health services are provided one day weekly out of Whitehorse; this leaves significant challenges with acute crises and their aftercare. There are no local dental services.

4.7.3 Carmacks

The interview was conducted with the Nurse-in-Charge, the Social Worker, and the Health and Social Director from the Little Salmon/Carmacks First Nation. Carmacks, with a population of 500–50% of which is First Nation—is a two-hour drive from Whitehorse.

There are 2.0 FTE nurses (and a request for third due to patient complexity). There are 2.0 FTE social workers (1.0 of which is filled) and a physician visit one day, twice monthly. There are a 0.3 FTE community liaison coordinator, 0.32 FTE permanent home support worker, and two auxiliary workers. There is no continuity of care between physician visits. The Child Development Centre visits twice monthly and a Many Rivers counselor, once weekly. CATS visits twice monthly; however, mental health services are in a deficit position, being provided infrequently by a mental health nurse.

Notable is a contract position between the First Nations community and a Clinical Psychologist to provide services every two weeks.

Similar to other Health Centres, a telephone call to the Emergency Department at Whitehorse General Hospital during unsocial hours can result in a two to three hour wait.

There are significant needs for a range of health and social services:

- Transportation to Whitehorse
- Local detoxification facility
- Expanded ADS in all three dimensions
- One more nurse for programs, such as CDM, and prevention services

4.7.4 Dawson City

Interviews were conducted with eight groups of providers:

i. Community Health Centre Nurses

ii. Social Worker, CATS, Mental Health Workers

iii. Physicians

iv. McDonald Lodge and Homecare

v. Facility Manager
vi. School representatives and Occupational Therapy

vii. Disability services

viii. Trondek Hwech’in Counselor, Education Director, and Health and Social Services Case Manager

Following is a summary of issues that were identified during these meetings:

- Staffing:
  - 3.0 FTE physicians in winter and 4.0 FTE physicians in summer
    - 4.0 currently with 3.0 resident and 3.0 locum tenens
    - No visiting physicians but would like generalists
  - 1.0 FTE Public Health Nurse (clinic) - previously expanded scope
  - 0.8 FTE Clinic Nurse (clinic) - previously expanded scope
  - 6.0 FTE RN (DCCH)
  - 6.0 FTE LPN (DCCH)
  - Home care is supervised through McDonald Lodge, with 0.8 FTE registered nurse, 0.8 FTE home support worker, and auxiliary home support workers
  - 1.0 FTE Social Worker (was 2.0 until 1.0 left and replacement has not been successfully recruited)
  - 0.8 FTE mental health consultant (shared with Ross River and stretched very thin - only able to see severe and persistent mental health disorders)
    - ADS and aftercare continuing significant deficits
    - Mental health disorders continue to be highly underserviced (mental health, abuse, trauma - often all linked)
    - Many Rivers provides additional care
  - Visiting services:
    - ADS rarely; about twice annually
    - Child Development Centre
    - CATS - 6.0 outreach counselors for Yukon Territory - each works in Whitehorse and is linked to 1 or 2 rural communities - also, 1.0 intake worker and 1.0 supervisor
While many residents want CATS to be community-based, this is conceptually strong, but functionally very difficult.

- Hearing services once or twice annually
- Occupational therapy infrequently (inconsistent opinions) - note that the hospital corporation assumed responsibility— inpatient and outpatient—for this service, effective December 2013 (but not community-based services)
- Physiotherapy infrequently (inconsistent opinions) - note that the hospital corporation assumed responsibility— inpatient and outpatient—for this service, effective December 2013 (but not community-based services)

- Physicians can foresee a special skills Nurse Practitioner assuming a role, but not as a generalist
- Deficit noted in EMS because of unanswered scope issues
- Deficit noted in palliative care services - about five patients annually - palliation is improved with inpatient services available; but, coordination of services is worse because nursing is tied to Health Centre, creating an after hours gap
- Medevac still used for diagnostics after opening of new facility - bedside ultrasound but no diagnostic ultrasound in medical imaging department
- Home support provided by Trondek Hwech’ín for First Nations community
- Varied opinion, but consensus of non-physicians that alcohol and drug abuse (prescription and cocaine) is substantial
- Social services ideology favours building a community capacity (travel is expensive and time-consuming)
- Physicians note the new facility has decreased Medevacs - data to be reviewed
- Physicians note the improved care for elderly and for palliation
- Occupancy rates at DCCH are highly variable
- McDonald Lodge provides food service for the new community hospital
- McDonald Lodge overlaps with home care program
  - New facility estimated to be complete in 2016
  - Currently 11 beds (9 permanent and 2 respite) - will become 15 beds (13 permanent and 2 respite) - staffing model will grow proportionately
  - Trondek Hwech’ín limited facility use - own homecare program (support, not care)
Full capacity for most of past year

Not much turnover or new admissions

At personal care level - less physical needs and more cognitive issues

Younger patient population

Beds become blocked due to a lack of housing for community homes and group homes

Immediate need is a float position to enable staff to assign hours, as required

Second need is a part-time therapies position to help with both homecare and the lodge

Future significant concern is the incidence and prevalence of the dementias and the rapid growth rate or improved diagnosis capacity

Floor staff already at maximum capacity and a single staff person alone at night and on weekends

Future workload drivers will be the dementias, aging, pressure from ADS, palliative care (cross-over between lodge and homecare - usually one patient at a time)

Targeting 3.0 FTE for homecare daytime services, 1.0 FTE night, and 1.0 part-time night

Housing for new staff not available

New facility has not provided additional palliative support, occupational therapy, and physiotherapy, as anticipated

DCCH informs that it will not be submitting Discharge Abstract Data and National Ambulatory Care Reporting System data through Whitehorse General Hospital

New facility preliminary data will be provided

Staffing is based on one RN always on duty with LPN also on duty at night - and one physician on call

Consensus opinion that mental health resources are a key deficit

Telehealth is still underused

Major gains of new facility are chemical withdrawal, palliation, short stay observation, and improved diagnostics

Occupational therapy and student support is a growing deficit—family support is notably important
• Concern of occupational therapy being outsourced to Whitehorse
• System bottleneck because so many children haven’t been provided with a diagnosis
• Successful program in support of disability services with one provider - moved outside of Whitehorse and piloted in Dawson City in May 2013, with a focus on employment and re-introduction into the workplace - works with clients and employers
• Disability requires only self-identification to gain assistance
• Disability services run as a case management and holistic approach—variable complexity approached on a case management basis—no formalized link with health except the interagency group
• Major challenges for disability services are housing for clients, transportation, and the requirement for time (case management has an extended lifecycle)
• Current caseload for disability services not at full capacity (large seasonal swings)—pilot funding (Yukon Council of Disability) about to end—compelling argument to extend a further year to achieve capacity and to assess outcomes

4.7.5 Destruction Bay

The interview was conducted with the Nurse-in-Charge at Destruction Bay, one of two single nurse Health Centres. She is on call 24-hours daily and for stretches of three weeks or longer. Her assessment is that it is not safe to be a single nurse station, especially in the absence of a local police service. The winter population of Destruction Bay is 30, with another 75 at Burwash Landing, 25 minutes away. In the summer, the catchment population doubles.

A major local issue is the need for one or two Medevacs weekly, often related to significant trauma and motor vehicle accidents. Medevacs are less frequent during the winter months.

The clinic is scheduled for walk-in visits in the morning and public health services in the afternoon.

Simple imaging services are available; blood work is performed every Wednesday morning for delivery to Whitehorse.

There are, currently, no home support workers in the community; however, if required the auxiliary staff are called upon to provide service; as well, the home care nurse, based in Haines Junction, provides assessments, on request.

A physician from Whitehorse visits for one day every two weeks. Palliative care services are limited to Whitehorse in the absence of a rural strategy.

Substance abuse is a substantial problem here, as well, and, probably, is disproportionate to the population. Overall, local programs and services are lacking.
The Kluane First Nations provide elder care and home support, although complete home care resources are lacking. There is, also, a social services manager.

4.7.6 Faro

The interview was conducted with two nurses, one social worker, and two home support workers. The population served is 375 and is characterized by a slightly older age cohort distribution. The population increases to approximately 600 in the summer. Although Faro is not a First Nations-based community, there is a First Nations population that receives services.

There is a 0.4 FTE clinical liaison coordinator and two auxiliary home support workers.

Faro has not had a resident physician in seven years; currently, a Whitehorse physician visits every two weeks.

Visiting services include:

- One mental health visit monthly
- One Child Development Centre visit monthly

A significant clinical challenge in Faro is dealing with a high rate of chronic disease. As well, the alcohol and drug abuse challenges are as severe in Faro as elsewhere, but likely better hidden. The detoxification services are in Whitehorse; however, there are no local aftercare services, so the problems continue to recycle. It is felt by the local providers that enough service volume exists between Faro and Ross River to support a decentralized model of mental health services and ADS.

4.7.7 Haines Junction

The interview was conducted with the Nurse-in-Charge at Haines Junction, a two hour drive to Whitehorse, with a population of 850 people, with 50% being First Nations. It has a municipal government and self-government for the First Nations. Services are shared across a vast geography that includes half-way to Whitehorse, half-way to Destruction Bay, and north to the Alaska Border.

Nursing services are provided by 3.5 FTE. Medical services are provided by a visiting doctor, one day weekly. The Child Development Centre is responsive to referrals. ADS has not been visiting Haines Junction recently; although, Many Rivers provides counseling services to three communities. Social services are shared with 1.0 FTE for Haines Junction, Beaver Creek, Destruction Bay, and Burwash Landing. Home care services are provided in concert with service to Destruction Bay and Beaver Creek, with 0.6 FTE home care nurse, 0.4 home support worker, and auxiliary staff, as required.

The services provided out of Haines Junction by a 1.0 FTE mental health counselor may be in jeopardy due to the lack of permanent funding. Needless to say, this places a great deal of stress on the communities that receive this care.
EMS services are through volunteerism and experience inconsistent availability

There are significant needs for a range of health and social services:

- ADS counselor and related services
- Increase in physician visits and greater attention to continuity of medical care
- Consistent and improved use of chronic disease management programs
- More rapid access to ED advice by telephone, on a consistent basis
- Improved health promotion services, including sex education at the school
- Improved access to EMS services
- Greater use of telehealth services, expanding beyond the current use for cancer agency services

4.7.8 Mayo

The interview was conducted with a Nurse and a Social Worker; the community, with a population of 400 (and with seasonal variation), has seen fluctuating levels of care due to the mine closure and a subsequently planned re-opening. The First Nations is about 2/3 of the total; 80 residents are greater than 55 years of age and approximately 100 attend school (preschool to grade 12).

There are two full-time nurses (funding is for three); the nursing profile includes appointments, walk-in clinics, community health, immunization, vision screening, hearing screening, prenatal services, and well baby and well women services. ADS is a significant community issue; there is some ADS support from Whitehorse, but this is infrequent, and patients generally end up in Whitehorse. As well, there is a First Nations aftercare worker in the community.

There is a regional Social Worker position that has been unfilled for one year and a mobile Social Worker from Whitehorse (along with a full-time administrative assistant); this professional also serves Pelly Crossing, where the needs for social services exceed Mayo. Home care services are provided by 0.3 FTE community liaison coordinator and 0.32 home support worker.

A resident physician in Mayo also provides services to Pelly Crossing every Monday, in a collaborative care type of model. Outside services include the following:

- Friday telehealth for Alcoholics Anonymous
- Many Rivers counselor from Dawson City comes every two weeks (and has a private entrance)
- Mental health services, in general, come from Dawson City, with a counselor coming for one day every two weeks (and being available, as required) and a mental health
nurse providing a range of services that include home visits, medication orders, home visits, and expediting psychiatric referrals

- Child Development Centre every three months (appears to be a satisfactory rate)
- Sporadic dental services
- Monthly physiotherapy and occupational therapy visits

There are significant needs for a range of health and social services:

- Adult protection for the elderly and for younger adults with disabilities
- There is no personal care worker
- ADS management is suboptimal
- It was reported that CATS workers visit infrequently and irregularly
- Transportation issues—some First Nations transportation to Whitehorse is costed at $240 round trip, while the local taxi service for others is about $700; this trip, usually 4 1/2 hours in duration, can require 5 1/2 to 6 hours if the road is bad, as in winter; it has been suggested, by many, that a government-subsidized bus service would be a welcomed initiative
- Palliative care support from Whitehorse has been excellent; however, not all patients who want to die at home have been able to obtain palliative care
- High fuel costs contribute to a housing crisis

4.7.9 Old Crow

The interview was conducted with the Nurse-in-Charge, the Manager of HSS, and the A/Director of the Vuntut Gwitchin First Nation. The population of 250 includes 25 elders and less than 50 in school (grades 1 to 12). Old Crow is the only “fly in” community in Yukon Territory.

Health services include appointments and walk-in clinics and evenings, on-call. Wednesday is a laboratory day, with samples sent to Whitehorse.

Visiting services include dial-in Alcoholics Anonymous meetings (but, poorly attended due to stigmatization), a rural mental health nurse for four days monthly, CATS worker for one to two days monthly, mental health workers monthly, one of two Whitehorse physicians for one week monthly, Child Development Centre every three months, a Social Worker from Dawson City monthly, and a dentist every three months.

Despite being a “dry” community, the problem with alcohol abuse remains high. The estimated community impact (direct and indirect) is 50%; a counselor lives in the community and, also, provides aftercare. As well, the use of marijuana and cocaine has been evident, locally.
While there is no defined program of palliative care, this level of care is planned around a patient’s needs and wishes, on a one-by-one basis. Social services provides referrals to counselors, youth counseling, youth recreation, and meals-on-wheels for the elderly.

Other local issues include:

- Limitations with housing
- No infrastructure support to empower residents to care for themselves
- No trained daycare workers
- No social work training provided to local residents
- No full-time nursing commitment—wide use of rotations through the community
- No early childhood education
- Inadequate ADS support
- Need for improved chronic disease management
- Need for improved use of telehealth
- Need for increased availability of diabetes education
- Underuse of telehealth technology may be greatest in Old Crow over other remote communities

### 4.7.10 Pelly Crossing

The interview was conducted with the Nurse-in-Charge. There are 2.0 FTE nurses at Pelly Crossing, with a population that varies between 250 and 300 people. A Many Rivers counselor visits weekly, as does the physician from Mayo.

There is no capacity for Medevac service from Pelly Crossing; these patients need, first, to go to Mayo.

The Selkirk First Nation works with home care services. A dentist visits only twice, annually. The nurse was unaware of social services and ADS in the community. While the First Nation works with processes for detoxification, inadequate aftercare remains a priority. Telehealth services appear to be underused in Pelly Crossing. Clinical services, in addition to mental health services, include, especially, tuberculosis and substance abuse.

Here, as in other centres, it was observed that the Health Centre log book often fails to capture actual health and social services types and levels of activity. Home care services are available through a 0.3 FTE community liaison coordinator (also linked with First Nations programs) and required auxiliary support.

There are significant needs for a range of health and social services:
Increased social services

Increased ADS

Increased mental health workers

4.7.11 Ross River

The interview was conducted with a Nurse and a Social Worker (one of two in the community). There is a stable population of 350 people, 85% of whom are First Nations, receiving health services from two nurses\(^{22}\) who provide services at the centre, daily from 08:00 to 16:30, and are on-call every night and weekend. The centre offers appointments and walk-in services, STI clinics, travel clinics, and home visits. As well, medical services are provided four days monthly by one of a group of three physicians, all based in Whitehorse. That results in one or two weeks per month without medical services; when necessary, the Emergency Department at Whitehorse General Hospital provides telephone and prescription support.

A 0.4 FTE community liaison coordinator and 0.32 home support worker provide home services; a physiotherapist will visit as required. The community liaison coordinator is also an occupational therapist.

The area is served, as well, by a First Nations Healing Centre (with 2 wellness workers, a family support worker, a health liaison worker, a residential school support worker, and a diabetes support worker, in addition to home care support).

Mental health services are provided from Dawson City once monthly for two days each time (serving both Faro and Ross River). As well, there is a part-time mental health worker in the community to deal with long-term mental health issues, a CDC visit for two days, every three months, and, albeit absent for the past six months, a CATS worker scheduled for every second week.

An ADS worker visits monthly for two days. The provision of social services is linked with those provided in Faro. Medevacs from Ross River are required three or four times monthly, but vary significantly.

Limited point-of-care testing is provided on site (CBC, INR, urinalysis, pregnancy test, blood glucose); all other laboratory samples are sent to Whitehorse. Also available locally are electrocardiography and limited medical imaging. A dentist visits twice annually (First Nations dental care is funded federally; NIHB will cover a Whitehorse dental visit only if urgent). Vision screening services are noted to be poor, as is access to mammography.

There are significant needs for a range of health and social services:

- Increased mental health services

\(^{22}\) One nurse has been located in Ross River for six years and the other, for ten years
Increased ADS professionals, for prevention, detoxification, and aftercare; the largest problem is alcohol abuse, but, there are also serious issues with cocaine and with prescription medications, including narcotics and benzodiazepines

Increased support for community-based programs; namely, prenatal services (currently, there are nine prenatal patients—usually three—specifically, there has been a request to reinstate the CPNP program), parenting skills assistance, and elder care

Support services including additional CDC days, CATS, FASD diagnostics, physiotherapy, occupational therapy, home care, and palliative care

4.7.12 Teslin

The interview was conducted with two Nurses (there is no permanent Nurse-in-Charge) and one Social Worker. As well, there was a separate interview with the Director of Social Services with the Teslin Tlingit Council. The population of Teslin is 454 (primarily First Nations). The health issues facing the community are a high rate of addictions and unduly large prevalence of chronic diseases. The main services provided are chronic disease management, urgent care, and on-call services

In addition to community care, the health centre is providing nursing services on an 0.8 FTE basis (0.3 FTE + 0.5 FTE). Dietitian services, available from Whitehorse General Hospital, apparently are underused.

There is Social Worker, who lives in Teslin and covers Carcross, Watson Lake, and Haines Junction, for vacation, as is the norm across the territory. The lower caseload for social work in Teslin is thought to be due to under-reporting rather than lower threshold of need, especially with respect to police issues and domestic violence.

Home care services are available through 0.4 community liaison coordinator (a registered nurse), 0.32 home support worker, and one auxiliary staff.

There is a large unmet need for ADS: alcohol abuse is very high, marijuana is fully accepted as “normal” use, and the use of cocaine is a growing concern. There is no shelter in town; as a result, some people are placed in cells for their own protection. There is no nursing care provided in the seniors’ complex.

Visiting services are, as follows:

- Two visiting physicians who each come for one day, monthly; this is not considered to be an adequate visitation schedule for required medical services, in part reflected by a three-month waiting list
- Physiotherapy and occupational therapy services are provided only once or twice annually (and, recently, very little occupational therapy); this is not considered to be an adequate visitation schedule
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- Child Development Centre visits monthly, but is hindered by a lack of private meeting space
- CATS worker and Many Rivers counselor visit at intervals

There are significant needs for a range of health and social services:

- Alcohol abuse is a major issue that is under-managed due to a lack of trust in the ADS program
- Transportation issues are prominent here, as elsewhere
- Serious deficit of mental health workers
- Enhanced inter-agency meetings
- Shelter services

4.7.13 Watson Lake

Interviews were conducted with six groups of providers:

i. Homecare

ii. Facility Manager

iii. Physician

iv. Community Nursing

v. Social Worker

vi. Mental Health Counselor

Following is a summary of issues that were identified during these meetings:

- Staffing:
  - Physician services are entirely locum tenens with sole provider model
  - 1.0 FTE Health Centre Nurse
  - 2.0 FTE Community Health Nurses
  - 0.5 FTE home support worker, 1.0 FTE registered nurse for home care services, and one auxiliary staff
  - 6.9 FTE RN (WLCH) (staffing model is 2.0 FTE RN during daytime and 1.0 FTE RN plus 1.0 LPN at night)
  - 2.0 FTE LPN (WLCH)
3.0 FTE social workers, one of whom is based out of Whitehorse

0.8 FTE mental health consultant (shared with Ross River and stretched very thin - only to see severe and persistent mental health disorders)

- ADS and aftercare continuing significant deficits
- Mental health disorders continue to be highly underserviced (mental health, abuse, trauma - often all linked)
- Many Rivers provides additional care

Visiting services:

- Child Development Centre
- CATS - 6.0 outreach counselors for Yukon Territory - each works in Whitehorse and is linked to 1 or 2 rural communities - also, 1.0 intake worker and 1.0 supervisor

  - While many residents want CATS to be community-based, this is conceptually strong, but functionally very difficult

- Hearing services once or twice annually
- Occupational therapy infrequently (outpatient and inpatient services assumed by hospital corporation in December 2013)
- Physiotherapy infrequently (outpatient and inpatient services assumed by hospital corporation in December 2013)—primary deficit continues to be home-based physiotherapy

- It was thought by many that the new facility would provide more or different services than the old facility, but that community care and utilization patterns are unchanged
- ADS visits occur approximately every six weeks; aftercare is inadequate
- ADS and mental health services are a serious deficiency and a major need
- Mental health visits once monthly; volume gap that is worse for complex cases in rural settings; variable degrees of FASD severity, often compounded with addictions and mental illness
- Mental health deficiency is exacerbated by no rural shelters for men or women (one in Watson Lake and one in Dawson City)
- Serious resource and funding issue for the provision of mental health services; partial solution rests with the education of members of First Nations communities in mental health services and ADS
- Inconsistent physician services have led to absence of continuity of care; a regular roster would lead to significant improvement

- EMS is available in daytime from Monday through Friday; otherwise volunteer

- Mandate for occupational therapy and physiotherapy is three visits annually, with service volume driven by referrals; occupational therapy is part of the Home Care program, while physiotherapy also includes regional travel, with all communities being covered as an entity

- YHC has become responsible for inpatient and outpatient therapy services; Home Care is responsible for home care services; the YHC-based services now require physician referral (consonant with YHC policy - previously included self-referral)

- Occupational therapy and physiotherapy services have not been to the community hospital since May 2013; most significant impact is in the chronic outpatient category

- Telehealth could be helpful for some of the therapies, but its use is infrequent

- Solution to the therapies gap for the two community hospitals is being addressed by YHC, in part throughout 0.5 FTE funding for each community (and thought that part of the funding could go to a therapy assistant); in the interim, patients continue to be sent to Whitehorse for physiotherapy

- Home care services are also provide to Lower Post; OT and PT services are not provided there

- Liard First Nation has contracted with Alberta company to provide home care services (the band is not operating services, at this time, due to financial complications); non-First Nations services are through DHSS; capacity measured against need varies significantly and does not align home care nursing, occupational therapy, and physiotherapy; the only home care services to First Nations have been personal care services

- From Monday to Friday, there are also two home support workers for housekeeping, shopping, banking, and mail assistance

- Rural referrals for occupational therapy and physiotherapy have fallen because of an impression of no or limited capacity to respond

- The significant growth in the aged cohorts will lead to an increased need for home care, occupational therapy, and physiotherapy (estimated that Yukon territory has the highest percentage of elderly residents who live alone); an additional workload driver is the lack of assisted living (as a result, many stay at home until overtaken by a health care crisis)—no suggestion of improved assisted living evident in the near future
• Improved services would be in place if there was ability to be flexible in home care planning cycles

• Immediate short-term deficit in OT is 0.5 FTE and, over time, likely a further 0.5 FTE

• PT staffing just increased by 0.4 FTE; too early to determine the impact on regional needs from perspective of YHC

• New Many Rivers counselors provide significant improvement (but only Monday through Friday)

• Seniors care is just an apartment building without oversight

• Inadequate stat and emergency laboratory services in hospital jeopardize patient care and increase unnecessary travel to Whitehorse

• Diagnostic services for physicians in hospital during unsocial hours vary from absent to limited

• Concerns about the adequacy of future physician recruitment will exacerbate shortages to a serious level

• Health Centre has empty space, now used for storage; small dental/optometry room in Health Centre will not get used

• High incidence of STI in Watson Lake relative to Whitehorse

• There is no chronic disease management program in Watson Lake

• Previous 0.5 FTE dietitian services no longer available because of being under-utilized

• Health Centre runs a drop-in centre one-day weekly and provides immunization, TB testing, travel advice, employment assessments, and STI services; one-day weekly is providing “well” services; clinic held at high school every second Thursday

• Parhelion clinic continues to be off-site; Health Centre would support Nurse Practitioner

• The 3.0 Social Workers provide services to Watson Lake, and are based at offices separate from the Health Centre; services include youth justice, adult protection, and social assistance

• Social Workers linked to rest of territory by two-monthly regional meeting in Whitehorse; one Supervisor in North and one in South

• Little Social Worker interaction with Health Centre or physicians; would like to see in-hospital presence and defined role
4.8 Need and Epidemiology Profiles

4.8.1 CIHI Health Indicators

Indicators of health status are made available by the Canadian Institute for Health Information through its Health Indicators web portal (http://www.cihi.ca/hirpt/search.jspa?href=http%3A//www.cihi.ca/hirpt/SearchServlet). These indicators are available on an annual basis from 2000 to 2011. Not all indicators are populated for all years, nor are all indicators available for Yukon Territory. No sub-territorial level information is provided. Where possible, confidence intervals have been provided.

The indicators are presented for specific areas:

- Health Status
- Health System Performance
- Community and Health System Characteristics

While some of the indicators relate more toward the health system, for comprehensiveness, indicators from all three areas are presented here (Exhibit II.4.03). Some of the CIHI indicators have been omitted where no information is provided for Yukon. Results have been constrained to the most recent five years (2007 - 2011).

Some trends present themselves in the figures provided in the supporting tables. It should be noted that, due to small volumes, some of the confidence intervals are quite large and the changes may not be statistically significant. The points of note accompanying each table are meant to highlight where there may be emerging concerns in terms of resource planning.

Some points of note among the Health Status indicators (Compendium 14) are:

- Hospitalized acute myocardial infarction (AMI) events have increased by 30% from 2007 to 2011, and more sharply among females (46%) than males (34%)
- Hospitalized stroke events have fallen over the same period by 43% (56% for females, but only 18% for males)
- Hospitalization for injury has declined 15% (22% for males and 3% for females)

Some points of note among the Health System Performance indicators (Compendium 16) are:

- Information is suppressed for a number of indicators where cell sizes are too small or data are incomplete
- Hospitalizations for Ambulatory Care Sensitive Conditions (ACSC) (2006 Revision) have risen by 7% from 2007 to 2011 (12% among females, and declined slightly, by 2%, for males)
Territorial Profiles

- Caesarean Sections have declined marginally (7%) over that period; rates among urban residents is marginally higher than rural residents over the period 2007/08 to 2011/12 (23.7 versus 22.6)\(^{23}\)

- Hospitalized hip fracture events are down 8% in 2011 over 2007 (when there was a peak), but were up sharply over 2010

Some points of note among the **Community and Health System Characteristics** indicators (*Compendium 20*) are:

- Coronary Artery Bypass Grafts (CABGs) rose by 32% from 2007 to 2011 (following a dip in the previous two years); the increase for males was 51%

- Hip replacements declined by 5%, but that was attributable to a 24% drop among males, whereas there was a 9% increase among females

- Knee replacements rose 31% (attributable to an increase over 100% for males)

- Percutaneous Coronary Interventions (PCIs) rose 30% (27% for females and 35% for males)

- Cardiac re-vascularization procedures rose by 30% (20% among females and 40% among males)

- Hysterectomies rose by 7%

- The ratios of overall inflow to outflow of cases remained relatively consistent over the five year period

- The rate of visits to General and Family Practitioners fell by 18%, but visits to Specialists rose by 23%

### 4.8.2 Public Health

A detailed appraisal of health indicators was made by DHSS. Each indicator was assessed for availability, period(s) covered, and with notes and caveats on their use. The details of this appraisal have been provided in *Compendium 24*.

The following caveats were provided with respect to reportable conditions:

*There are readily available rates for a set of specific communicable diseases for the Yukon (listed on the next page). However, there are 60 diseases monitored by the Yukon Centre for Disease Control (YCDC). Urban / Rural splits are looked at internally but are not published. Similarly,*


Note: Based on place of residence of mother, which may differ from place of hospitalization. Confidence intervals not provided.
perinatal conditions are looked at, but rates are not calculated. If more information is required than is readily available, the Director requests that a special request be made targeting specific needs, with the caution that such requests would require additional time for preparation. (A list of 60 monitored diseases was provided for reference.)

In addition to cautions about availability, the Director has cautioned that, due to small population, caution is advised in interpreting Communicable disease rates. Relatively large fluctuations may appear from one year to the next for selected conditions, in comparison to provincial counterparts in the south, and this may be based on changes of only a few occurrences. This caution should be applied for much of the data on need/epidemiology, and that assessing trends based on a few years of data may be challenging or not possible at times. This is even more true of data for rural Yukon, for which 1-2 incidents could make a significant difference in rates (often based on 100,000 population). This could be a matter for discussion as work with the data proceeds, but it was deemed appropriate to emphasize this concern at the outset because, while not a gap, it is a limitation of working with data for the Yukon.

Compendium 33 provides a list of Communicable Diseases with readily available data. Data are provided in Compendium 34 for the period 2007 through 2012. There were no discernible patterns.

Compendium 36 and Compendium 37 identify new cases of cancer in the Yukon tabulated in July 2011, non-age-standardized and age-standardized, respectively. The data cover 2005 to 2009 and demonstrate no discernible pattern year over year.

Cancer incidence is reported in Compendium 38. There is drop in all invasive primary cancer sites (including in situ bladder cancer), based on a three year averaging, from 2001 through 2007. This is also the case for Bronchus and Lung Cancer during the same period.

End Stage Renal Disease (ESRD) has increased in prevalence over a period tracked from 2002 to 2011 (Compendium 39). The number of prevalent ESRD patients has doubled over an eight year period from 2004 to 2011 (10 to 21 patients). The combined number of incident ESRD patients in B.C. and the Yukon has also risen, from a low of 623 in 2003 to 773 in 2011. The figures for Yukon alone were not available.

Injury rates are a sentinel indicator of risk in a society. Compendium 40 presents rates of hospitalization for unintentional and intentional injuries from 2001/02 to 2012/13. Hospitalizations for unintentional injuries have risen in recent years to nearly 400 in 2012/13 from about 250 in 2001/02. Correspondingly, the rates per 100,000 have risen from 835 to 1,092 over the same period. On the other hand, rates of hospitalization for intentional injury, while generally seeing an increase through this period (from a low of 135 per 100,000 to a high of 258), saw the lowest level in 2012/13 (120).
4.8.3 First Nations

Compendium 41 presents a series of sentinel indicators of health status from Health Indicators 2013 (CIHI and Statistics Canada), comparing First Nations peoples with the population as a whole over a period from 2007 to 2010 (persons over 12 years old). The indicators include: body mass index, smoking, drinking alcohol, fruit and vegetable consumption, life satisfaction, chronic conditions, perceived mental health, physical activity, and sense of belonging. Although not statistically significant in many instances, First Nations people are consistently reported at less desirable levels (higher body mass index, higher consumption of tobacco and alcohol, lower consumption of fruits and vegetables, lower levels of physical activity, lower life satisfaction and sense of well being, and higher levels of chronic conditions). The one exception is a sense of belonging to local community, where First Nations achieved a higher rate than the total population.

A 2006 report from the Yukon Bureau of Statistics illustrated the disparities between First Nations and non-First Nations in terms of life expectancy. At birth, non-First Nations females could expect to live approximately seven years longer (79 years versus 72 years). Correspondingly, non-First Nations males could also expect to live about seven years longer, albeit about four years less than their female counterparts (75 years versus 68 years). These data are presented as Exhibit 04-10.

Exhibit 04-10
Life Expectancy at Birth

Exhibit 4.3.3.02
Yukon Bureau of Statistics – Life Expectancy in the Yukon 2006
Compendium 43a - Compendium 43f present results from the First Nations Regional Longitudinal Survey (2009). The survey was designed to gauge the perceptions of First Nations peoples about their health and their access to health services. The following is a summary of some of the survey results:

- Three quarters of respondents did not find community/health programs to be a community strength
- One third of respondents rated their access to health services as less when compared with Canadians, generally
- Among 14 potential barriers to access, long waiting lists were considered a barrier among 30%, whereas availability of health services were only seen as a barrier for 22% of respondents; 60-80% of respondents felt that the potential barriers to access were not applicable
- 42% indicated that they had difficulties accessing NIHB services; dental care was the most problematic
- One third of respondents indicated that they had to change primary healthcare provider two or more times over the previous 12 months; another 8% had to change once
- Among those who believe they need support services (light housekeeping, home maintenance, nursing, palliative care, personal grooming or meal preparation/delivery), only about half indicated that they were receiving the services
- Family members (immediate, 48%, or other, 38%) and friends (46%) were cited most often as the emotional or mental health support resource among respondents
- 18% of respondents had sought treatment for drug or alcohol addiction through counseling (11%), AA/NA meetings (10%), residential treatment (11%) or detoxification (5%)

4.8.4 Canadian Community Health Survey 2011/2012

Data for selected indicators have been extracted from the 2011/12 Canadian Community Health Survey to provide initial descriptors of the health status of the community. These are self-reported measures. This is one instance where the results reflect the split between rural and urban Yukoners (Compendium 45).25

According to the survey, a little more than half (53%) of rural residents of Yukon Territory perceive their health to be “very good or excellent” . . . as compared to 62% in urban Yukon Territory. In conjunction with those who feel good, this represents about 87% of rural residents (89% for urban residents). The perceptions are not statistically different.

25 Some have questioned the validity of this survey due to sample size.
Rural Yukoners rate their mental health as “very good or excellent” (66% of respondents), compared to 71% for urban Yukoners. Along with those who rate their mental health as good, this rises to 95% for rural residents (94% for urban residents). For rural Yukoners, the sense of community belonging is “somewhat or very strong” (78% of respondents), compared to 75% of urban respondents. Overall, 94% of respondents are “satisfied or very satisfied” with life, consistent across Yukon Territory.

When asked to assess their weight, 47% of rural Yukoners see themselves as “normal or under weight,” consistent with Yukon Territory as a whole. For a number of sentinel conditions (asthma, arthritis, back problems, high blood pressure, chronic obstructive pulmonary disease, diabetes mellitus, and heart disease), residents of rural Yukon Territory reported consistency with urban Yukoners, with a few notable exceptions. Rural residents indicated back problems for 24% of respondents, compared to 17% for urban Yukoners. They also indicated issues with high blood pressure (17%), compared to 11% for urban residents. Diabetes mellitus was indicated for 8% of rural respondents, versus 5% for urban residents.

On health care availability in the territory, 61% of rural residents gave a rating of “good or excellent,” compared to 71% among urban residents. The gap widens when asked to rate availability of health care in the community - to 55% as compared to 72%.

On health care quality in the territory, 68% of rural residents feel the quality of care is “good or excellent,” compared to 80% of urban residents. Again, the gap widens when asked about health care quality in the community (63% versus 81%).

People 15 years of age and older were asked about the health care services they received in the preceding 12 months. Most (86%) rural residents indicated that they had received care (compared to 89% of urban residents), with 81% rating the care as “good or excellent” (versus 86% for urban Yukoners). Hospital care had been received by 47% of rural respondents in the prior 12 months (50% of urban residents), and 35% of rural Yukoners had received community-based care, with 79% rating the care received as “good or excellent” (versus 83% for urban Yukoners).

Slightly more rural residents stated that they had “sometimes or often” experienced activity limitation than their urban counterparts (41% versus 38%). Their propensity to consume fruits and vegetables was less: 36% stated they had more than five times per day (versus 43%). Their level of activity was marginally higher.

Rural residents indicated that they “mostly or always” wore helmets when riding a bicycle (50%), compared with 80% of urban residents. Similarly, helmets for downhill skiing were worn by rural residents on 66% of occasions, compared to 83% for urban residents.

The rates of smoking in rural areas (including those who characterized themselves as occasional or daily smokers) was 59%, as compared to those living in urban areas (39%).
Those indicating that they consume five or more drinks of alcohol more than once a month was higher in rural areas (35%) than in urban areas (28%), both of which are higher than reported in Canada as a whole (24%). There were also marginally higher rates in the Yukon of those consulting a mental health professional in the previous 12 months: rural 16% and urban 17%, versus 13% in Canada.

The table presented in Compendium 49 also draws information from the Canada Community Health Survey related to a number of disease conditions. From 2007/08 to 2011/12, the proportion of people with arthritis has increased marginally. Asthma has increased, especially in rural areas. There has been a marginal decline in COPD and heart disease. Diabetes is up sharply. The proportion of people with high blood pressure has remained the same overall, but has risen in rural areas of Yukon. Yukoners’ perception of their mental health has declined. There has been a marginal increase in mood disorders, but also a marginal decline in anxiety disorders.

4.8.5 Health Indicators 2013 (CIHI and Statistics Canada)

The dependency ratio is presented as the number of dependents (the combined population age 0 to 19 and the population age 65 and older) for every 100 people in the working-age population (age 20 to 64). Canadians age 65 and older and those younger than age 20 are more likely to be socially and/or economically dependent on working-age Canadians, and they may also put additional demands on health services. The dependency ratio for the Yukon is 47.4 compared to 59.1 in Canada, indicating fewer numbers in those dependent age cohorts.

Hospitalizations for injury in Yukon Territory substantially exceed those in Canada as a whole: 1,159 per 100,000 population versus 516, age-standardized. The age-standardized rate of acute care hospitalization is due to injury resulting from the transfer of energy (excludes poisoning and other non-traumatic injuries), per 100,000 population. This indicator contributes to an understanding of the adequacy and effectiveness of injury prevention efforts, including public education, product development and use, community and road design, and prevention and treatment resources.

The rate of people in Yukon Territory hospitalized for acute myocardial infarction (AMI) events exceeds the Canadian level (246 per 100,000 compared to 205, age-standardized), whereas the rate is lower for stroke events (106 per 100,000 versus 121, age-standardized).

Potentially avoidable mortality is defined as the deaths before age 75 that could potentially have been avoided through all levels of prevention (primary, secondary, tertiary), expressed as the age-standardized mortality rate and potential years of life lost (PYLL) per 100,000 population. PYLL is the number of years of potential life not lived when a person dies before age 75. Avoidable mortality refers to untimely deaths that should not occur in the presence of timely and effective health care or other public health practices, programs, and policy interventions. It serves to focus attention on the portion of population health attainment that can potentially be influenced by the health system. The mortality rate per 100,000 for Yukon
Territorial Profiles

Territory was 254 versus 183 for Canada. PYLL per 100,000 for Yukon Territory was 5,043 versus 3,353 for Canada.

Avoidable mortality from preventable causes is defined as the subset of deaths before age 75 years that could potentially have been prevented through primary prevention efforts expressed as the age-standardized mortality rate and potential years of life lost (PYLL) per 100,000 population. This indicator informs efforts to reduce the number of initial cases (that is, incidence reduction); through these efforts, deaths can be prevented by avoiding new cases altogether. In Yukon Territory, this mortality rate is 174 per 100,000 (118 in Canada), and the PYLL is 3,562 per 100,000 (2,097 in Canada).

Avoidable mortality from treatable causes is also a subset of deaths before age 75 that could potentially have been prevented through primary prevention efforts expressed as the age-standardized mortality rate and potential years of life lost (PYLL) per 100,000 population. This indicator informs efforts aimed at reducing the number of people who die once they have the condition, or case-fatality reduction. In Yukon Territory, this mortality rate is 81 per 100,000(65 in Canada), and the PYLL is 1,481 per 100,000 (1,257 in Canada).

Other indicators (as age-standardized rates per 100,000) are:

- Hospitalized hip fracture events (65 years and older): 848 (Canada 435)
- Ambulatory Care Sensitive Conditions: 507 (Canada 290) - often referred to as avoidable admissions
- 30-Day Readmission:
  - Medical: 16.0 (Canada 13.4)
  - Surgical: 9.6 (Canada 6.6)
  - Obstetrical: 2.8 (Canada 2.0)
- Self-injury hospitalization: 175 (Canada 67)
- Mental illness hospitalization: 787 (Canada 489)
- Mental illness patient days: 541 (Canada 707)

**Compendium 51** presents age-standardized rates for a number of conditions with the following results:

- Perceived life stress is rising
- Arthritis is declining
- Diabetes mellitus is greater
As seen above, asthma is higher, high blood pressure is relatively stable, and COPD has declined marginally.

4.8.6 Other Sources of Health Status Information

**Obesity in Canada 2011: A Joint Report from the Public Health Agency of Canada and the Canadian Institute for Health Information**

This report places the level of obesity (defined as body mass index >30) in Yukon Territory at 22.4%. In comparison, the level in Canada is reported as 17.1%.

**Yukon Territory 2012 Health Status Report - Focus on Children and Youth (DHSS)**

Students were asked to indicate when certain risk behaviours posed slight or no risk to health. Youth were surveyed in 2009/2010. The risk behaviours surveyed included: smoking cigarettes, smoking marijuana, and drinking alcohol. Respondents were separated into groups: those in grades 6 to 8, and those in grades 9 and 10. The results show a greater propensity to report perceptions “low” or “no risk” for youth from rural Yukon Territory as compared to the territory as a whole, and as compared to Canada. The one exception was grades 9 and 10 males with respect to drinking alcohol, who were about half as likely to see no problem with this behaviour.

Rural youth were identified as more likely to ride in a vehicle with a driver who had been drinking or using drugs than their Whitehorse counterparts. Even at younger ages (i.e. those in grades 6 through 8), rural youth indicated that they drove after drinking or using drugs. The propensity for both of these behaviours increased among the older group of grade 9 and 10 students.

Students classified as overweight or obese based on body mass index (BMI) were found at higher levels in rural Yukon for both males and females, in both grades 6-8 and grades 9-10. Results from the report, *Health and health-related behaviours among young people in Yukon (2011)*, informed the 2012 Health Status Report.

**Canadian Cancer Statistics 2013: Special Topic: Liver Cancer**

This report is prepared through collaboration of the Public Health Agency of Canada, Statistics Canada and the Provincial/Territorial Cancer Registries. Figures in this report are not presented at the community level, but at the territorial level. At 345 per 100,000, the estimated age-standardized incidence rate of liver cancer in Yukon Territory appears low relative to other jurisdictions in Canada.

There are estimated to be 130 new liver cancer cases in Yukon Territory in 2013 [Exhibit 04-11].
Territorial Profiles

Exhibit 04-11

Jurisdictional Estimated New Cancer Cases and Age-Standardized Incidence Rates

There is an estimated mortality rate (age-standardized) of 241 in Yukon Territory for 2013. This is high relative to other jurisdictions in Canada, with the exception of Nunavut at 363 per 100,000. [Exhibit 04-12].
End-Stage Renal Disease Among First Nations Peoples in Canada: Treatment and Outcomes and 2013 CORR Report—Treatment of End-Stage Organ Failure in Canada, 2002 to 2011 (www.cihi.ca)

New data on kidney failure treatment shows mixed results for First Nations patients. This report, published in 2013 by CIHI, estimates that First Nations peoples are “three times as likely to seek treatment for kidney failure or end-stage renal disease (ESRD) as other Canadians”. While the report is presented at a national level, it is worthy of note for Yukon Territory. The authors further indicated that First Nations People with ESRD:

- Are less likely to receive kidney transplant
- Have a lower survival rate after five years on dialysis
- One in five must travel more than 250 km to receive treatment
- That the prevalence of ESRD is “consistent with the higher rates of diabetes and obesity” seen in these communities
New data on kidney failure treatment shows mixed results for First Nations patients (Canadian Institute for Health Information)

End-Stage Renal Disease Among First Nations Peoples in Canada: Treatment and Outcomes and 2013 CORR Report-Treatment of End-Stage Organ Failure in Canada, 2002 to 2011

February 14, 2013—First Nations peoples are three times as likely to seek treatment for kidney failure or end-stage renal disease (ESRD) as other Canadians, according to a new report from the Canadian Institute for Health Information (CIHI).

First Nations patients with ESRD are less likely to receive kidney transplantation (27% versus 42%); however, those who do get a new kidney have survival rates that are similar to those for others in Canada (84% at five years), says the report End-Stage Renal Disease Among First Nations Peoples in Canada: Treatment and Outcomes.

By contrast, First Nations patients who undergo dialysis have a lower survival rate after five years (40% versus 45%).

In all, more than 40,000 Canadians were living with ESRD in 2011—roughly 1 out of every 1,000 people. The condition's higher prevalence among First Nations peoples is consistent with the higher rates of diabetes and obesity among this population.

First Nations ESRD patients were almost twice as likely to be diagnosed with diabetes as their non-First Nations counterparts (49% versus 27%) and were more likely to be obese (40% versus 27%).

“Not only do disparities exist in rates and treatments for First Nations peoples with kidney failure, one in five must travel more than 250 km to receive treatment,” says Jeremy Veillard, Vice President of Research and Analysis at CIHI. “Fortunately, there are a number of programs aimed at improving the experiences of First Nations peoples with kidney disease by focusing on prevention, culturally appropriate care and overcoming geographic barriers.”

Overall, the number of transplants remained virtually unchanged since 2006. In 2011, the number of deceased organ donors increased to 514, or 15 per million Canadians, which was the highest number in 10 years; however, the number of living donors declined.

At the end of 2011, there were 4,543 patients waiting for an organ transplant; 3,406 of them needed kidneys. This number has been slowly increasing since 2005. Of the 265 patients who died waiting for an organ in 2011, 80 of them needed kidneys.

In 2011, a total of 2,124 organ transplants were performed. This includes 1,247 people who received a kidney transplant.

Four out of five patients on dialysis received hemodialysis in a hospital setting, which is the most expensive treatment option.
Brewers’ Association of Canada (2007)²⁶

This report prepared by Statistics Canada places Yukon Territory at the top of the list for alcohol consumption in Canada.

These findings are bolstered by a report prepared by the Brewers’ Association of Canada (2007) (http://theintrepid.blogspot.ca/2010/02/canadian-alcohol-consumption.html). Yukon again topped the list for per capita consumption of alcohol.

Exhibit 04-14
Canadian Consumption of Alcohol in Litres


Health Intelligence Inc. and associates

Clinical Services Plan for Yukon Territory
The preliminary results of the Yukon Addictions Survey (YAS 2005) place Yukon Territory at “high risk” for alcohol and other drug use.
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<td>80</td>
<td>15</td>
<td>2</td>
<td>1Q</td>
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<tr>
<td>British Columbia</td>
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<td>79</td>
<td>17</td>
<td>1Q</td>
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<table>
<thead>
<tr>
<th>Yukon Addictions Survey (YAS) Preliminary Results 2005</th>
<th>Cigarettes*</th>
<th>Alcohol</th>
<th>Cannabis</th>
<th>Cocaine</th>
<th>Methamphetamine</th>
<th>Ecstasy</th>
<th>Hallucinogens</th>
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<td>81</td>
<td>74</td>
<td>40</td>
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<tr>
<td>1990 YADS**</td>
<td>41</td>
<td>77</td>
<td>16</td>
<td>n/a</td>
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</tbody>
</table>

Q Qualified release due to high sampling variability
S Estimate suppressed due to unacceptably high sampling variability
Estimates for heroin, inhalants, and steroids were not presented due to unacceptably high sampling variability
* Canadian Community Health Survey (CCHS) 2003
** YADS (Yukon Alcohol and Drug Survey), 1990, Yukon Bureau of Statistics
4.9 Utilization Profiles

4.9.1 Registered Persons

Persons eligible for health care services and drug programs in the Yukon are enumerated in Compendium 59. There are five programs available to Yukoners: a Drug Program, a Children’s Drug and Optical Program (CDOP), a Chronic Program, a Pharmacare Exception Benefits (PEB) Program and a Pharmacare Exception Benefits Program for Palliative Patients (PEB-P). As the population in general is not static, neither are the populations eligible for benefits. Status First Nations are not eligible for Pharmacare or PEB-P. Counts have been provided as at year end as well as throughout the year.

The number of eligible individuals has been growing steadily from 2007 through 2013, both during the year (13%) and at year end (12%). Watson Lake and few other small communities have seen marginal declines. At the end of 2013, there were nearly 37,000 eligible residents and over 39,000 throughout the year.

In 2013:

- 13% of eligible registrants are participate in the drug program
- 9% are on the PEB
- 3% on the chronic program
- 16% of eligible registrants are identified as First Nations
- 11% are flagged as organ donors
- 3% died
- 14% of eligible registrants moved to Yukon Territory from elsewhere in Canada; another 6% moved back, while about the same number moved away

4.9.2 Physician Services

Medical services are primary provided through fee for service (FFS) practitioners. Some Alternative Payment Programs (APPs) have been established and are tracked through “shadow billings.” Although no payments are made on a fee-for-service basis, the activity provided through APPs is estimated for what it might have cost under FFS. Tabulations appear in Compendium 63 through Compendium 67.

In 2012/13, over $23 million of physician services were used, based on approved amounts. The majority (91%, $21 million) was for FFS practitioners. Actual amounts paid for FFS were just over $18 million. Various adjustments are made through the billings process. While these are important for the accounting cycle, they are less critical for the planning process.
As expected, Whitehorse residents use the largest amount of physician services, over $18 million in 2012/13, based on approved amounts. Watson Lake residents receive the next largest block of service at $1.2 million, followed by Dawson City with nearly $1.1 million. Status First Nations received nearly $4.1 million (17%) of service.

Following is an overview of the services provided in 2012/13:

- Over $14 million (61%) went to General Practice
- $1.9 million (8%) went to General Surgery
- About 1/3 of approved amounts were for office visits
- 14% went to outpatient activity and a similar amount to a provider at any type of facility
- Nearly $2 million was for surgery and another $1.5 million for anesthesia

Utilization rates based on age-gender cohorts by community were used to project future amounts for physician services. Rates for 2012/13 only and for an average across multiple years (2007/08 through 2012/13) have been prepared. Population estimates from each of the three projection scenarios were applied for five and ten year horizons. Although figures are presented by community, only the overall figures for Yukon Territory (or for Whitehorse) are considered to be stable.

For projected amounts based on single year (2012/13), utilization rates only are higher than when multi-year averages are used. The five year trend scenario, based on single year rates, returns the highest increases over the ten years (31%). Estimated increases for the 10-year and 2-year scenarios are 25% and 21%, respectively. The corresponding increases using average multi-year rates are 27%, 33% and 24%, for the 10-year, 5-year and 2-year scenarios, respectively. They appear to grow more rapidly, but start from a lower base in 2014 than the single year estimates. In general, the estimates are closely aligned.

**4.9.3 Hospital Services**

There are three hospitals in Yukon Territory, operated by the Yukon Hospital Corporation. The main facility is Whitehorse General Hospital. A smaller hospital has been in operation in Watson Lake for a number of years and, recently, a new facility was opened to replace the older site. A new hospital has also been built in Dawson City and began operation in December 2013. Given that this hospital has just commenced operations, there are no trend data on which to develop a profile. The Watson Lake Hospital has not historically submitted encounter data to CIHI through their Discharge Abstract Database (DAD, for inpatient and day surgery activity) or the National Ambulatory Care Reporting System (NACRS, for Emergency Department visits). As such, finer detail for this site is not as robust as the data from Whitehorse General.

CIHI data for six fiscal years were assembled for this analysis: 2007/08 to 2012/13. (Compendium 68 to Compendium 73). In addition to activity reported at the Whitehorse General
site, abstracts were also obtained for Yukon residents who were sent to facilities outside of the Territory to receive more advanced levels of care, typically in Vancouver, but also to facilities in Alberta.

The Whitehorse General Hospital now sees a volume of nearly 3,500 inpatient cases (2,900 resource intensity weighted cases) per year. These cases generated about 17,000 inpatient days of stay. There were over 2,000 Day Surgery cases (nearly 400 RIW weighted cases) in 2012/13.

Over six fiscal years, the Whitehorse activity accounted for over 80% of the abstracted cases activity in the Yukon, both inpatient and day surgery. Of the remaining 20%, about 3/4 of the inpatients were sent to British Columbia for more advanced care. Virtually all of the day surgery sent out of territory went to British Columbia. The level of intensity of the inpatient cases sent out of territory is evidently higher, given that the proportion of the weighted case volume approached 27%.

Level of Care (LOC) was assigned to each of the abstracted inpatient records. LOC was assigned based on the Hay Level of Care Methodology, using combinations of Case Mix Group (CMG), age group and Resource Intensity Level (RIL). There are four levels in the assignment: primary, secondary, tertiary and quaternary. Fifty-four percent (54%) of the abstracted inpatient cases were considered to be primary and 38% were secondary over the six year period.

Records were also assigned to Patient Cluster Categories (PCCs), which are based on clusters of CMGs and CACS groups that are similar to Major Clinical/Ambulatory Categories used by CIHI, but with additional specificity for Specialty. For example, there are two neurological clusters: neurology and neurosurgery.

Not surprisingly, the highest volume inpatient PCCs are Obstetrics (12%) and Neonatology (10%) over the six years. These are followed by Cardiology (9%), General Surgery (8%), Gastro/Hepatobiliary (8%) and Orthopaedics (8%). The most populous Day Surgery cluster is Gastro/Hepatobiliary (31%), followed by Ophthalmology (11%) and Orthopaedics (10%). Combined, the highest volume of cases among both inpatients and day surgery cases is Gastro/Hepatobiliary (16%).

Utilization rates based on age-gender cohorts by community were used to project future amounts for hospital services. Rates for 2012/13 only and for an average across multiple years (2007/08 through 2012/13) have been prepared. Population estimates from each of the three projection scenarios were applied for five and ten year horizons. Although figures are presented by community, only the overall figures for Yukon Territory (or for Whitehorse) are considered to be stable.

Yukon Territory participates in the Northern Health Services Network (NHSN). The network was established by Alberta Health Services to assist with inpatient services and case management in Edmonton for residents of the territories; these services include
communications with territorial clinical staff and advice to families staying in Edmonton. Data have been presented in Compendium 74, covering a period form 2007/2008 to 2013/14 (partial year). In 2012/2013, the Network handled 125 inpatients, with 847 ward days and 277 ICU days of care. Some 775 outpatients were also treated. Since about 2009/2010, volumes have declined.

Inpatient cases and ER visits for the Watson Lake Hospital are presented in Compendium 75 for the period August 2010 to June 2013. The numbers remain relatively consistent over that period.

Further utilization indicators for the Whitehorse General Hospital appear in Compendium 76. These cover two fiscal years: 2011/2012 and 2012/2013. Occupancy and day counts show operational improvement from one year to the next.

NACRS data capture triage levels (CTAS) for visits to the Emergency Department (ED). There are five levels in CTAS: 1 - Resuscitation; 2 - Emergent; 3 - Urgent; 4 - Less/Semi Urgent; 5 - Non-urgent. A level 9 is assigned when the status is unknown. Seventy-four percent (74%) of the ED visits over six years were assessed as less/semi urgent or non-urgent. These visits could potentially be seen more efficiently in other settings than the ED (Compendium 77).

PCCs assigned to the visits indicate that the highest volumes of visits are for: Orthopaedics (15%), General Medicine (12%), Plastic Surgery (11%), Otolaryngology (10%) and Gastro/Hepatobiliary (10%) (Compendium 78).

The disposition of ED visits over six year is tallied in Compendium 79. Most (90%) were discharged to their place of residence - 7% were admitted.

Projected amounts based on single year (2012/13) utilization rates only are higher than when multi-year averages are used (Compendium 80 and Compendium 81). The 10-year and 5-year trend scenarios based on single year rates return similar increases over the ten years (14.7 and 14.4%, respectively). The 2-year scenario projects a decline of nearly 20%. The corresponding increases using average multi-year rates are 16%, 15% and -19%, for the ten-year, five-year and two-year scenarios, respectively. In general, the estimates are closely aligned, but the two-year scenario seems anomalous. Also, the estimates are closely aligned and the inclusion of day surgery cases affects the growth rates marginally.

Monthly surgical activity at the Whitehorse Hospital for the period from April 2009 through May 2011 is tabled in Compendium 82. There is no count of requests carried over from month to month as they are generally processed when received. New requests include any surgery booked for the month regardless of when it was booked. Requests removed includes cancellations, no shows and those rescheduled, either within the same month or to another

27 It should be noted that the assignment of PCCs has changed based on changes to CACS coding, changes beginning in fiscal year 2011/2012, to align more with the inpatient PCC classification
The volumes of new requests, those completed and those removed show a modest growth over this period.

**Compendium 83a** shows laboratory activity at the Whitehorse Hospital in 2012/2013. The table presents laboratory requisitions, specimens and orders by patient status, along with outpatient visits. Monthly volumes seemed to decline modestly during the year, but no longer term trend was possible. Outpatient laboratory visits seemed stable during the year.

Medical imaging utilization statistics appear in **Compendium 83b** for calendar years 2012 and 2013. The figures include outpatient, Dawson City, Watson Lake and the community nursing stations (processed through PACS). Whitehorse Radiologists report the images and WGH technicians complete the quality assurance to prevent omissions. Corresponding medical imaging volumes in ER are presented in **Compendium 84**.

### 4.9.4 Home Care

Selected characteristics of home care clients have been tabled in **Compendium 85** (note that the CIHI data do not include all home care clients and services). The table covers five fiscal years: 2008/2009 to 2012/2013. Client counts, admissions and discharges, and diagnoses are presented. The data presented are for Yukon Territory as a whole.

Over the five year period, the number of clients increased: the number of clients in 2012/13 was 55% higher than the volume in 2008/09. Admissions also increased, up 24%. Referrals from community based services rose to 71% from 62% in the same time period. Deaths on service were about 20% in 2012/2013.

The average age of clients remained constant at 75 years; 63% of clients were female in 2012/2013. For 63% of clients in 2012/2013, there was an indication of health instability, including end stage disease and changes in health status. Hypertension was the condition cited most often among clients (58% in 2012/2013). This was followed by diabetes (27%) and dementia (20%), in the same year. Over half had an indication of cognitive impairment, around 20% showed signs of depression, and about half experienced daily pain. Nearly 40% were rated as in high or very high need of service.

Nearly 90% cited an informal caregiver presence. Over the five year period, symptoms of caregiver distress fell from 42% to 19%.

**Compendium 86** provides month by month activity levels of Home Care activity from April 2012 to December 2013. The activity is separated by type of service: acute, chronic (LTC-M, LTC-S), palliative, and rehabilitation. Chronic services were provided for about half of the home care activity. Another 20% was for acute activity (30% in Whitehorse). Rehab services were provided as 25% of the activity, mainly in locations outside of Whitehorse. On average, there were over 500 encounters per month.
Dawson City and Watson Lake received the highest volumes of service outside of Whitehorse, at 45 and 41 encounters per month, respectively. In total, the smaller communities received about 225 services per month (Compendium 87a).

During that 21 month period, there were nearly 500 admissions in Whitehorse, a slightly smaller number of discharges, over 600 new referrals and 129 non-admissions. Outside of Whitehorse, in comparison, nearly 250 clients were admitted, a slightly smaller number discharged, more than 350 referrals and 77 non-admissions (Compendium 87b).

4.9.5 Chronic Care

Chronic care is often referred to as complex continuing care, in the context of hospitalizations. This type of activity has been reported to CIHI through the Discharge Abstract Database (DAD), but more recently through the Continuing Care Reporting System (CCRS). This system also tracks residential care activity. Some information from CCRS is available through CIHI’s web portal. The Portal only provides residential data for Yukon. It is likely that complex continuing care is provided in other jurisdictions, which may not be reported as Yukon activity, but for the location where the patient is being treated. It is also likely that this type of activity occurs in small number, given the size of the population of Yukon Territory. The reporting of rehabilitation cases in DAD (which also is now, typically, reported through another reporting stream to CIHI) showed fewer than 10 cases per year for Yukon residents, and all were treated out of the territory.

4.9.6 Drug Programs

Data were provided for those eligible and receiving coverage under the Department’s drug programs: Children’s Drug and Optical Program (CDOP), Chronic, Extended Benefits and Pharmacare. Compendium 88 presents data for six fiscal years: 2007/2008 to 2012/2013. By 2012/2013, nearly $11 million was spent on drug programs, up from $7.5 million in 2007/2008 (a 44% increase). Payment under the chronic program consumed 46% of the expenditures.

4.9.7 Community Nursing

Compendium 89 presents Acute Community Nursing activity for 2013 by community and by medical condition. Nearly 24,000 services were provided; 18% were for skin related conditions, and 16% were for musculoskeletal issues.

Compendium 90 shows acute activity by community over four years: 2010 to 2013. Activity fell during that period from nearly 26,000 services to under 24,000, about an 8% drop.

Community Health programs include services for: adults, youth, children and preschool, chronic conditions and seniors, communicable diseases, immunizations, mothers and infants, monitoring, and immunizations (Compendium 91). Immunization was the most prevalent service provided (31%) in 2013, while 20% were for adult services, and 18% were for mothers’ and children’s services.
4.9.8 Continuing Care

Selected characteristics of residents in continuing care facilities in 2011/2012 and 2012/2013 are presented in Compendium 92. Over the two years, the numbers of residents rose from 216 to 331. The average age increased by two years from 76 to 78, and the proportion of residents over 85 increased by three percentage points from 31% to 34%. More than half of the residents were female (57% in 2012/2013).

Admissions accounted for more than 40% of all residents. Discharges accounted for about 35-36% of all residents. In 2012/2013, 19% died in the facilities, down from 36% in 2011/2012. Those discharged home rose dramatically from 12% in 2011/2012 to 51% in 2012/2013.

Half of the residents were identified as having hypertension, 43% had dementia, and 21% had diabetes (2012/2013). Depression figures prominently (48%), as does limited or no social engagement (26%).

Compendium 93 presents selected disease diagnoses of assessed residents in Continuing Care Facilities for 2008/2009 and 2012/2013.

4.9.9 Laboratory and Imaging Services

Laboratory and imaging activities from 2006 through 2013 have been chronicled in Compendium 94a. The table presents requisitions for tests, specimens collected, and orders issued. In each case, volumes have risen over the eight years presented: 36% for requisitions and specimens, and 41% for orders.

Lab orders from the nursing stations are tabled in Compendium 94b for the same period. In total, about 28,000 orders were issued (annualized for 2013). The highest volume of orders came from Mayo (5,154), followed by Ross River (3,726) and Faro (3,454).

Diagnostics imaging statistics for 2011 and 2012 are presented in Compendium 95. Radiography studies numbered more than 16,000 per year in Whitehorse, increasing by 1.4% from 2011 to 2012. Ultrasounds rose by 6.6% from 5,600 to 6,000. Mammograms dropped by 5% from 2,263 to 2,151. Community radiography levels rose collectively by 23%.

4.9.10 Physical and Occupational Therapies

Regional Physiotherapy and Occupational Therapy activities have been chronicled from August 2010 to June 2013 in Compendium 96. The level of activity has been relatively stable over that period. In 2012, there were 5,200 physiotherapy and 600 occupational therapy services provided.

Compendium 97 shows PT and OT visit activity for three years (2010, 2011, and 2012) for each of the Dawson City and Watson Lake regional therapy programs. Clinic visits and home visits are provided, along with “no shows”.

4.9.11 Medical Travel

...
Medical travel is an integral part of health services in Yukon Territory. Given the vast area of the Territory and need to seek higher level care across long distances, including other jurisdictions, medical travel constitutes a significant component of health expenditures.

**Compendium 98** presents medical travel data for 2008 through 2013. By 2013, paid amounts rose to over $6.5 million from $1.5 million in 2008, a 33.3% increase. Claims rose from just under 5,000 to nearly 11,000 over the same period. Medical Evacuation (Medevac Air) accounted for the largest amount of expenditures, currently over $4 million. Subsidies account for $1.5 million and mileage another $700,000. Claims amounts for insured residents constituted $5.2 million in 2013. Nearly $1.1 million was for NIHB claims. One-way trips accounted for $4.4 million, and $2.3 million for round trips.

The largest number of Departures in 2013 were from Whitehorse (over 4,700), followed by Dawson City (over 1,400) and Watson Lake (just under 1,200) (**Compendium 99**). Most patients were transferred to Whitehorse (nearly 5,700) in 2013. Over 4,000 patients were flown to Vancouver. Another 924 went to Alberta, primarily Edmonton (**Compendium 100**).

**Compendium 102** deals specifically with medical evacuation. Nearly 500 trips were recorded for each of fiscal years 2011/2012 and 2012/2013, with over half a million miles flown. The number of clients transported was between 600 and 700 each year, and around 100 were repatriations. More clients were transported out of Yukon (around 350 per year) than transported within Yukon Territory (267 in 2011/2012 and 294 in 2012/2013).

The point of embarkation most often used in 2012/2013 (659 trips) was Whitehorse (252), followed by Vancouver (86), Dawson City (68) and Watson Lake (66) (**Compendium 103**).

Medical travel can be characterized as complex, expensive, and incompletely understood; a full analytic process would be required, apart from this study, to develop cogent arguments for reform. This study supports such a separate initiative to be undertaken by a resource, expert in medical travel and emergency care.

**4.9.12 Comparative Health Indicators**

This section takes a specific look at Yukon’s experience in relation to Canada as a whole, using indicators provided by CIHI that were cited previously. Data were compiled for the years 2007 to 2011. Results are presented in **Compendium 104**, **Compendium 106** and **Compendium 111**.

The CIHI Health Indicators, already described, are presented in the three areas: (1) Health Status, (2) Health System Performance, and (3) Community and Health System Characteristics. There are often no statistically significant differences identified, largely due to variability of estimates for Yukon. This stems from the small population. Consistent trends can be used to signal where issues may arise.

The following observations were made:

**Health Status**
Territorial Profiles

- Acute hospitalized AMI is rising in Yukon Territory, whereas it is falling in Canada as a whole
- Hospitalized stroke events are falling faster in Yukon Territory than in Canada as a whole
- Hospitalized injuries are substantially higher in Yukon, over twice the level in Canada
- Premature mortality in Yukon Territory is about 50% higher, based on both the rate and potential years lost life

Health System Performance

- The rate of Ambulatory Care Sensitive Conditions (ACSC) hospitalized in Yukon is 75% higher than the national average
- The rate of Caesarean Sections in Yukon, consistently, is marginally lower than the national average
- Hospitalized hip fractures occur at a much higher rate in Yukon Territory
- Potential mortality figures are available only for 2007 and 2008, but signal higher risk in Yukon, both by rate and by potential years of lost life
- Mortality from preventable causes is substantially higher in Yukon than in Canada as a whole
- 30-day in-hospital stroke mortality is higher in Yukon Territory, as is mortality from treatable causes
- 30-day readmissions for surgical, medical and obstetric reasons are higher
- 30-day readmissions for mental health reasons and for patients under 19 are lower
- Self-injury hospitalizations are substantially higher in Yukon Territory, notably among women

Community and Health System Characteristics

- Coronary Artery Bypass Grafts (CABGs) rates among males in Yukon were consistently higher than the national average among males from 2007 to 2011
- Total hip replacements are done more frequently for Yukoners than in Canada as a whole
- Hospitalization for mental illness is more prevalent
- Hysterectomies are more prevalent
- Use of GPs/FPs is higher in Yukon Territory
Operational indicators were gleaned also from CIHI data sources. Average length of stay (ALOS) for hospitalizations from 2004/2005 to 2011/2012 were obtained and presented in Compendium 115. The lengths of stay in Yukon Territory are consistently below the nation average (6.1 days vs. 7.2 days, age standardized, in 2012/2013). The hospitalization rate is considerably higher (nearly 11,800 per 100,000 population vs 7,700 in Canada in 2011/2012). Emergency Department (ED) visits by CTAS level show a greater concentration of less urgent and non-urgent cases in Yukon (77% vs 46% across Canada). Times spent in ED are below the national average for complex and uncomplicated cases.

4.9.13 Selected Wait Times

The Yukon Hospital Corporation provided wait time summaries for total knee replacements (TKR), in weeks) and for cataract surgery, in days. These are presented graphically in Exhibit 04-17 and Exhibit 04-18. Wait times for TKR include only first time replacements and exclude a second replacement if a bilateral replacement is required. Similarly, planned bilateral cataract surgeries are excluded.

Exhibit 04-17
Wait Times for Total Knee Replacement in Yukon Territory

It may be anticipated that the data for wait times for TKR may have improved since last collated, due to a targeted increase in funding.

28 See also chapter 9 Mental Health Services on page 200

29 These wait time data are intended to be representative and do not include a detailed methodology for estimation; such methodologies can be inconsistent across jurisdictions
4.10 Resource and Provider Profiles

4.10.1 Physicians

Exhibit 04-19
Physicians in Yukon Territory 2013

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<th>50 - 60 years</th>
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<tr>
<td>Total</td>
<td>74</td>
<td>57</td>
<td>62</td>
<td>58</td>
<td>251</td>
</tr>
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</table>

Source: Yukon Medical Council (YMC)

II Resident in Yukon Territory

| Total | 14 | 18 | 22 | 12 | 66 |

Source: Yukon Bureau of Statistics (YBS)

III Visiting / Itinerant Physicians

| Total |         |     |    |    |     |

Wait Times for Cataract Surgery in Yukon Territory

Exhibit 04-18
Cataract Surgery Wait Times (Days)

Source: Yukon Medical Council (YMC)
Of the 66 resident physicians, there are nine specialists, as follows:

- Psychiatry (1)
- Anaesthesia (1)
- General Surgery (4)
- Obstetrics and Gynecology (2)
- Paediatrics (1)—services provided to Kwanlin Dun Health Centre and to Child Development Centre

Historically, most physicians in Canada have practised as independent contractors receiving payments through fee-for-service (FFS) billing systems from jurisdictions across the country. They have not been employees like other health care providers, and there is no standard way to characterize a physician’s services in terms of full time equivalency. A variety of attempts have been made across Canada to derive a measure of full time equivalency, historically, based on FFS billings. In more recent years, the measure of full-time equivalency has become more challenging due to the changing nature of practice where larger proportions of physicians are compensated through alternative arrangements.

CIHI maintains a formula for calculating FTEs based on FFS billings for physicians across the country through the National Physicians Database (NPDB) program. This formula involves the identification of benchmark levels at 40th and 60th percentile points along compensation distributions. Yukon has not participated in this program for several years, and as a result, no information from the NPDB program can be drawn to assist with the calculation of FTEs. However, the formula itself can be applied by deriving benchmarks.

Compensation data were compiled for fiscal years 2007/2008 to 2012/2013 through the Department of Health and Social Services (DHSS). These data were used to calculate benchmarks and to construct FTEs based on compensation levels for each physician. Most of the compensation to physicians in Yukon Territory is through fee-for-service (FFS) billings; however, there are alternative payment programs (APPs) and other contracts in place to ensure services throughout the territory. Although the formula to construct FTEs was conceived based on FFS payments, it was applied against the combined compensation of the Yukon physicians. Separate benchmarks were prepared for GPs and for specialists. Given the small pool of physicians in the territory, calculation of the benchmarks was based on payments across all six years of data.
Results of the FTE calculations have been summarized in Compendium 118a. Information provided by DHSS indicated where physicians provided services through locums. The summary presents the results with locum tenens included and with locum tenens separately. The table also separates GPS from Specialists. The data indicate an increasing volume of physician involvement over time, with 125 FTEs in 2012/2013, including locums and visiting specialists. This was an increase of 33% over 2007/2008 where there were 94 FTEs. Of the 125 FTEs in 2012/2013, 96 were GPs and 29 were specialists. The number of locum tenens physicians has increased over time as well. The figure in 2012/2013 was estimated at 43, up from 23 in 2007/2008. Most of the locum tenens physicians (41 FTEs) were GPs; 2.5 FTE were specialists.

The FTE analyses of family medicine revealed two scenarios using standard methodologies. The first methodology is a direct application of the Health Canada approach, using benchmarks from Yukon Territory data, and the second uses Yukon Territory benchmarks inflated with mean payments from the National Physician Database (CIHI). The payment data rolls in FFS, shadow billing information (where available), and contract information as well. Use of the Yukon Territory data is valid (it uses the territory’s own information and includes a broader cross-section of payment information than NPDB only), the territory does not operate in a vacuum, and it is not a large pool of physicians on which to base estimates. The NPDB information draws on a large pool of physician and appears to show higher levels of compensation. The following year-over-year conclusions on FTEs can be calculated:

**Exhibit 04-20**

**FTE Calculations for Yukon Territory Physician Services**

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<td>55.0</td>
<td>63.1</td>
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<td>64.6</td>
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<td>70.4</td>
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<td>Specialists</td>
<td>YT</td>
<td>9.8</td>
<td>10.9</td>
<td>12.2</td>
<td>12.4</td>
<td>11.7</td>
<td>11.2</td>
</tr>
<tr>
<td></td>
<td>AB</td>
<td>0.8</td>
<td>0.3</td>
<td>0.3</td>
<td>0.2</td>
<td>0.5</td>
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<tr>
<td></td>
<td>BC</td>
<td>6.6</td>
<td>6.6</td>
<td>6.7</td>
<td>7.9</td>
<td>8.9</td>
<td>9.9</td>
</tr>
<tr>
<td></td>
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<td>0.0</td>
<td>0.1</td>
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<tr>
<td></td>
<td>NT</td>
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<td>1.0</td>
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<tr>
<td>Specialist Total</td>
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<td>20.2</td>
<td>21.7</td>
<td>22.2</td>
<td>21.7</td>
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<td>Total</td>
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<td>72.2</td>
<td>81.0</td>
<td>85.3</td>
<td>86.3</td>
<td>87.0</td>
<td>92.2</td>
</tr>
</tbody>
</table>
Of the 21.7 FTE specialists in 2012/2013, 4.8 FTEs were General Surgeons, 2.6 FTEs were Obstetricians and Gynecologists, and 2.7 FTEs were Orthopaedic Surgeons. The engagement of other specialists is tabulated in Compendium 118b.

The majority of GPs were located in Yukon Territory, as anticipated. Just over 11 (11.2) of the 29 specialist FTEs were also located in Yukon Territory; 9.9 FTEs were identified as being from British Columbia (Compendium 119).

Compendium 120 contains data from the Scott’s Medical Database for 2012, as published by CIHI. Scott’s Medical Database includes almost all physicians in Canada, providing a powerful resource for physician supply and migration information.

There appears to be relatively even split between female and male practitioners. Of particular interest is the age of Yukon practitioners as an indicator of potential pressures to replace retiring physicians.

Compendium 122 presents an age profile of Yukon physicians by gender. The average age cited is 49.8 years, compared to the national average, 50.4 years. A higher proportion of Yukon Territory physicians received their MD less than six years previously (7.6%), compared to the national average (4.8%). The majority of physicians are under 60 years of age (45 of 56). The 60-64 year old group has 7 of the 56 physicians (13%) potentially likely to retire in five years. Four more practitioners are over 65 and are at traditional retirement age. These figures correspond closely to figures obtained from DHSS: 14 at 20-39 years, 18 at 40-49 years, 22 at 50-59 years and 12 over 60 years (Compendium 123).

4.10.2 Nurses and Allied Health Professionals

DHSS provided information on Nursing and Allied Health Professionals in Yukon Territory. The information is assembled in three blocks: Health Services, Continuing Care and Social Services. For each block, the information is tabled: by community, by branch, and by program. This information has been presented in Compendium 124 to Compendium 128.

The following observations are provided for Health Services:

- Across the territory, 195 practitioners (182 FTEs) were identified as involved in the provisions of health services; 65 are full time. There are 94 on-call FTEs, and 36 practitioners are part-time (23 FTEs)
- Most of the resources (148 individuals, 137 FTEs) reside in Whitehorse
- 124 individuals (116 FTEs) are involved in Community Nursing; 67 (62 FTEs) are involved in Community Health
- 54 individuals (52 FTEs) are assigned to General Programs; 29 (26 FTEs) work from the Whitehorse Health Centre
• 24 individuals (23 FTEs) work in mental health positions

• 14 individuals (12 FTEs) are involved in Communicable Disease Control

The following observations are provided for Continuing Care:

• 387 individuals (360 FTEs) are involved in Continuing Care, mostly in Whitehorse (382 individuals, 356 FTEs)

• The majority of staff (276 individuals, 266 FTEs) are involved in Extended Care Services; 88 (72 FTEs) are in the Care and Community Branch

• Extended Care services has not managed to use underpinning data; dementias and psychoses will be workload drivers as will increased survivorship

• 183 individuals (178 FTEs) are situated at Copper Ridge Place; 54 individuals (50 FTEs) are at Macauley Lodge and another 39 (38 FTEs) are at the Thomson Centre

• 88 individuals (72 FTEs) are assigned to Home Care Services

The following observations are provided for Social Services:

• 373 individuals (365 FTEs) provide Social Services; 332 (326 FTEs) are located in Whitehorse.

• 229 individuals (224 FTEs) work in the Family and Children's Branch; 119 (116 FTEs) work in Adult Services

• 95 individuals (94 FTEs) work in Residential Youth Treatment Services

• 65 individuals (63 FTEs) work in Alcohol and Drug Services areas

**Compendium 129** identifies resources by department and branch, by position, and by community. The list includes HSS positions in Community Nursing (34 positions), Regional Services (14 positions), Health Services (4 positions) and Continuing Care (1 position). There is one Paramedic in Dawson City assigned to the Emergency Measures Organization. Twenty-five (25) positions are identified as being associated with the Yukon Hospital Corporation. A number of positions are unfilled, for example three HSS - Continuing Care and one HSS - Mental Health Services positions in Dawson, and one HSS - Regional Services position in Watson Lake.

**4.10.3 Community Programs**

Community Programs have been established around regional boundaries by the Community and Programs Services Branch (CPS) at the DHSS. Ten communities have been described in **Compendium 130a**.

Staff allocations for Community Nursing programs are tabled in **Compendium 130b**. Sixty-seven (67.0) FTEs are distributed across 14 communities, along with 5 floats. Fourteen (14.0) FTEs
are assigned in Whitehorse. Mayo and Haines Junction have 5.4 and 5.2 FTEs, respectively. Twelve (12.0) FTEs work at the head office.

Program Directors have identified resident and itinerant allied health professionals working under CPS. The FTEs have been presented in Compendium 131a and Compendium 131b. In Whitehorse, there are 109 FTEs, of which 26.0 FTEs are in community nursing, 32.0 FTEs are with Alcohol and Drug Services, 36.0 FTEs are in Continuing Care. Seventy-seven (77.0) Community Nursing FTEs are distributed among fifteen communities, along with 5 floats. Sixteen (16.0) FTEs are allocated to CPS regional services in ten communities. A more detailed listing of the positions is given in Compendium 132.

4.11 Visiting Specialists

The metric summary of visiting specialist in Yukon Territory are provided in Appendix A. 6 on page 282; this includes assessment of waiting times, effective January 28, 2014. It is important to view the waiting times as a representation of a backlog; there are inherent variables to wait lists that are not explored further, including:

- Is the referral appropriate and reflect best practice?
- When is the waiting time measurement initiated?
- Is a delay the consequence of a patient’s choice?
- Is a delay the consequence of adjustment to the priority level by the specialist?
- Is the patient on more than one wait list?
- Is the patient still on the wait list or just recorded as such?
- How is improvement or worsening on a wait list determined?

Within the limitations of these data, as noted earlier, particularly in the context of potential repatriation and recruitment, a background issue will always be whether elimination of the wait list also eliminates the need (or demand). Separate further analyses would be required to answer these questions.

That notwithstanding, these data do suggest merit in consideration of recruitment:

**Exhibit 04-21**

<table>
<thead>
<tr>
<th>Discipline</th>
<th>Secondary Considerations</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cardiology</td>
<td>Issue is equipment and need for urgent intervention</td>
</tr>
<tr>
<td>Dermatology</td>
<td>Issue is whether telehealth is underused</td>
</tr>
</tbody>
</table>
There are approximately 30 Pharmacists in Yukon Territory; all are in Whitehorse, with five at the hospital and the others associated with five community pharmacies. The immediate challenge for the profession is recruitment and a convergence of outdated legislation (reportedly imminent) and the absence of a territorial regulatory body.

The position of the Yukon Pharmacists Association, going into consultations on the new legislative framework, is summarized, as follows:

- Emergency prescription refills, protected by legislation
- Renewal or extension of prescriptions
- Dosage adjustment
- Management of chronic conditions
- Therapeutic substitution
- Emergency contraception
- Smoking cessation

The current system functions other than patient-centred due to the need to return, unnecessarily, to a physician’s office; as well, the absence of online adjudication is logistically challenging for the community pharmacists.
### 4.13 Key Findings Summary

|   |  
|---|---
| **Summary** | **Territorial Profiles**
| **Population Profiles** |  
| 4.1 There is no regional structure for the delivery of health and social services in Yukon Territory. The population is primarily concentrated in distinct communities. Eighteen communities have been identified in population estimates for the territory. Fourteen of these have health centres and constitute the study cohort. |  
| 4.2 Yukon Territory continues to experience a growth in Gross Domestic Product and overall economic stability; overall employment rates are favourable, but these analyses are skewed by Whitehorse data that override significant unemployment outside Whitehorse. |  
| 4.3 Low income families and individuals are prevalent outside Whitehorse; low income correlates with decreased health status. |  
| 4.4 Population demographics provide one description of Yukon Territory, but with less than ideal confidence; however, it is evident that the highest rate of population growth by age cohorts over the next ten years will be those over 60 years of age. |  
| 4.5 Migration is the greatest driver of population increase in Yukon Territory. |  
| 4.6 Mortality rates in Yukon Territory are significantly greater than the national average; 34% of deaths were related to cancer; 28% of deaths related to cardiac events; and, 9% involved alcohol. |  
| 4.7 Between 25% and 30% of the population of Yukon Territory self-identify as First Nations. |  
| 4.8 Social and support services are the largest deficit in rural and remote Yukon Territory. |  
| 4.9 Rural and remote communities experience severe housing shortages and secondary health and social services consequences. |  
| 4.10 The services provided by the Child Development Centre are highly valued and seen as an area of expansion, having a clear return on the investment; the current program suffers from the need for more frequent visits and, especially, from the requirements of a referral, specific diagnosis, and attendance at school. |  
| 4.11 The absence of rural shelters for both men and women is considered a serious issue for rural and remote communities. |  
| 4.12 Transportation, especially to Whitehorse, is a serious rural and remote issue due to expense, inefficiency, and imbalance between First Nations and non-First Nations communities. |  

### Health Centre Profiles
### Territorial Profiles

#### 4.13
Health centres outside Whitehorse are profiled individually in the report; general themes were evident in the areas of health and social services across the territory, as follows:

- Two of the health centres are single nurse stations; concerns are significant with respect to safety and sustainability of a single nurse model
- Physician visits (with the exceptions of Dawson City, Watson Lake, and Mayo) are relatively infrequent; Watson Lake is served by locum tenens physicians, leading to concerns regarding future resourcing
- Despite the 2012 enactment of supportive legislation, there are no Nurse Practitioners (NP) practising outside Whitehorse; the NP in Whitehorse has been unable to acquire hospital privileges
- Little collaboration is evident, in many health centre locations, between health and social services
- Mental health services are in a significant deficit outside of Whitehorse
- Alcohol and drug services (ADS) are in a significant deficit situation outside of Whitehorse; this include all aspects of ADS care, including the general absence of aftercare and a high rate of recidivism
- Telehealth is underused despite many instances of possible value and cost savings
- Chronic disease management protocols require additional support in the rural and remote Yukon Territory
- Palliative care is inconsistent outside Whitehorse and, frequently, not available
- Requirement for increased health promotion
- Requirement for enhanced dental services outside of Whitehorse

### Epidemiology Profiles

#### 4.14
Hospitalized acute myocardial infarction (AMI) events have increased by 30% from 2007 to 2011, and more sharply among females (46%) than males (34%).

#### 4.15
Hospitalized stroke events have fallen over the same period by 43% (56% for females, but only 18% for males).

#### 4.16
Hospitalization for injury has declined 15% (22% for males and 3% for females).

#### 4.17
Hospitalizations for Ambulatory Care Sensitive Conditions (ACSC) (2006 Revision) have risen by 7% from 2007 to 2011 (12% among females, and declined slightly, by 2%, for males); this can indicate decreased access to primary care and the attendant use of clinical practice guidelines.

#### 4.18
Caesarean Sections have declined marginally (7%) over that period; rates among urban residents is marginally higher than rural residents over the period 2007/08 to 2011/12 (23.7 versus 22.6).

#### 4.19
The rate of visits to General and Family Practitioners fell by 18%, but visits to specialists rose by 23%.
## Terriorial Profiles

<table>
<thead>
<tr>
<th>Section</th>
<th>Summary</th>
</tr>
</thead>
</table>
| 4.20    | • Coronary Artery Bypass Grafts (CABGs) rose by 32% from 2007 to 2011 (following a dip in the previous two years); the increase for males was 51%  
• Hip replacements declined by 5%, but that was attributable to a 24% drop among males, whereas there was a 9% increase among females  
• Knee replacements rose 31% (attributable to an increase over 100% for males)  
• Percutaneous Coronary Interventions (PCIs) rose 30% (27% for females and 35% for males)  
• Cardiac re-vascularization procedures rose by 30% (20% among females and 40% among males)  
• Hysterectomies rose by 7% |
| 4.21    | The number of incident ESRD patients has doubled over an eight year period from 2004 to 2011 (10 to 21 patients) The number of prevalent ESRD patients has also risen, from a low of 623 in 2003 to 773 in 2011. |
| 4.22    | Injury rates are a sentinel indicator of risk in a society. Hospitalizations for unintentional injuries have risen in recent years to nearly 400 in 2012/13 from about 250 in 2001/02. Correspondingly, the rates per 100,000 have risen from 835 to 1,092 over the same period. On the other hand, rates of hospitalization for intentional injury, while generally seeing an increase through this period (from a low of 135 per 100,000 to a high of 258), saw the lowest level in 2012/13 (120). |
| 4.23    | Hospitalization indices for mental illness (787) surpass the corresponding data significantly (489) while the mental illness patient days (541) are significantly less than the corresponding Canadian data (707); this indicates greater rates and shorter stays that could reveal early discharges or the absence of community support. |

## Utilization Profiles

<table>
<thead>
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<th>Section</th>
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</tr>
</thead>
<tbody>
<tr>
<td>4.21</td>
<td>On health care availability in the territory, 61% of rural residents gave a rating of “good or excellent,” compared to 71% among urban residents. The gap widens when asked to rate availability of health care in the community - to 55% as compared to 72%.</td>
</tr>
<tr>
<td>4.22</td>
<td>Hospitalizations for injury in Yukon Territory substantially exceed those in Canada as a whole: 1,159 per 100,000 population versus 516, age-standardized.</td>
</tr>
<tr>
<td>4.23</td>
<td>Avoidable mortality refers to untimely deaths that should not occur in the presence of timely and effective health care or other public health practices, programs, and policy interventions. It serves to focus attention on the portion of population health attainment that can potentially be influenced by the health system. The mortality rate per 100,000 for Yukon Territory was 254 versus 183 for Canada. PYLL per 100,000 for Yukon Territory was 5,043 versus 3,353 for Canada.</td>
</tr>
</tbody>
</table>
4.24 Other indicators (as age-standardized rates per 100,000) are:
- Hospitalized hip fracture events (65 years and older): 848 (Canada 435)
- Ambulatory Care Sensitive Conditions: 507 (Canada 290) - often referred to as avoidable admissions
- 30-Day Readmission:
  - Medical: 16.0 (Canada 13.4)
  - Surgical: 9.6 (Canada 6.6)
  - Obstetrical: 2.8 (Canada 2.0)
- Self-injury hospitalization: 175 (Canada 67)
- Mental illness hospitalization: 787 (Canada 489)
- Mental illness patient days: 541 (Canada 707)

4.25 At 74%, the CTAS 4 and 5 scores at Whitehorse General Hospital are significantly high; this indicates that patients are coming to the Emergency Department with very minor conditions, potentially not able to access primary care.

4.26 Per capita consumption alcohol in Yukon Territory is the highest in Canada by a significant margin.

4.27 Examining medical travel data for 2008 through 2013, paid amounts rose to over $6.5 million from $1.5 million in 2008, a 33.3% increase. Claims rose from just under 5,000 to nearly 11,000 over the same period. Medical Evacuation (Medevac Air) accounted for the largest amount of expenditures, currently over $4 million. Subsidies account for $1.5 million and mileage, another $700,000. Claims amounts for insured residents constituted $5.2 million in 2013. Nearly $1.1 million was for NIHB claims (recovered funding). One-way trips accounted for $4.4 million, and $2.3 million for round trips.

4.28 Medical travel is complex, expensive, and incompletely understood; a full analytic process is required, apart from this study, to develop cogent arguments for reform. This study supports such a separate initiative to be undertaken by a resource, expert in medical travel and emergency care.

4.29 66 resident and 185 visiting physicians provide care to the residents of Yukon Territory over the course of the previous fiscal year. For GPs, CIHI, using 2012/2013 data and the Health Canada FTE methodology, determined that the combined resident and visiting GP complement was 70.4 FTE. This calculation is very high for a population of approximately 35,000 people and is inconsistent by other datasets that indicate many patients do not have access to primary care physicians.

4.30 Visiting specialist data and CIHI FTE data converge to support the concept of increasing the complement of General Surgeons and Obstetricians, and attempting to recruit to repatriate services provided by Orthopedic Surgery, Ophthalmology, and Paediatrics.
### Territory Profiles

#### 4.31

Utilization rates based on age-gender cohorts by community were used to project future amounts for physician services. Rates for 2012/13 only and for an average across multiple years (2007/08 through 2012/13) have been prepared. Population estimates from each of the three projection scenarios were applied for five and ten year horizons. Although figures are presented by community, only the overall figures for Yukon Territory (or for Whitehorse) are considered to be stable.

For projected amounts based on single year (2012/13), utilization rates only are higher than when multi-year averages are used. The five year trend scenario, based on single year rates, returns the highest increases over the ten years (31%). Estimated increases for the 10-year and 2-year scenarios are 25% and 21%, respectively. The corresponding increases using average multi-year rates are 27%, 33% and 24%, for the 10-year, 5-year and 2-year scenarios, respectively. They appear to grow more rapidly, but start from a lower base in 2014 than the single year estimates. In general, the estimates are closely aligned.

#### 4.32

The following observations are provided for DHSS Health Services providers:

- Across the territory, 195 practitioners (182 FTEs) were identified as involved in the provisions of health services; 65 are full time. There are 94 on-call FTEs, and 36 practitioners are part-time (23 FTEs).
- Most of the resources (148 individuals, 137 FTEs) reside in Whitehorse.
- 124 individuals (116 FTEs) are involved in Community Nursing; 67 (62 FTEs) are involved in Community Health.
- 54 individuals (52 FTEs) are assigned to General Programs; 29 (26 FTEs) work from the Whitehorse Health Centre.
- 24 individuals (23 FTEs) work in mental health positions.
- 14 individuals (12 FTEs) are involved in Communicable Disease Control.

#### 4.33

The following observations are provided for DHSS Continuing Care providers:

- 387 individuals (360 FTEs) are involved in Continuing Care, mostly in Whitehorse (382 individuals, 356 FTEs).
- The majority of staff (276 individuals, 266 FTEs) are involved in Extended Care Services. 88 (72 FTEs) are in the Care and Community Branch.
- Dementias and psychoses will be workload drivers, as will increased survivorship from previously data illness.
- 183 individuals (178 FTEs) are situated at Copper Ridge Place. 54 individuals (50 FTEs) are at Macaulay Lodge and another 39 (38 FTEs) are at the Thomson Centre.
- 88 individuals (72 FTEs) are assigned to Home Care Services.

#### 4.34

The following observations are provided for DHSS Social Services providers:

- 373 individuals (365 FTEs) provide Social Services; 332 (326 FTEs) are located in Whitehorse.
- 229 individuals (224 FTEs) work in the Family and Children’s Branch; 119 (116 FTEs) work in Adult Services.
- 95 individuals (94 FTEs) work in Residential Youth Treatment Services.
- 65 individuals (63 FTEs) work in Alcohol and Drug Services areas.
<table>
<thead>
<tr>
<th>Summary</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pharmacy services appear likely to expand after the legislative process that will examine the Pharmacy Act; some of those services are currently being provided by primary care physicians.</td>
</tr>
</tbody>
</table>
5.1 Core Services

Conceptually, core services are uncomplicated, described as an evidence-based understanding of population health service needs that carry expectations of timely and efficient access. At a level of detail, the application of core services is a complex challenge. Canadian experience with defining and implementing core services is best demonstrated in British Columbia, Manitoba, Ontario, and Nova Scotia. It is important to stress that a particular jurisdiction must identify its own core health and social services; core services from one jurisdiction are not automatically transferrable.

5.1.1 British Columbia

The Interior Health Authority of British Columbia spans 215,000 square kilometres. Only 11 of the 58 incorporated communities in the health authority have a population greater than 10,000. Interior Health is also home to 55 First Nations communities, the majority of which are rural. The DHA is divided into four health service district areas (HSDAs) and 31 local health authorities (LHAs). Its geography is challenging for travel, making the definition and application of core services an essential component of health system planning. Commute time was an equal or more heavily weighted factor than kilometre distance from point A to point B.

The Interior Health Authority defined core health services, as follows:

**All communities in all LHAs:**
- Health Promotion/Education
- Health Protection, Prevention and Community Health Services
- Primary Health Care
- Home and Community Care
  - Home support
  - Home nursing care
  - Community rehabilitation

**Communities of approximately 2,000 to 4,999 population have the following additional services:**
- Acute Care (delivered by family practice)
  - Community Level 1 Hospital
  - Family practice delivered treatment services (acute and chronic care services)
Key Concepts

- Emergency health services
- Diagnostic laboratory and x-ray services

- Home and Community Care
  - Assisted living
  - Residential care
  - Short stay
  - Adult day services

- Mental Health and Addictions Services
  - Mental Health Centre
  - Addictions programs and services

**Communities 5,000 and larger will generally provide secondary level care, as follows:**

- Provided in large community and regional hospitals, and to include emergency, general medical and surgical, anaesthesia, psychiatric, paediatric, obstetric, and diagnostic services

Each of the four HSDAs will include at least one urban centre having the following additional services:

- Urology, orthopaedics, ophthalmology, and neurology

**Tertiary care is provided in the largest urban centres** (Kelowna and Kamloops) and to include neurosurgery, cardiothoracic surgery, transplant services, specialized medical, obstetric, paediatric, gynecological, and psychiatric services.

**Quaternary services** are provided at the largest urban centres or referred to Vancouver or out-of-province (paediatric cardiac surgery).

A conceptual core services model can be contemplated for Yukon Territory, modeled after Interior Health.

### 5.1.2 Manitoba

Manitoba Health conducted a detailed study to define core services for northern and rural areas of the province. The starting point was that all health services are “core” but not all health services would be provided within all district health authorities. Some core health services would remain the primary responsibility of central agencies or Manitoba Health, due to safety and efficiency considerations. They next defined those services that all district health
Key Concepts

authorities would deliver, using a robust, detailed community health needs assessment (CHNA). The findings from the CHNA identified the following services as core:

- Health Promotion/Education
- Health Protection
- Prevention and Community Health Services
  - Reproductive health, pregnancy/childbirth and parenting
  - Family health
  - Diabetes education, and
  - Other listed services
- Treatment, Emergency and Diagnostic Services
  - Treatment services (acute and chronic care services)
  - Emergency health services
  - Diagnostic services
- Developmental and Rehabilitation Support Services
- Home-Based Care Services
  - Assessment, care planning and coordination, direct services, and process for managing long-term care placement
- Long-Term Care
- Mental Health Services
  - Assessment/identification services
  - Acute care treatment
  - Intensive case management
  - Long-term care and treatment capacity
  - Number of other listed services
- Substance Abuse and Addictions
  - Detoxification, treatment, and after-care
Key Concepts

- Palliative Care (hospital and home-based)

**Treatment, emergency, and diagnostic services were further defined, as follows:**

- **Primary** care is a basic level of care and, usually, a first contact with a nurse, physician, or other health professional. All regions were mandated to provide primary care services to residents. These services can be delivered at home, on an outpatient basis, or in residential facilities, clinics, or community health centres.

- Specialty-trained physicians and other health professionals provide **secondary** care in large community and regional hospitals, as well as in teaching hospitals. Secondary care, mandated for all regions, includes emergency, general medical and surgical, anaesthesia, psychiatric, paediatric, obstetric, and diagnostic services.

- **Tertiary** care refers to more specialized diagnostic and treatment services that are provided on referral from other hospitals or physicians. Tertiary services are those that cannot be efficiently or safely provided in most health regions because a large population base is not available to produce the number of cases required to sustain competence and reliable outcomes. These services include neurosurgery, cardio-thoracic surgery, transplant services, specialized medical, obstetric, paediatric, gynaecological, and psychiatric services.

- **Quaternary** services refer to the most technically demanding level of acute inpatient care, for people with extremely complex or rare medical conditions and requiring highly specialized care. The demand for service at this level would be very low and could include other provinces or territories.

A conceptual core services model can be contemplated for Yukon Territory, modeled after rural and northern Manitoba. The Manitoba report also identified the key requirements of an effectively integrated province-wide system of primary, secondary, tertiary, and quaternary care, namely, patient transportation, diagnostic sampling, testing, and reporting.

**5.1.3 Ontario**

An Ontario Joint Policy and Planning Committee report to the Ministry of Health defined the core service role of small hospitals. The report defined small hospitals as those with fewer than 4,000 inpatient weighted cases per year, and divided these hospitals into two groups:

- Very Small: < 1,500 Weighted Cases (62 sites); and

- Small: 1,500 to 3,999 Weighted Cases (31 sites).

The Ontario report identified the following as core services for the very small hospitals and associated population centres:

- Emergency services
Emergency departments must be prepared to provide care to or stabilize and transfer patients, as indicated

- Medicine program with inpatient medical beds;
- General and family practice, supported by broadly-trained nurses;
- Inpatient allied health services, such as:
  - Physiotherapy, Clinical Nutrition, Occupational Therapy, Respiratory Therapy, Speech Pathology and Pharmacy; and,
  - Determined by a needs assessment
- Diagnostic services, such as:
  - Laboratory, Ultrasound, General Radiography, and Non-invasive Cardiology.

This definition is comparable to the fewer than 4,999 population centres, categorized in Interior Health in British Columbia.

For the group of relatively larger small hospitals, whose inpatient activity ranges from 1,500 to 4,000 weighted cases, the Advisory Group recommends that core services include all of the basic core services identified for very small hospitals above, PLUS:

- Surgical and medical specialties, to include
  - General surgery and day surgery program;
  - Obstetrics program; and
  - Special Care Units with the ability to accommodate temporarily ventilated patients.

### 5.1.4 Nova Scotia

Nova Scotia has re-examined clinical service delivery models and plans, informed to some degree by the implementation of the 2012 Physician Resource Plan. The plan incorporated core services modeling. Preliminary considerations included the following categories of core services:

- **Community-based care** with less than 30,000 catchment area
  - Urgent Care Centre, ER Level 4, or other ER alternative, such as EMS
  - Family practice, satellite dialysis, acute, home, and long-term care
Matters of scope were further defined in concert with primary health care, emergency health care, mental health services, continuing care services, and the work of the Better Care Sooner initiative.

- **District Hospital** 30,000-100,000 catchment area
  - Level 3 ER and ICU
  - Anaesthesia, general surgery, general internal medicine, satellite oncology and dialysis, routine diagnostic services, restorative and rehabilitative care, obstetrics in primary maternity care and low risk deliveries, geriatric care, and palliative care

- **Cross District /Major Acute** 100-300,000 catchment area
  - Level 2 ER and ICU
  - All services listed in District Hospital; plus
  - Some specialty medicine (e.g., cardiology)
  - Some specialty surgery (e.g., urology, orthopedics, plastics)
  - Pathology
  - General paediatrics

- **Provincial Health Centre**
  - Provision of comprehensive services

Better Care Sooner reviewed the emergency services delivery system, identifying collaborative, community, regional, and provincial levels. Access standards prescribed staffing levels, mix, and availability, with less attention to volume and acuity. Improved coordination of services is required (such as, stroke care being reorganized in hospitals to provide coordinated and comprehensive care).

### 5.2 Rurality and Remoteness

The assessment, or measurement, of rurality has important implications to the planning and delivery of health care services. Much of the seminal work in this area originated in studies conducted in the United States and Australia, with particular attention paid to nursing practice. Not uncommonly, survey tools have been utilized as the vehicle for database development. The subjectivity of a survey methodology minimizes the usefulness of the information collected. In matters of resource planning and allocation, an objective rurality index can be much more meaningful.
Areas of rural and remote populations have been identified statistically as experiencing lower health status than urban populations. This can include examination of life expectancies, overall mortality, mortality rates, and infant mortality rates. While there are many social and age factors that underlie this disparity in health status, it can be surmised that difficulties in recruiting and retaining health care providers to rural and remote areas are compounding factors, as well as the time and distance to receive medical services.

Even the definition of “rural and remote” is not uniform in the related literature. It has been referenced as narrowly as “not urban” or defined by strict geographic criteria, unfortunately applied variability in different jurisdictions. No single definition has been accepted nor applied in research, policy, or planning. Statistics Canada uses the “not urban” standard, with urban defined as an area with a population concentration of at least 1,000 and a population density of at least 400 per square kilometre. Other initiatives utilize various population thresholds relative to distance from a population base of another threshold.

Perhaps, more important than a definition is an understanding of the characteristics of rural and remote communities. From these characteristics, it becomes possible to develop objective rurality indices.

An attempt to measure rurality was undertaken as a multistakeholder initiative of the Canadian Medical Association, the Society of Rural Physicians of Canada, the Canadian Nurses Association, and the Canadian Pharmacists Association. This project used expert resources from the sponsoring organizations and commissioned an external survey. It determined ten factors, by ordinal ranking and profession, from which a scoring system from 1 to 5 was developed for each factor. This is a useful piece of work as part of the development of national thinking about rurality indices; however, the scoring and its application lacked the rigour to be applied broadly.

In 2002, the Ministries of Health Services and Health Planning in British Columbia constructed provincial standards of accessibility to ensure services as being the most appropriate within available resources. This report offered a framework for sustainability and quality of care for emergency services, acute inpatient services, and specialty services. Not in the format of an actual rurality index, the report developed provincial standards, based on access time for each element of service, applicable to 98% of a regional population and 95% of a health service delivery area population. The following factors were deemed important in reviewing the quality of acute care services: population and demographics, professional competence, critical mass, and distance and geography.

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32 Standards of Accessibility and Guidelines for Provision of Sustainable Acute Care Services. Ministry of Health Services and Health Planning, British Columbia; 2002
The most relevant undertaking to measure rurality, as an empirical measure, was carried out for purposes of health care planning and initially reported in 2000. Kralj’s work represented the first attempt to operationalize a continuous measure of rurality, and only the second attempt to address it in a substantial manner. Leduc measured variables that included remoteness (distance to basic and advanced medical care), population, physician numbers, and the presence of an acute care hospital, with the greatest weighting afforded to remoteness.

Kralj quotes results from a Canadian Medical Association survey of rural physicians in which respondents ranked 21 possible characteristics and factors that define a rural community from their professional perspectives. The resulting ten factors defining rurality were:

1. High level of on-call responsibility
2. Long distance to secondary referral centre
3. Lack of specialist services
4. Insufficient numbers of General and Family Physicians
5. Long distance to tertiary referral centre
6. Absence of diagnostic equipment
7. Difficulty in obtaining locum tenens support
8. No ambulance service
9. Inability to provide obstetrical and surgical services
10. Sparsely populated catchment area

The paper identified three categories within which to consider factors of rurality:

1. Community and lifestyle
2. Nature of rural practice
3. Professional isolation and support

In developing the rurality index for Ontario (RIO), Kralj adhered to three basic principles:

1. Policy relevance, where the index, so derived, must serve a clearly defined purpose, with specified analytic and/or policy objectives in its application
2. Empirical reliability, where the index must be built on available and timely data, and within resource limitations

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33 Kralj B. Measuring “rurality” for purposes of health care planning: an empirical measure for Ontario. OMR. 67 (9); 2000

3. Analytical reliability, where the index must have a sound scientific basis, with the analytical concepts founded on strong theoretical models.

Using the rural factors, as ascertained, and consistently applying the basic principles, Kralj constructed a rurality index using ten distinct components. The lengthy formula and scoring system rates communities by rurality parameters, with a higher overall point score considered more rural than a lower score. The final values can be transformed so that the values range from a low of zero (least rural) and a high of 100 (most rural).

The metric is intended as an ordinal measure rather than a cardinal measure. Therefore, if Community A and Community B have rurality scores of 60 and 30, respectively, it can be stated that Community A is more rural relative to Community B; it does not necessarily mean that Community A is twice as rural as Community B.

The rurality index was envisioned as an element of policy development. The objectivity of the measurement assists, as well, in the scaling of incentive structures. Its complexity was addressed, in 2008, through a revision that incorporated three basic metrics and adapted for Yukon Territory within the following formula:

**Basic rurality index = Population + Timeₐ + Timeₜ**

Where:

- **Population** = a measure of community population and population density (implicit weighting of 28.6%)
- **Timeₐ** = Measure of travel time to nearest advanced referral centre (implicit weighting of 23.8%)
- **Timeₜ** = Measure of travel time to nearest basic referral centre (implicit weighting of 47.6%)

Most factors are a relative measure to the territorial median, as demonstrated in the following formulaic details of the components:

**Population**

The availability of many health services is positively or directly related to the size of the population. Also, it is a fact that rural areas are less densely populated than urban areas. As a result rural GP’s may have to travel longer distances for house calls or may have responsibility for satellite clinics at large distances from their home community. This component of the index awards points in a linear fashion.

An additional 5 points can be awarded to communities based on population density or dispersion relative to the territorial median population density. All population data and population density figures are for 2006 and provided by Statistics Canada.
Distance to referral centres is an important element which impacts scope of practice, levels of responsibility and on-call, as well as professional and social isolation of providers and their families. Issues of transportation and travel times have particular importance in rural areas. Typically, rural residents have greater transportation difficulties and often travel longer distances to receive health care. Lack of adequate public transportation in rural areas also creates a barrier to receiving care. The transportation system available to a community determines its degree of isolation. Rural areas served by higher quality transportation corridors will typically have better access to health services. A developed road system creates access for patients to local services and facilitates a referral system that links clinics to hospitals, and small hospitals to larger, tertiary care centres.

A basic referral centre is characterized by a population greater than 10,000 with the following specialty services: Family Medicine, Anaesthesiology, Diagnostic Radiology, General Internal Medicine, General Surgery, Obstetrics and Gynecology, Orthopaedic Surgery, Paediatrics, and Psychiatry. An advanced referral centre is characterized by tertiary and quaternary care. For the Yukon Territory rurality calculations, the advanced centre is Vancouver, British Columbia.

Travel times, measured in minutes are based on the quickest route via roads and highways, accounting for different classes of road, and hence travel speeds. Adjustments are incorporated if air travel is required due to no road access. Road classifications are; (i) major road with default speed of 60 km/hr, (ii) regional road with default speed of 75 km/hr, (iii) highway with default speed of 90 km/hr, and (iv) expressway with default speed of 100 km/hr. Travel speeds and distances combine to estimate travel time; for Yukon Territory calculations, the travel times are estimated to Whitehorse due to the formulaic constancy to travel to Vancouver by air (Time \( a \)).

Old Crow is unique as a fly-in community; its measurement, therefore, requires air time to Dawson City and road time to Whitehorse.

Kralj’s model was developed on the basis of data from Ontario. Ontario is comprised of nearly 600 census subdivisions (CSD). Approximately 200 CSDs were eliminated in the formulation of the model. CSDs excluded were unorganized territories, Indian reserves and settlements, and CSDs with populations less than 500 people. This presented a challenge for the direct application of the formula to the Yukon.

In applying the formula, the overall structure of the model was maintained: the formulaic construction, parameters, and the respective weighting of the component terms. The median population of the Yukon Territory and the median population density were considered to be fixed reference points against which each of the Yukon communities would be compared.

Population counts and densities were obtained from Statistics Canada, based on 2011 Census data. While the CSD population counts may not coincide directly with population counts cited...
elsewhere in this report, they maintain a consistency with the areas used to calculate population densities cited in the census results.

Driving distances were obtained from information available through a number of online travel time calculators (e.g. http://www.travelintheyukon.com/Mileage.cfm). The flight time from Old Crow to Dawson City was taken from Air North’s scheduled flight times.

The empirical specifications are, as follows:

**Population** = \[25 - 3.79 \left( \frac{P_{06}/P_{M}}{P_{D}/17.3} \right) \] + \[5 - \left( \frac{P_{D}/17.3}{P_{D}/17.3} \right) \]

If \[25 - 3.79 \left( \frac{P_{11}/P_{M}}{P_{D}/17.3} \right) \] < 0 then set \[25 - 3.79 \left( \frac{P_{11}/P_{M}}{P_{D}/17.3} \right) \] = 0

If \[5 - \left( \frac{P_{D}/17.3}{P_{D}/17.3} \right) \] < 0 then set \[5 - \left( \frac{P_{D}/17.3}{P_{D}/17.3} \right) \] = 0

Total population of CSD in 2011 = \(P_{11}\)

Median population of CSDs in 2011 (439) = \(P_{M}\)

Median population density of CSDs (17.3 persons/sq.km.) = \(P_{D}\)

**Maximum possible score** = 30

**Minimum possible score** = 0

**Time a** = \[\left( \frac{T_{a} - T_{aM}}{T_{aM}} \right) \times 10\]

If Time _a_ > 15 then TIME\(_a\) = 15

\(T_{a}\) = Minutes of travel time to nearest advanced referral centre

\(T_{aM}\) = Median travel time = 135 minutes (flight time)

**Maximum possible score** = 15

**Minimum possible score** = -10

All communities were assigned a score of 15 as all advanced referrals were assumed to be sent to Vancouver.

**Time b** = \[\left( \frac{T_{b} - T_{bM}}{T_{bM}} \right) \times 10\]

If Time _b_ > 40 then TIME\(_b\) = 40

\(T_{b}\) = Minutes of travel time to nearest basic referral centre

\(T_{bM}\) = Median travel time (49.4 minutes replaced by 257 minutes among Yukon communities)
Maximum possible score = 40

Minimum possible score = -10

Since all communities outside of Whitehorse have travel times in excess of the 40 minutes threshold developed in the formula, the median travel time within the Yukon to Whitehorse (257 minutes) was substituted. Whitehorse was assigned travel time of 10 minutes as a placeholder for distances across the city. No maximum cutoff was required. Distance (in terms of time) plays the dominant role in the application of this formula to the Yukon communities, which is weighted most heavily in the formula.

Exhibit 05-01 reflects ordinal rurality and remoteness in Yukon Territory; these measures are able to assist service planning due to the derivation of objective metrics.

### Exhibit 05-01
**Rurality and Remoteness Ordinal Measures in Yukon Territory**

<table>
<thead>
<tr>
<th>Community</th>
<th>Population Score</th>
<th>Time</th>
<th>Score</th>
<th>Time</th>
<th>Transformed Index (0-100)</th>
<th>Ordinal Ranking</th>
</tr>
</thead>
<tbody>
<tr>
<td>Beaver Creek</td>
<td>28.9</td>
<td>15</td>
<td>4.1</td>
<td>79</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>Carcross</td>
<td>26.5</td>
<td>15</td>
<td>-7.5</td>
<td>51</td>
<td>13</td>
<td></td>
</tr>
<tr>
<td>Carmacks</td>
<td>24.9</td>
<td>15</td>
<td>-4.6</td>
<td>55</td>
<td>11</td>
<td></td>
</tr>
<tr>
<td>Dawson City</td>
<td>16.3</td>
<td>15</td>
<td>8.6</td>
<td>72</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>Destruction Bay</td>
<td>29.5</td>
<td>15</td>
<td>-1.9</td>
<td>67</td>
<td>6</td>
<td></td>
</tr>
<tr>
<td>Faro</td>
<td>26.9</td>
<td>15</td>
<td>1.7</td>
<td>71</td>
<td>5</td>
<td></td>
</tr>
<tr>
<td>Haines Junction</td>
<td>23.9</td>
<td>15</td>
<td>-5.2</td>
<td>53</td>
<td>12</td>
<td></td>
</tr>
<tr>
<td>Mayo</td>
<td>15.7</td>
<td>15</td>
<td>3.3</td>
<td>61</td>
<td>9</td>
<td></td>
</tr>
<tr>
<td>Old Crow</td>
<td>26.9</td>
<td>15</td>
<td>15.1</td>
<td>100</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Pelly Crossing</td>
<td>26.5</td>
<td>15</td>
<td>-1.7</td>
<td>64</td>
<td>7</td>
<td></td>
</tr>
<tr>
<td>Ross River</td>
<td>26.0</td>
<td>15</td>
<td>5.0</td>
<td>77</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Teslin</td>
<td>25.3</td>
<td>15</td>
<td>-4.4</td>
<td>56</td>
<td>10</td>
<td></td>
</tr>
<tr>
<td>Watson Lake</td>
<td>15.5</td>
<td>15</td>
<td>3.6</td>
<td>61</td>
<td>8</td>
<td></td>
</tr>
<tr>
<td>Whitehorse</td>
<td>-10.0</td>
<td>15</td>
<td>-9.6</td>
<td>0</td>
<td>14</td>
<td></td>
</tr>
</tbody>
</table>

Health Intelligence Inc. and associates

Clinical Services Plan for Yukon Territory
5.3 Role Optimization

Role optimization has significant roots in the nursing profession, and, now, related discussions expand within nursing and across the other health professions. Also referred to as working “top-of-license,” role optimization encourages each professional to provide services to the maximum skill level attainable, as part of an integrated team, and, always, in a patient-centred model. In essence, the goal is to maximize individual scopes of service to provide quality and accessible care to those in need and in a timely fashion.

While the phrase is reasonably contemporary, conceptually this has been an issue for more than a decade:

2001 - Fyke Commission referenced inefficiencies in service delivery and the means of addressing this through respecting the contributions of all professions and, not only reducing inefficiencies, but also improving outcomes and provider satisfaction

2002 - Mazankowski Report supported development of a patient-centred system that is sustainable and accountable

2002 - Romanow Commission encouraged system reform that displaces silo functions to collaborative care models that work seamlessly across the continuum of care

2002 - Kirby Report sought ways to maximize the skills of all health professionals through delivery models that leverage utilization of the most appropriately qualified professional

The knowledge and skills of a health professional are founded in the education system and fostered in lifelong learning and professional development. The incumbent role optimization can then be shaped through legislation, experience, and competence. This can require redesign of functions and the establishment of customized models of service delivery that are based on collaborative care.
5.4 Patient-Centred Care

Patient-centred care (PCC) receives greater reference than attention in Canadian health care. That notwithstanding, a tenet of clinical service planning is the central position of the patient and, in many circumstances, this requires a shift in thinking and models. Perhaps most importantly is an understanding that PCC is a care model and not a simple concept.

Initial interest in patient-centred care emerged in opposition to the prevailing, traditional model of physician-centred decision-making, with seminal thinking having been undertaken in 1985 by Dr. Ian McWhinney, then Professor of Family Medicine at the University of Western Ontario. Described as seeing the world from the eyes of patients and their families, the paradigm shift to PCC would facilitate patients and their families to better inform the therapeutic process, taking into account their desire for sharing information and an equally shared role in decision-making.  

The four attributes of patient-centred care, described by the Institute of Medicine in 2001 are, as follows:

- Comprehensiveness of care
- Coordination and communication
- Support for the patient and his or her empowerment
- Timely access

The core of primary care reform requires a clearly defined, patient-centred “medical home” that can be a role assumed by emerging practice models. The College of Family Practice of Canada described the core elements of patient-centred medical homes, summarized as follows:

- Each patient has a personal family physician
- Patients have access to nurses or nurse practitioners and other health professionals, as needed, either in the practice or through formal links to other settings
- Health professionals work as well-coordinated teams; each offers unique skills to ensure optimal patient benefit
- Systems are in place to ensure timely appointments with the family doctor and other members of the care team

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35 See also the more recent work published by Dr. France Legare on Shared Decision-Making


37 Canadian Family Physician March 2010 vol. 56 no. 3 300
• Arrangements for and coordination of all other medical services are carried out through the medical home

• Electronic medical records are in place to facilitate appropriate information storage and sharing

These core elements form the basis of today’s collaborative care model and role optimization of health professionals working in an integrated team and an environment of evidence-based, quality care. The patient-centred medical home has all of the elements to transform primary care, an evolutionary process well underway in several national and international jurisdictions.

Steven Lewis described the fundamentals of patient-centred care in a 2009 paper[^38] in which he posed the central issues:

How would you know if the care you received was truly patient-centred?
How would providers know if they were delivering patient-centred care?
How would system managers know? What indicators best reflect patient-centredness? PCC is in some ways in the eye of the beholder. Providers might think they are delivering PCC but their patients might disagree. Different aspects of PCC will be more relevant to some patients than others.

Lewis continued with the premise of health care as a service industry — he stressed the differences with a commercial undertaking but reinforced that the one concept fundamental to the commercial world is relevant to health care: the customer is always right. Of course, customers are not always right; but, Lewis reminds us that a dissatisfied customer is one whose needs have not been met and, . . . the essential insight is to recognize this as a failure and reflects, . . . failures of disrespect, inconvenience, poor communication, and fragmentation.

One way around this is to espouse health care as a collaborative service industry that is responsive to needs. Attributes that underpin these needs can be any combination of structural, organizational, attitudinal, and behavioural.

The literature on patient-centred care is extensive; the Lewis paper is recommended as a cogent distillation of concepts and challenges.

### 5.4.1 High-Performing Primary Care

Patient-centred care extends into high-performing primary care. A 2012 paper prepared for the California Healthcare Foundation[^39] focused on six inter-related characteristics identified as the building blocks of high-performing practices, further defined as having high levels of patient and staff satisfaction. Further these characteristics were ordered sequentially:


[^39]: The Building Blocks of High-Performing Primary Care: Lessons from the Field. Prepared for California Healthcare Foundation by Rachel Willard, MPH and Tom Bodenheimer, MD
i. Data-driven improvement, to achieve efficiencies

ii. Empanelment and panel-size management, to sustain continuity of care and access

iii. Team-based care, wherein all members are responsible for quality

iv. Population management, whereby the specific needs of subgroups are addressed

v. Continuity of care provisions

vi. Prompt access to care, including a spectrum of providers

5.5 Technology

While technology applications in clinical services readily align with images of diagnostic equipment, therapeutic interventions, and pharmacology, in the context of this report, the reference is focused on two process applications: the electronic medical record and the use of telehealth. Both are suboptimal in Yukon Territory and both are integral to clinical services planning.

5.5.1 Electronic Medical Records

An electronic medical record (EMR) can provide health care providers with a more complete picture of a patient’s health — across the continuum of care and, often, without duplication. The providers, most referenced in the context of EMRs are community-based physicians, hospitals, and pharmacists.

At one end of the effectiveness spectrum are EMRs used for scheduling and billing; at the other end is an integrated and comprehensive record, built on a knowledge engine and incorporating diagnostic testing and specialty reports. This EMR follows the patient and can be accessed in other settings by authorized providers, both improving quality of care and minimizing duplication. Further, the ideal state enables “data scraping” to yield analyses that can improve the care provided to an individual or across a population.

Uptake varies widely across specialties and hospitals (often with technological barriers to communication and sharing) and across provinces and territories. Many challenges have been caused by, and perpetuated by, multiple vendors in that marketplace.

Currently, Plexia is the only EMR in use in Yukon Territory; as of October 2013, 76% of Yukon physicians (84% of family physicians) participate (in August 2011, the uptake was 65% of all physicians); the comprehensiveness of the use is not known nor has it been studied. It does, however, integrate laboratory test performed at Whitehorse General Hospital. The capability of record sharing has not yet been developed, nor are non-physician sites included (such as nurses at Health Centres). As well, “data scraping” for analytic and outcome study purposes has not been undertaken.

In summary, the uptake of the EMR at least matches the rest of the country; the current use of the EMR is, however, quite insular, does not prove a system-wide utility, and does not generate
potential efficiencies. There is no seamless health information system and the benefit to patients has not been maximized, in that the current applications appear limited to improved record keeping. This far undershoots the potential value; correcting this requires further investment, with the fiscal challenge being the difficulty in calculating the return on that investment in terms of quality, outcomes, and avoidance of duplication. Studies of outcome, such as the calculation of rates of ambulatory care sensitive conditions (ACSC), are valuable tools of assessing population health, but reflect both internal-to-practice and external-to-practice variables, of which the EMR is one internal variable.

5.5.2 Telehealth

Telehealth availability in Yukon is contemporary, yet underused, including that in each First Nation health department. The quality of the audio and video feeds is high; however, the interviewees were unambiguous about the underutilization. Often this reflects a technology that is not front-of-mind and, possibly, underestimates the impact on access issues (and system savings with respect to patient travel); as well, it is not an insured service for physicians, with the exception of psychiatric services. The technical resources are in place to enhance its use. Compelling evidence on value is widely available; the most current is the February 2014 issue of Health Affairs, focused on the early evidence and future promise of connected health. Following are eight abstracts from the peer-reviewed articles, most relevant to Yukon Territory:

**Telehealth Among US Hospitals: Several Factors, Including State Reimbursement And Licensure Policies, Influence Adoption**

*Julia Adler-Milstein, Joseph Kvedar and David W. Bates*

**Abstract**

Telehealth is widely believed to hold great potential to improve access to, and increase the value of, health care. Gaining a better understanding of why some hospitals adopt telehealth technologies while others do not is critically important. We examined factors associated with telehealth adoption among US hospitals. Data from the Information Technology Supplement to the American Hospital Association’s 2012 annual survey of acute care hospitals show that 42 percent of US hospitals have telehealth capabilities. Hospitals more likely to have telehealth capabilities are teaching hospitals, those equipped with additional advanced medical technology, those that are members of a larger system, and those that are nonprofit institutions. Rates of hospital telehealth adoption by state vary substantially and are associated with differences in state policy. Policies that promote private payer reimbursement for telehealth are associated with greater likelihood of telehealth adoption, while policies that require out-of-state providers to have a special license to provide telehealth services reduce the likelihood of adoption. Our findings suggest steps that policy makers can take to achieve greater adoption of telehealth by hospitals.

**Kaiser Permanente Northern California: Current Experiences With Internet, Mobile, And Video Technologies**

*Robert Pearl*

**Abstract**

The US health care system has been slow to adopt Internet, mobile, and video technologies, which have the capability to engage patients in their own care, increase patients’ access to providers, and
possibly improve the quality of care while reducing costs. Nevertheless, there are some pockets of progress, including Kaiser Permanente Northern California (KPNC). In 2008 KPNC implemented an inpatient and ambulatory care electronic health record system for its 3.4 million members and developed a suite of patient-friendly Internet, mobile, and video tools. KPNC has achieved many successes. For example, the number of virtual “visits” grew from 4.1 million in 2008 to an estimated 10.5 million in 2013. This article describes KPNC’s experience with Internet, mobile, and video technologies and the obstacles faced by other health care providers interested in embracing them. The obstacles include the predominant fee-for-service payment model, which does not reimburse for virtual visits; the considerable investment needed to deploy these technologies; and physician buy-in.

**Privacy and Liability: For Telehealth To Succeed, Privacy And Security Risks Must Be Identified And Addressed**

Joseph L. Halland and Deven McGraw

Abstract

The success of telehealth could be undermined if serious privacy and security risks are not addressed. For example, sensors that are located in a patient’s home or that interface with the patient’s body to detect safety issues or medical emergencies may inadvertently transmit sensitive information about household activities. Similarly, routine data transmissions from an app or medical device, such as an insulin pump, may be shared with third-party advertisers. Without adequate security and privacy protections for underlying telehealth data and systems, providers and patients will lack trust in the use of telehealth solutions. Although some federal and state guidelines for telehealth security and privacy have been established, many gaps remain. No federal agency currently has authority to enact privacy and security requirements to cover the telehealth ecosystem. This article examines privacy risks and security threats to telehealth applications and summarizes the extent to which technical controls and federal law adequately address these risks. We argue for a comprehensive federal regulatory framework for telehealth, developed and enforced by a single federal entity, the Federal Trade Commission, to bolster trust and fully realize the benefits of telehealth.

**Telehealth: Seven Strategies To Successfully Implement Disruptive Technology And Transform Health Care**

Lee H. Schwamm

Abstract

“Telehealth” refers to the use of electronic services to support a broad range of remote services, such as patient care, education, and monitoring. Telehealth must be integrated into traditional ambulatory and hospital-based practices if it is to achieve its full potential, including addressing the six domains of care quality defined by the Institute of Medicine: safe, effective, patient-centered, timely, efficient, and equitable. Telehealth is a disruptive technology that appears to threaten traditional health care delivery but has the potential to reform and transform the industry by reducing costs and increasing quality and patient satisfaction. This article outlines seven strategies critical to successful telehealth implementation: understanding patients’ and providers’ expectations, untethering telehealth from traditional revenue expectations, deconstructing the traditional health care encounter, being open to discovery, being mindful of the importance of space, redesigning care to improve value in health care, and being bold and visionary.

**Connected Health: A Review Of Technologies And Strategies To Improve Patient Care With Telemedicine And Telehealth**

With the advent of national health reform, millions more Americans are gaining access to a health care system that is struggling to provide high-quality care at reduced costs. The increasing adoption of electronic technologies is widely recognized as a key strategy for making health care more cost-
This article examines the concept of connected health as an overarching structure for telemedicine and telehealth, and it provides examples of its value to professionals as well as patients. Policy makers, academe, patient advocacy groups, and private-sector organizations need to create partnerships to rapidly test, evaluate, deploy, and pay for new care models that use telemedicine.

**Helmsley Trust Support For Telehealth Improves Access To Care In Rural And Frontier Areas**

Rural residents in need of health care face many challenges. In 2009 the Leona M. and Harry B. Helmsley Charitable Trust created the Rural Healthcare Program to improve access to and quality of care in areas of the upper Midwest challenged by health care workforce shortages and low population density. The program has focused its efforts on telehealth in seven upper Midwestern states. Since 2009 the Rural Healthcare Program has approved $22 million in grants to eighty-five rural hospitals to implement eEmergency services. The service's videoconferencing technology connects rural emergency department staff with emergency physicians and nurses located at the service’s “hub." Initial analyses indicate that eEmergency has helped participating rural hospitals increase patients’ access to specialists, increase the use of evidence-based treatment, decrease time to transfer a patient to a facility able to provide a higher level of care, and reduce unnecessary patient transfers. This article describes the health care challenges rural communities face and the telehealth projects supported by the Helmsley Trust’s Rural Healthcare Program.

**Lessons From Tele-Emergency: Improving Care Quality And Health Outcomes By Expanding Support For Rural Care Systems**

Tele-emergency services provide immediate and synchronous audio/video connections, most commonly between rural low-volume hospitals and an urban “hub” emergency department. We performed a systematic literature review to identify tele-emergency models and outcomes. We then studied a large tele-emergency service in the upper Midwest. We sent a user survey to all seventy-one hospitals that used the service and received 292 replies. We also conducted telephone interviews and site visits with ninety clinicians and administrators at twenty-nine of these hospitals. Participants reported that tele-emergency improves clinical quality, expands the care team, increases resources during critical events, shortens time to care, improves care coordination, promotes patient-centered care, improves the recruitment of family physicians, and stabilizes the rural hospital patient base. However, inconsistent reimbursement policy, cross-state licensing barriers, and other regulations hinder tele-emergency implementation. New value-based payment systems have the potential to reduce these barriers and accelerate tele-emergency expansion.

**Distributing Medical Expertise: The Evolution And Impact Of Telemedicine In Arkansas**

Arkansas’s telemedicine system has evolved since 2003 from a support mechanism for high-risk pregnancy consultations to an initiative that spans medical specialties, including asthma care, pediatric cardiology, gynecology, and mental health. The system has also expanded care to diverse populations, including incarcerated women and people with HIV/AIDS. This article describes the system’s evolution, organization, and diverse activities. It also shows how telemedicine can have a positive impact on a rural state and how such a state can become an engine for change regionally. The Arkansas telemedicine system faced classic challenges to uptake and function, in building and sustaining funding, in obtaining insurance reimbursement for services, and in educating patients and providers. The system’s impacts on health outcomes and medical practice culture have also reached beyond patient care and provider support. The existing yet continually evolving telemedicine infrastructure and partnerships in Arkansas will respond to the state’s inevitable health care reform adaptations from the Affordable Care Act. and could provide direction for other states seeking to adopt or expand their telemedicine efforts.
### Key Findings Summary

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<td><strong>5.1</strong></td>
<td>Conceptually, core services are described as an evidence-based understanding of population health service needs that carry expectations of timely and efficient access. At a level of detail, however, the application of core services is a complex challenge. Canadian experience with defining and implementing core services is best demonstrated in British Columbia, Manitoba, Ontario, and Nova Scotia. It is important to stress that a particular jurisdiction must identify its own core health and social services; core services from one jurisdiction are not automatically transferrable.</td>
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| **5.2** | Rurality can be measured objectively; using a customized adaptation of an existing measure of rurality indices, the ordinal rankings of rurality in Yukon Territory are, as follows:  
   1. Old Crow  
   2. Beaver Creek  
   3. Ross River  
   4. Dawson City  
   5. Faro  
   6. Destruction Bay  
   7. Pelly Crossing  
   8. Watson Lake  
   9. Mayo  
   10. Teslin  
   11. Carmacks  
   12. Haines Junction  
   13. Carcross  
   14. Whitehorse |
| **5.3** | Role optimization encourages each professional to provide services to the maximum skill level attainable, as part of an integrated team, and, always, in a patient-centred model. In essence, the goal is to maximize individual scopes of service to provide quality and accessible care to those in need and in a timely fashion. This is a fundamental element in advancing collaborative care and recruitment and retention initiatives. |
| **5.4** | Patient-centred care (PCC) receives greater reference than implementation in Canadian health care. That notwithstanding, a tenet of clinical service planning is the central position of the patient and, generally, this requires a shift in extant thinking and models. Fundamental is the understanding that PCC is a care model and not a simple concept. |
| **5.5** | High-performing primary care can be characterized, as follows:  
   - Data-driven improvement, to achieve efficiencies  
   - Empanelment and panel-size management, to sustain continuity of care and access  
   - Team-based care, wherein all members are responsible for quality  
   - Population management, whereby the specific needs of subgroups are addressed  
   - Continuity of care provisions  
   - Prompt access to care, including a spectrum of providers |
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<td>5.6</td>
<td>The electronic medical record (EMR) has become an integral part of delivering care and sharing medical information across sites, improving quality, and avoiding duplication; Yukon Territory requires a single territorial vendor that can be used in health centres, clinics, and hospitals, and be a source of analytic data that evaluates health outcomes.</td>
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<td>5.7</td>
<td>Telehealth availability in Yukon is contemporary, yet underused. The quality of the audio and video feeds is high; however, the interviewees were unambiguous about the underutilization. Often this reflects a technology that is not front-of-mind and, possibly, underestimates the impact on access issues (and system savings with respect to patient travel); as well, it is not an insured service for physicians, with the exception of psychiatric services.</td>
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6.1 Acute Care Services in Yukon Territory

The Yukon Hospital Corporation (YHC), established by the Hospital Act, is mandated to provide hospital and medical care services. The YHC is governed by a board of trustees, with some of its activities requiring the approval of the Minister of Health and Social Services.

The YHC has a public Board of Trustees and is led by the Chief Executive Officer. The following “quick facts” reflect the 2012-2013 fiscal year:

- admissions: 3,458
- emergency department visits: 32,673
- births: 394
- visiting specialist visits: 7,837
- surgical visits: 686
- same day surgery: 2,097
- outpatient laboratory visits: 23,702
- outpatient medical imaging: 16,568

The YHC is responsible for operating the Whitehorse General Hospital, the Watson Lake Hospital, and the hospital that opened in Dawson City in December 2013. The Department of Health and Social Services funds the Corporation through a contribution agreement. The 2011-2014 agreement provided operating funds of over $149 million for the Whitehorse General Hospital and Watson Lake Hospital.

In addition to operating hospitals, the Hospital Corporation provides residential accommodation on the campus of the Whitehorse General Hospital for visiting specialists, new staff moving to Whitehorse, community nurses, and short-stay nurses, while they are working at the hospital. In 2011, the Corporation completed construction of a new staff residence to replace its existing residence, which was over 50 years old.

Staffing complements were provided by the Yukon Hospital Corporation at March 31, 2013 and at December 31, 2013 for Whitehorse, Dawson City, Watson Lake and for the First Nations Health Program (FNHP). These are tabled in Compendium 134. All positions follow a grid system from L01 to L20 (CEO of the YHC). The staff size grew from 311 on March 31, 2013 to 334 at December 31, 2013. Most of the staff are located in Whitehorse (293 FTEs).
Additional compensation as a percentage of regular wages is provided in Compendium 135. This is highest in plant and operations (36%) and operating room (35%) at the Whitehorse Hospital. The highest level at the Watson Hospital is in the Medical functional centre at 40%. At the new Dawson City Hospital, the highest level (37%) is in the Medical functional centre, followed by Admission& Discharge/Health Records (27%) and Materials Management (26%).

Staffing complements for the YHC are identified by site and by level in Compendium 136. As noted previously, WGH has 293 FTEs. The FNHP has 10 FTEs. The two smaller hospitals have 17 FTEs (Watson Lake) and 15 FTEs (Dawson City).

6.2 Whitehorse General Hospital

In 1990, the YHC and its Board were created in preparation for the First Phase Transfer Agreement for health services between the Yukon Territorial Government and the Federal Government. The YHC, Yukon Territorial Government (YTG), and the Council of Yukon Indians (CYI) (now known as Council of Yukon First Nations CYFN) entered into an agreement to create a First Nations Health Committee of the Board of Trustees. This was to ensure that any changes to programs offered by the Corporation would support self-government agreements for Yukon First Nations. The Director of First Nations Health Programs was appointed to assume responsibility for the management of the program at the WGH. On April 1, 1993, the WGH operations were officially transferred to the YHC. Construction started on the current building in 1994. In the winter of 1996-1997 hospital departments started relocating. Parts of the old hospital were totally renovated and the final moves were completed in the fall of 1997.

The WGH currently employs over 350 staff and has 49 in-patient beds, 10 bassinets for newborns, and 10 surgical day care beds, an emergency department, and OR suites. The hospital is equipped with a full range of medical imaging services—CT scanning, digital mammography and ultrasound. WGH also offers laboratory services, a therapies department, as well as a broad range of medical and surgical specialists.

The First Nations Health Programs (FNHP) is under the direction of First Nation Health Committee (FNHC) members and has been providing services for 21 years. The highlights of the FNHP are included in the YHC report, A Year in Review 2012-2013, as follows:

- **Strategic Directions**
  - Ensure the best possible experience for First Nations patients
  - Invest in the staff to strengthen program and service delivery
  - Contribute to the capability of the organization to serve First Nations people
  - Collaborate with communities to enhance coordinated service delivery and quality of care
• **Patient Care**

Patient days, in 2012-2013, totaled 5,486 for self-identified First Nations, Inuit, and Metis people. Community hospitals also provide First Nations liaison services.

• **Cultural Services**

Traditional foods, medicines, and healing practices are culturally based and reflect the connection to the land that nourishes and heals.

• **Education**

Health care providers are educated to increase understanding and awareness of First Nations culture, exploring history and values while sharing appropriate ways to care for First Nations patients.

6.3 **Dawson City Community Hospital**

The following list of services is quoted from the **Dawson City Community Hospital** public site:

- Access to a Registered Nurse for assessment of your emergency health concern 7-days a week, 24-hours a day
- Access to a physician, as appropriate, for further assessment, diagnosis and treatment 7-days a week, 24-hours a day
- Increased capacity to manage your acute care either in the Emergency Room or on the Inpatient Unit providing 24/7 diagnosis, stabilization, observation and treatment of many health problems that previously required transfer to Whitehorse General Hospital
- We will be able to perform a comprehensive range of diagnostic procedures and blood tests in order to provide treatment in the hospital
- Our Lab/Xray technician will be using state-of-the-art x-ray and lab equipment for both acute health issues or follow-up for recent or longstanding and chronic illness
- Admission for inpatient treatment of chronic conditions and palliative care so that health problems and symptom management may not require a transfer to Whitehorse
- Access to ambulatory care services (e.g. IV treatments, dressing changes, etc.) so that you can avoid a hospital admission or be discharged home sooner
- Admission to an inpatient bed for convalescence after you have received treatments in Whitehorse or outside the territory
- Close collaboration with both the Dawson Community Health Centre and the Dawson Medical Clinic so that your care is better coordinated
• In the near future, the Dawson City Community Hospital will offer the services of visiting Physician Consultants, Dietetics, and a First Nations Health Program.

Exhibit 06-01
Dawson City Community Hospital Statistics

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Notes: December is a partial month due to an opening date of December 11 (therefore 21 days); February is a partial month due to data closure on February 26 (therefore 26 days)

The following list of services is quoted from the Dawson Community Health Centre public site:

• A new location on the 2nd floor of the building where the major functions of the Dawson Community Health Centre will remain focused on promoting community and family wellness through a range of health promotion services delivered in the health centre, school and homes.

• Hours of operation are 8:30 a.m. to 5:00 p.m.

• Programs supported by your community health nurse and other professionals working out of the new location will remain as follows:
  • Infant & preschool health exams and the school health program
  • Prenatal and postnatal education
  • Communicable disease screening (e.g. sexual transmitted infections, tuberculosis, and outbreaks)
• Immunizations
• Healthy lifestyle support
• Travel health education and immunizations
• Mental Health Services
• Hearing Services
• Close collaboration with the Dawson City Community Hospital so that your care is better coordinated
• New phone numbers for the Dawson Community Health Centre will be announced shortly

The following list of services is quoted from the Dawson Medical Clinic public site:
• Relocation of the doctor’s clinic and retail pharmacy to the main floor of the new building
• A more comfortable environment to meet with your doctor
• Close collaboration with the Dawson City Community Hospital so that your care is better coordinated
• The hours of operation and phone numbers will remain the same

6.4 Watson Lake Community Hospital

The Yukon Hospital Corporation formally opened the new Watson Lake Community Hospital on August 28, 2013.

Watson Lake Community Hospital lists the availability of the following services:
• Emergency services 24 hours a day, 7 days a week
• Ambulatory care services such as IV therapy and dressing changes
• In-patient care (six beds) providing:
  • Stabilization, observation and monitoring
  • Convalescent care
  • Respite care
• First Nations Health Program
• Diagnostic Services:
  • Laboratory
  • Medical Imaging (X-rays)
Hospital Sector

- This means you and your family can receive more of your health care in your home community. First Nations patients and their families have the support of the First Nations Health Liaison Workers, with services delivered in a culturally sensitive environment.

- The design of the new Watson Lake Hospital and Health Services Facility is flexible and supports many community health partnerships including:
  - Yukon Government Homecare
  - Yukon Government Public Health Unit
  - Child Development Centre
  - Visiting Specialists and Other Health Care Professionals

- Watson Lake Hospital will continue to work with Yukon Government’s Health and Social Services to offer comprehensive palliative care in the hospital and in the community

Concern is evident regarding the ongoing ability to maintain physician services at the current level. Other (FTE) positions are:

- Facility Administrator 1.0
- Support Services Supervisor 1.0
- Administrative Assistant 1.0
- Registered Nurses 6.9
- Licensed Practical Nurses 2.0
- Medical Records/A&D 1.4
- Cooks 1.5
- First Nations Liaison Worker 0.75
- Housekeeping 2.2
- Maintenance Engineer 1.0
### Watson Lake Community Hospital Statistics

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Legend: The date cells shaded in blue reflect months after the new hospital was opened.
### 6.5 Key Findings Summary

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<td><strong>Hospital Sector</strong></td>
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<tr>
<td>6.1</td>
<td>The WGH currently employs over 350 staff and has 49 in-patient beds, 10 bassinets for newborns, and 10 surgical day care beds, an emergency department, and OR suites. The hospital is equipped with a full range of medical imaging services—CT scanning, digital mammography and ultrasound. WGH also offers laboratory services, a therapies department, as well as a broad range of medical and surgical specialists.</td>
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<td>6.2</td>
<td>Staffing complements for the YHC are identified by site and by level. WGH has 293 FTEs. The FNHP has 10 FTEs. The two smaller hospitals have 17 FTEs (Watson Lake) and 15 FTEs (Dawson City).</td>
</tr>
<tr>
<td>6.3</td>
<td>Utilization data and analyses for Watson Lake and Dawson City demonstrate very low occupancy rates.</td>
</tr>
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<td>6.4</td>
<td>Physical constraint at WGH limits the consideration of a broader range of visiting and resident physician services.</td>
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<td>6.5</td>
<td>WLCH data have not changed in any substantial way since the new hospital has been opened</td>
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<td>6.6</td>
<td>Available diagnostic testing at WLCH is suboptimal during unsocial hours, with possible implications to patient safety and medical care</td>
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</table>
The Minister of Health and Social Services oversees and is accountable to the Legislative Assembly for the implementation and administration of a number of Yukon Acts, including the Health Act and the Hospital Act. Under the Health Act, the Minister develops and implements programs and services to protect, promote, and restore the health and social well-being of residents of Yukon Territory. The Health Act states that the Minister may, ... in collaboration with representatives of the providers and of consumers of health and social services, study and determine or make recommendations to the government about the health and social needs of the people of the Yukon, programs and services to meet those needs, and the systems, institutions, partnerships, facilities, and financial and human resources appropriate to provide those programs and services... and to develop, provide for, and coordinate comprehensive health and social services and facilities.

The DHSS, established by the Health Act, operates under the authority of the Minister and the administration of the Deputy Minister. It is the largest department of the Government of Yukon, with 2010-2011 expenditures of approximately $265 million, accounting for 24.6% of the territorial budget. Of that total, approximately $106 million was spent on health services, including the transfer of $45.3 million to the YHC.

The DHSS is organized by four divisions, each led by an Assistant Deputy Minister:

- Continuing Care
- Corporate Services
- Health Services
- Social Services

The Division of Continuing Care provides residential, home care and regional therapy services, structured by five programs: community day program; home care; palliative care; residential care; and, respite care.

The Continuing Care branch structure is:

- Safety and Clinical Excellence
- Care and Community
- Extended Care Services
- Clinical Psychology

The Division of Corporate Services has responsibility for five DHSS functions: communications and social marketing; finance systems and administration; human resources; policy and program development; and, corporate planning and risk management.
The Corporate Services **branch structure** is:

- Finance, Systems, and Administration
- Policy and Program Development
- Corporate Planning and Risk Management

The **Division of Health Services** is responsible for a variety of health care, disease prevention and treatment services which assist eligible Yukon residents in attaining maximum individual independence within their community.

The Health Services **branch structure** is:

- Community Nursing
- Community Health Programs
- Insured Health and Hearing Services

There are six **community health programs**, each with a Manager:

- Mental health services
- Environmental health services
- Communicable diseases control
- Children’s dental health program
- Health promotion unit
- Immunization program

Health Services operates health facilities throughout Yukon. Community Health Centres provide a wide range of health and medical services, delivered chiefly by community health nurses. Health Services also provides vital statistics, communicable disease control, health promotion, dental health, environmental health, hearing services, and mental health services.

The **Division of Social Services** has responsibility for providing services, organized by eight categories: adult community services; alcohol and drug services; family and children’s services; regional services; senior services; senior and elder abuse; services for people with disabilities; and, social assistance.

The Division of Social Services **branch structure** is:

- Adult Services
- Community and Program Support
- Family and Children’s Services
7.1 Corporate Planning and Risk Management

A new five-year strategic plan is being developed for DHSS, serving as the foundation for detailed departmental and divisional annual plans. This important work is scheduled for completion at the same time as the CSP is tabled.

Across the country the delivery of health and social services is changing in response to a variety of emerging opportunities and challenges: economic ebbs and flows; increasing costs of medical treatments and pharmaceuticals; training and availability of human resources; advancing technology; public expectations; demographic shifts in the population; health status, and the associated impacts of health behaviours are just a few of the many factors that impact the delivery of services. In spite of these factors, we continue to strive for a system that is efficient, effective, high quality, accountable, flexible, and adaptive.

In light of this transforming health and social service “landscape”, what is becoming clear is what worked in the past will not serve us as well in the future. Current models of health and social service delivery are neither sustainable, nor appropriate for these new realities...and the future will require us to do our business differently. A slight adjustment or two to our programs and services will not be enough...a “transformation” is required.

What will be needed is a continually evolving system, aligned with current and future realities, yet flexible and adaptive enough to address emerging challenges and opportunities. While other jurisdictions across the country are also changing the way they provide health and social services, our plan must be tailored to our unique “Yukon” needs.

This plan lays the foundation for the evolution of health and social service delivery in the Yukon Territory over the next 15-20 years and describes our goals and objectives for the “first five years” of a new “Yukon Service Model”. This new model will have an innovative, integrated, community delivery focus. We believe that by working with our partners and stakeholders and taking a capacity-building approach, with both a targeted and broad population focus, we will create a quality, adaptive, integrated, and accessible continuum of care and services... and in doing so, we will come ever closer to achieving our vision of “healthy communities – wellness for all.”

A draft of the strategic plan, its values, its vision, and goals, objectives, and strategies, demonstrated its consonance with the CSP. There is no conflict identified with the directions within the CSP; the documents are seen as complementary.
Health Services is responsible for a variety of health care, disease prevention, and treatment services for eligible Yukon Territory residents. The branch operates health facilities throughout the territory; the community health centres provide a range of health and medical centres, largely delivered by community health nurses. As well, Health Services provides vital statistics, communicable disease control, health promotion, dental health, environmental health, hearing services, and mental health services.

All of these services are important; those most applicable to clinical services planning are, as follows:

- Vital statistics (data)
- Communicable diseases (data)
- Health promotion (to be enhanced)
- Hearing services (to address waiting list)
- Mental health services (under-resourced, especially in rural Yukon Territory)

Programs assigned to Health Services include the following:

- Chronic conditions support program (link to chronic disease management)
- Chronic disease program
- Community health programs
- Community nursing
- Insured health and hearing services
- Medical Officer of Health
- Mercury in Yukon fish
- Multiple sclerosis
- Personal health information legislation
- Vital statistics
- Health status reporting
7.2.1 Insured Health and Hearing Services

The organizational chart, on the previous page, demonstrates the range of services managed by Health Services.

7.2.1.1 Hearing Services

Hearing Services encompass a wide range of professional services in the prevention, identification, assessment, and management of hearing loss across Yukon Territory. Screening and testing span all ages from newborn to adults; consultations occur with teachers, other health care professionals, worker’s compensation, Veterans Affairs, and First Nations.

Annually, a remote clinic is provided in Watson Lake and Dawson City.

These services are provided in Whitehorse by 3.0 FTE staff as well as part-time staff:

- 1.0 FTE Administration
- 1.0 Audiologist
- 1.0 FTE Manager and Hearing Practitioner
- 0.8 FTE Audiometric Technician
- 0.2 FTE Audiologist
- 0.1 FTE Finance Clerk

Hearing aid consultations and fittings are provided by the technician and the permanent Audiologist; the contract Audiologist performs only the testing. For residents over 65 years of age, funding support of $600.00 is provided every four years towards one hearing aid.

There is a significant backlog of clients who require any number of the hearing services; the current wait list is 600. Greatest priority is given to children and infants and, then, those with high risk situations. Less intense self-referrals will wait one year to be assessed.

Further, workload drivers will expand required services, including the aging population, increased industrial screening, earlier identification of hearing loss in infants, and a growth in demand for impressions for safe hearing protection.

7.2.1.2 Extended Benefits and Pharmaceutical Programs

There are three significant programs under this branch of IHS:41

i. Children’s Drug and Optical Program provides prescription drugs, eye examinations and glasses for qualifying beneficiaries

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41 Children’s Drug and Optical Program, Chronic Disease Program, and Pharmacare may not be available to status First Nations; not accessible if denied by NIHB
ii. Chronic Disease Program provides prescription drugs, medical equipment and some medical supplies for patients diagnosed with specific diseases or disabilities

iii. Pharmacare Program provides prescription drugs, medical equipment, home oxygen, and medical supplies for all registered Yukon residents over the age of 65 years; it also provides some financial support for dental needs ($1,400 every two years) and for essential eyewear and eye exams every two years

For consideration during the development of a clinical services plan, there are currently 3.0 FTE program officers in charge of delivering the programs, with one Pharmacist, as Manager. Like hearing services, these positions are are under constant pressure to provide services in a timely fashion, and the majority of clients are unhappy.

The providers are, as follows:

- Nine dental offices
- Seven pharmacies, two of which are rural and owned by the local physician; these businesses provide prescription drugs, some medical equipment and supplies, such as special dressings, ostomy products and others
- Two optometry offices
- Two opticians offices
- Two denturists
- Two surgical supply businesses that provide a range of products from braces to wheelchairs, to hospital beds
- Respiratory business that provides oxygen, CPAP machines and related supplies
- One physiotherapy office that supplies orthotics
- Whitehorse General Hospital’s physiotherapy that supplies orthotics (and are billed to the programs)
- Delivery business that provides freight to the communities for a variety of larger items or products that require special handling
- One retailer in Dawson City that provides incontinence supplies
- Some highly specialized providers outside of Yukon Territory for such things as artificial limbs or custom made braces, as well as some medical companies that bill the programs for specialized goods such as dialysis products

Claims management includes the local pharmacies and the British Columbia Cancer Agency. There are several logistical challenges that warrant acknowledgement. These include improved eligibility thresholds (including a universal Yukon benefit with a deductible), technology, such
as online real-time billing, electronic formulary through a third party carrier, purchasing logistics and, especially, online adjudication. Support for online adjudication, especially as part of the Pharmacare program for seniors, is based on:

- Those clients using a third party carrier, including NIHB, would be able to be identified by pharmacies, regardless of the time of the day or week
- Avoidance of diskette submission and payment delays
- Elimination of the need and time associated with manual maintenance and price juster (semi-annually)

The Branch notes that the population of Yukon Territory would be served, best, by a universal eligibility, with an income-driven deductible; initial estimates by the Branch suggest that the incremental cost to the government would be marginal. This is a policy issue and not one that fits into a clinical services plan.

Medical supplies and equipment are a significant part of the IHS budget for these programs. Experience has shown that needs may be addressed, more precisely, when the employees requesting the products are also responsible for the costs. Many thousands of dollars are spent on specialized dressings and other products, such as wheelchairs, with no requirement that the best price from suppliers be obtained. No records are provided to IHS with respect to where such equipment goes when a patient moves or dies.

The budget for supplies and equipment could be better managed by the people who request and use those products. It has been recommended that part of the IHS budget should be transferred to Home Care and Continuing Care, as the principal users. Closer attention could then be paid to both the price and appropriateness of the goods.

The unit needs the ability to place a reasonable maximum payable price on non-prescription products. It is hoped that the new pharmacy agreement will be pursued in 2014 and will allow IHS to bring retail prices down to a reasonable level. This is a management issue and not one that fits into a clinical services plan.

### 7.2.2 Community Nursing

The Community Nursing Branch has a total of 79.4 FTEs, of which 67.4 FTEs are primary health care providers, based in health centres. There are seven position classifications within the branch:

- Primary Health Care Nurse in Charge (PHCNIC)
- Primary Health Care Nurse (PHCN - permanent, term, and float)—works in an expanded scope of practice to provide primary care and emergency care
Auxiliary-on-Call (AOC PHCN)—a pool of AOCs are available when needed to fill vacant positions and during leaves

Community Health Nurse (CHN)—do not work in an expanded role but provide community and public health services

Clerk—provides administrative support services in health centres

AOC Clerks—are available when needed to fill in vacant positions and during leaves

Housekeeping—provides janitorial and housekeeping support; typically, these services are contracted positions and are not provided daily

Input was received from all the Health Centre teams, identifying the challenges that confront community nursing. These are summarized, as follows:

- There is significant time expended by community nurses in the performance of non-nursing functions; depending on the size of the community and the number of vacancies, this time for PHCNs is estimated to be up to 20% and for PHCNICs, up to 50%; the communities providing solely public health (Whitehorse Health Centre, Dawson City Health Centre, and Watson Lake Health Centre) report decreased amounts of time spent on these tasks

- The absence of Electronic Health Records hinders program and workload planning and impedes otherwise achievable efficiencies and seamless care

- Absence of collaborative care

- Delay in integrating Nurse Practitioners has a negative impact on care, especially with limited physician visits to the communities; this is particularly difficult on NPs who are current employees but unable to work to full scope

- Housing for relief staff is inadequate

- No internet availability in relief housing is difficult for relief staff, many of whom are enrolled, concurrently, in advanced education programs

- Benefit packages are considered by nurses to be non-competitive

The input from Health Centres also provided insight into care gaps of concern:

- Mental health and addiction services are not well resourced in communities

- Patients are being returned to the community with significant acuity and complexity (blood transfusion, cancer therapy, palliation, pain management)

- Early discharge programs return patients to communities in the absence of required resources, such as intravenous medications and complex dressings during unsocial hours
• Expectations often assigned to health centres are not matched by required resources
• Aging infrastructure has left facilities cramped and in disrepair
• Home care and palliative care services are limited in communities, leading to additional demands on PHCNs who are already providing primary care and emergency care 24 hours daily
• Limited physiotherapy and occupational therapy leads to additional workload on PHCNs
• Limited physician and dental services

7.2.3 Community Health Programs

Community health nurses (CHNs) are located in Whitehorse, Dawson City, and Watson Lake. The community health programs include the following:

• Maternal-child
• Well women
• Social health
• Chronic disease follow up
• Geriatric care
• Home visiting
• Health education and promotion
• Immunization
• Adult health
• Communicable diseases

The treatment programs include the following:

• 24-hour emergency care
• Daily outpatient care
• Visiting physician clinics
• Referrals
7.3 Social Services

Individuals (373 HC) (365 FTEs) provide Social Services; 332 (326 FTEs) are located in Whitehorse

Individuals (229 HC) (224 FTEs) work in the Family and Children’s Branch; 119 (116 FTEs) work in Adult Services

Individuals (95 HC) (94 FTEs) work in Residential Youth Treatment Services

Individuals (65 HC) (63 FTEs) work in Alcohol and Drug Services areas
The organizational chart, on the previous page, demonstrates the range of services managed by Social Services. These are summarized, as follows:

**Adult Services**

- Adult Community Services
  
  Provides a range of social services and coordinates their development for seniors, persons in need and/or with disabilities.
  
  - Adult Protection and Decision-Making
  - Income Assistance
  - Outreach Services
  - Pioneer Utility Grant
  - Yukon Seniors Income Supplement

- Alcohol and Drug Services
  
  Assists individuals and communities in reducing the harmful effects of alcohol and other drugs.
  
  - Outreach
  - Prevention
  - Detoxification
  - Treatment

**Family and Children’s Services**

Promotes, strengthens, and sustain effective parenting and positive family functioning, and ensures that children are protected from abuse and neglect, and receive the care essential for their wellbeing.

- Child Placement Services
- Child Protection
- Child and Family Services
- Children’s Assessment and Treatment Services
- Early Childhood
- Family Supports for Children with Disabilities
- Youth Justice
Regional Services

- Child Welfare
- Youth Probation
- Family Services
- Community Support Services
- Adult Protection Services

Senior Services

- Abuse of Older Adults
- Extended Health Care Benefits
- Home Care
- Pharmacare
- Pioneer Utility Grant
- Yukon Capability and Consent Board
- Yukon Seniors Income Supplement

Seniors and Elder Abuse

Services for People with Disabilities

Social Assistance

7.3.1 Adult Services

Adult Services provides a range of services and coordinates their development for seniors, those in need, and those with disabilities. The services include counseling and assessments, employment counseling, income assistance, outreach services, and income supplements.

The branch has completed an important ten-year strategic plan for services to persons with disabilities. The Services to Persons with Disabilities (SPD) unit is experiencing, and is likely to continue to experience, increasing pressures and demands for services due to the following factors:

- Incidence of cognitively compromised adults (due to FASD, acquired brain injuries, and concurrent addictions); these adults are likely to require services throughout their adult lives
Incidence of physical and developmental disabilities, including autism, that result in a need for lifelong supports, including for children “aging out” of Children and Family Services

High prevalence of adults with unmanaged, untreated mental disorders whose support needs are unmet by other programs

Individuals with cognitive or physical disabilities and complex and challenging behaviours, who cannot be appropriately supported within other programs such as Continuing Care or Mental Health Services

Increased workload related to the implementation of new programs, including the Community Wellness Court, and the Decision Making, Support and Protection to Adults Act

Increased workload due to increasing proportion of the total caseload that has complex and challenging case management needs

Incremental, cumulative increases in total caseload because clients remain on the caseload for the duration of their adult lives

Increasing need for housing with higher levels of support and supervision

Currently there is a lack of consensus regarding the role and mandate of the program, and eligibility criteria. Leadership and resources are required to identify and implement program management and planned service delivery capacities. A clear program direction should be established based on the following objectives:

- Defined program role and mandate
- Proactive service delivery and program management
- Continuity of care across programs and services, including other government departments

These objectives translate into the following long term strategic priorities:

- Determine the program mandate and eligibility criteria, with particular reference to individuals with mental illness, and the role of Mental Health Services, to ensure appropriate continuity of service delivery, without gaps or overlaps
- Develop effective and reciprocal team case management with Justice, Mental Health, Children and Family Services and Continuing Care for all clients in transition between programs, or receiving supports from multiple service providers
- Increase resources, particularly for case management and residential supports
• Provide professional development for all staff, including case managers, SIL staff and contracted service providers

• Develop new resources to meet the changing support needs of clients, including mental health clinical capacities to support both staff and clients, and new models of supported housing, including directly operated, staffed residential settings

7.3.2 Family and Children Services

Child Care Centres provide early childhood services in rural Yukon Territory. As well, Healthy Families is a targeted early childhood program in Whitehorse; it is going to expand to two rural communities in 2014-2015. This program can be characterized, as follows:

• Home-based family support program that is offered, in Whitehorse, to parents of newborns, beginning antepartum or at birth, and continuing to school age

• Jointly delivered with Community Health Nurses who provide the initial screening and subsequent survey with parents to ascertain overburdened families

• Goals are to assess the strengths and needs of new parents, assist them in accessing community services, enhance family functioning, promote positive child-parent relationships, and promote healthy growth and development

The Yukon Child Development Centre (CDC) also provides early supports and therapeutic services to Yukon children from birth to school age. The CDC clinical staff are, as follows:

• Physiotherapists 2.3 FTE
• Occupational therapists 2.0 FTE
• Speech-language pathologists 4.6 FTE
• Developmental therapists 4.3 FTE
• Preschool teacher 1.0 FTE
• Early childhood therapy assistants 3.0 FTE Whitehorse, 1.0 FTE Watson Lake, 0.8 FTE Dawson City, and term positions in Carmacks, Haines Junction, Teslin, Ross River, Faro, and Pelly Crossing

Teams of therapists travel to all rural communities: monthly day trips to the four closest communities and bimonthly overnight trips to the farther communities. CDC offices are located in Watson Lake and Dawson City, as well as a sub-office in Kwanlin Dun. All staff work out of the Whitehorse or Kwanlin Dun offices.

The work is even more essential with improvement of the clinical outcomes and financial implications of achieving early diagnosis and interventions.
The drivers of workload will increase, in part due to improved survivorship of serious pediatric illness. As well, with approximately 350 births annually in Yukon Territory, and the fact that the incidence and prevalence of conditions that require intervention can vary, some service needs are not predictable; the challenges do not bear a linear relationship to the number of infants and children in the age cohort.

One clear disadvantage, faced by CDC today (and by extension, the residents of Yukon Territory), is that intake to the services of CDC is by referral (with a diagnosis) plus family consent. The assessment and services do not occur in the absence of either. As such, approximately 50% of territorial children from age 0-4 years receive services. This is an example of care being provided to those who “seek” it; it will not necessarily be provided to all those who “need” it. Worthy of consideration is the approach of universal screening.

Programs and services to income support clients are governed by the Social Assistance Act which allows for the provision of financial assistance to people who do not have enough money to meet basic human needs. (food, shelter, clothing) In addition, a range of social services supports can be accessed through case planning activities for individuals and families described as persons “in need” and/or with disabilities to enjoy a basic standard of living with maximum independence and dignity. Care Business includes assessment and case management; financial support; and supervision of rural Yukon Review Board clients.

There is significant collaboration with First Nations communities, through regional services in rural Yukon Territory. In addition to ongoing consultation and collaboration on a casework basis, there are contracts in place with six First Nations in Yukon Territory to provide a range of services that support individuals, families and communities:

- Liard First Nation Family Support Agreement – Watson Lake Area
- Selkirk First Nation Family Support Agreement – Pelly Crossing Area
- Ross River Dena Family Support Agreement – Ross River Area
- Vuntut Gwitch’in First Nation Family Support Agreement – Old Crow
- Kwanlin Dun First Nation Family Support Agreement -Whitehorse area
- Ta’an Kwach’an Council Family Support Agreement – Whitehorse area

The Child and Adolescent Therapeutic Services (CATS) program assists child and youth victims of sexual and physical abuse, and those children and youth who have witnessed family violence. The program offers three categories of service: counselling and play therapy, family therapy, and consultation and training. Services are offered on a mobile basis to the communities outside Whitehorse. The program provides treatment groups based on age and type of abuse experienced. Counselling and support groups also provide help to non-offending parent(s) and siblings. CATS provide
summer therapeutic day programming for children with a history of maltreatment or abuse.

### 7.3.3 Community and Program Support

Three units in the Community and Program Support Branch—Regional Services, Senior Services/Adult Protection and Family Conferencing—are mandated to provide, promote, and coordinate services and community resources to support the positive functioning of the people of Yukon Territory in rural communities and in Whitehorse, with a staff of FTE 39.7.

One unit in the Community and Program Support Branch—Program Support and Practice Standards—is responsible for ensuring the effective delivery of policy and program development, staff training, and quality assurance and evaluation services to staff in the entire Social Services Division.

The Branch is led by a Director and three managers. **Regional Services Unit**, with FTE 24.7, is a network of social service centres located in eight rural communities: North (Dawson City, Mayo, Carmacks, and Ross River); and, South (Haines Junction, Carcross, Teslin, and Watson Lake). The FTE complement consists of one Manager, one Business Manager, two Supervisors, 11 professional Social Workers, and nine administrative support staff.

Clinical services and case management are provided to residents of Yukon Territory within a mandate, as follows:

- Promote the health and safety of children, youth, families, adults, and seniors
- Enable access to a broad range of social services in rural Yukon Territory
- Collaborate with local community service providers and specialized itinerant service providers in the delivery of social services
- Provide initial emergency social services response in rural Yukon Territory

The Child and Family Services Act provides the mandate for **child welfare** services, which includes protecting children from abuse and neglect and promoting positive family life and optimal child development. Core business includes ensuring the safety of children; conducting investigations, assessments and case management; providing assessment and treatment services to children and family members who are victims of or witness domestic abuse; ensuring 24-hour / 365-day child protection services are provided through a network of service providers including the RCMP; ensuring the care of children who cannot remain in their home, including planning for permanency and stability, ensuring all aspects of a child’s development are addressed, and maintaining the child’s important relationships; recruiting, assessing, monitoring and supporting care providers; providing adoption and custom First Nations adoption; offering cooperative/collaborative planning; working in cooperation with First Nations, extended family and others to identify the family’s needs, the services to meet those
needs, and a plan for the care of their child; and providing financial assistance, supports, respite, homemaker services, parenting programs and other services.

**2012/13 Case Load**

- Child in care - 60
- Foster Home - 32
- Child Protection/ Family Service - 214

It is inarguable that the stressors within child, family, and adult services are extended to the challenges of alcohol and drug abuse and mental health issues. This is witnessed repeatedly with children coming from an environment of disturbed families. Further, workers in home care and long-term care, not infrequently, become aware of undiagnosed mental health issues,

Programs and services to **young offenders** are governed by the federal Youth Criminal Justice Act, Yukon Youth Corrections Act and Young Persons Offenses Act (Yukon) and cost-shared by the federal and territorial governments.

Core Business includes the rehabilitation of young offenders and integration into the community; prevention and reduction of youth crime; supervision of youth under court orders or extrajudicial sanctions; youth probation; case management of youth justice court orders; and extrajudicial sanctions.

The **Senior Services/Adult Protection Unit** is staffed by a Manager and three Social Workers, providing intervention, complex high risk case management, and leadership services related to adult protection and neglect issues, and social work programming for older adults. The workload for the Senior Services Unit is expected to rise with closure of the local Canada Revenue Agency office and cutbacks in Service Canada.

Social workers at the Adult Protection Unit are mandated to respond to abuse and self neglect of vulnerable adults over age 19. Cases are complex, with many clients suffering from concurrent disorders, head injuries or dementia. No community based emergency respite is available. The unit oversees the policy and Yukon Seniors Income Supplement (YSIS) and Pioneer Utility Grant allowances; provides consulting services regarding substitute decision making for employees and the public; responds to adult protection situations; and provides consulting services to other employees serving seniors.

Two teams provide services:

1. **Seniors’ Services** provides agency support and referrals for seniors. Recent rent increases have resulted in many low income seniors becoming homeless. With the close of the local Canada Revenue Agency (CRA) office and cutbacks in Service Canada, it is expected that there will be more demand for support. The unit is leading the development of the Aging Well Strategy in conjunction with community partners.
The strategy was initially funded through THISSI and further activities will require resources.

2. **Adult Protective Services** are governed under the Decision Making Support and Protection to Adults Act. Social workers are mandated to respond to abuse and self-neglect of vulnerable adults over age 19. Cases are complex, with many clients suffering from concurrent disorders, head injuries or dementia. No community based emergency respite is available.

**2012/13 Caseload**

- 65 cases
- 154 consultations

**Yukon Seniors Income Supplement (YSIS)**

The Yukon Seniors Income Supplement Act provides an indexed supplement for low-income seniors (to a maximum of $243.39 per month for an individual) that is tied to the federal Guaranteed Income Supplement (GIS). The total grant budget for 2013/14 is approximately $900,000.

**Pioneer Utility Grant (PUG)**

The Pioneer Utility Grant Act provides for a universal indexed grant ($1012.95 in 2013) to assist seniors over the age of 65 to heat their homes.

The **Program Support and Practice Standards Unit** is staffed by one Manager, four policy analysts, one Staff Development Coordinator, one Quality Assurance Specialist, and two Family Conferencing Specialists. This unit ensures the effective delivery of policy and program development, staff training, quality assurance, and evaluation services across the social services system.

**2012/13 Caseload**

- 40 Family conferences completed
- 18 Family conferences in progress
7.4 Continuing Care

Individuals (387 HC) (360 FTEs) are involved in Continuing Care, mostly in Whitehorse (382 individuals, 356 FTEs), with very few services provided in rural Yukon Territory.

The majority of staff (276 individuals, 266 FTEs) are involved in Extended Care Services; 88 (72 FTEs) are in the Care and Community Branch.

Individuals (183 HC) (178 FTEs) are situated at Copper Ridge Place; 54 individuals (50 FTEs) are at Macauley Lodge and another 39 (38 FTEs) are at the Thompson Centre.

Individuals (88 HC) (72 FTEs) are assigned to Home Care Services.
The divisional critical issue, as determined through an environmental scan, is the challenge to maintain quality and adapt to the changing needs of care. The key strategic objectives are to provide and coordinate services for individuals that require support, social, and health services to live fully independently or interdependently as valued members of their community.

The Continuing Care Division provides Residential, Home Care, and Regional Therapy services to residents of Yukon Territory. There are three current business lines, each with its own mandate (branch objective), with the following FTE allocations:

**Total FTE 351.8**

**Safety and Clinical Excellence** FTE 14.5

This area includes budget and support for all the divisional programs and services through Policy, Quality and Risk, Professional Development, and Systems Supports.

**Care and Community** FTE 109.5

This area includes McDonald Lodge, residential care, home care, and meals on wheels; Thomson Centre and the Adult Day Program; Yukon Home Care Program; Palliative Care; and, the Intake/Assessment Service.

Home care is a territorial service that supports independent at home, working closely with other departments, First Nation governments, facilities, and community organizations. The intensity of the support is a factor of a needs assessment and the availability of family and community support. The health-related services can be acute, chronic, palliative and rehabilitation, and respite.

Home care services in Whitehorse are, as follows:

- Social Workers to identify needs and supports and to provide advocacy, counseling, and support in accessing community resources
- Home Support Workers to assist with bathing, grooming, light housekeeping, laundry, grocery shopping, and meal preparation
- Occupational Therapists to make recommendations on home safety adaptations and mobility aids
- Physiotherapists to assist with physical challenges to become more mobile, physically fit, and independent
- Nurses to provide education and treatment and to liaise with the medical community
- Speech Language Pathologists to provide assessment and consultation to individuals who have difficulty communicating and swallowing
There are home care offices in Whitehorse, Watson Lake, Teslin, Carcross, Haines Junction, and Dawson City. Services in other communities combine home support workers and community liaisons. Regional Therapy teams also visit to provide occupational therapy, physiotherapy, and speech language pathology services.

These community home care services include:

- Nursing and home support services, in addition to continuing care services (occupational therapy, physiotherapy, speech language pathology)

As a representative metric, in August 2013, the Whitehorse home care caseload was 315 clients and the regional home care services, 238.

**Extended Care Services** FTE 227.8

Extended care services support individuals who require extensive assistance with daily living, 24-hour monitoring, and/or professional care, but do not require services provided in an acute care hospital. These services are available for children, adults, and seniors.

This area includes Copper Ridge Place, Extended Care, Special Care, Young Adults and Children’s programs, and the Complex Care program; Macaulay Lodge and the meals on wheels program. Extended care services support individuals who require extensive assistance with daily living, 24-hour monitoring, and/or professional care, but do not require services provided in an acute care hospital. These services are available for children, adults, and seniors.

The total bed allocation to long-term care beds is 183:

**Copper Ridge Place** 96 beds
- Extended Care Unit 68 permanent beds and 4 respite beds
- Special Care Unit 22 permanent beds and 2 respite beds

**Macaulay Lodge** 47 beds
- Intermediate Care

**McDonald Lodge** 11 beds
- Personal Care 9 permanent beds and 2 respite beds

**Thomson Centre** 29 beds
- Intermediate and Extended Care 27 permanent beds and 2 respite beds

The Yukon Territory residential care programs are driven by the home philosophy of care. Long term care and respite care are offered in all facilities for residents experiencing a continuum of affected functional abilities and cognitive impairment. There are specialized units for youth.
and children (6 rooms), as well as for mobile dementia care (24 rooms). Community day programming in Whitehorse and meals-on-wheels services in Dawson City and Whitehorse are available.

7.4.1 Safety and Clinical Excellence

The authority for safety and clinical excellence services and programs comes from Management Board directives (without specific legislation).

- Accreditation
- Policy and Planning
- Data Management
- Risk Management and Safety
- Professional Development/Training
- Clinical Practice Standards
- Quality Management

7.4.2 Care and Community

The authority for all care and community services and programs comes from Management Board directives (without specific legislation).

- Meals on Wheels- Dawson City
- Yukon Home Care Program
- McDonald Lodge – 11 personal care beds
- Thomson Centre – 28 care beds
- Community Day Program
- Intake/Assessment Unit
- Yukon Palliative Care Program

The Community Day Program provides services and support to adults with cognitive or physical impairments and to their caregivers, making it possible for them to experience an optimum quality of life while continuing to live in the community.

7.4.3 Extended Care Services

The authority for all extended care services and programs comes from Management Board directives (without specific legislation). Service levels are defined by the required level of care, and are further delineated, such as different levels of function in the dementia program. This is of note, due to the anticipated increase in the need for such services.

- Copper Ridge Place – 96 extended care beds (including dementia care)
- Macaulay Lodge – 47 intermediate care beds
- Meals on Wheels- Whitehorse – coordinated through Macaulay Lodge
7.5 Fetal Alcohol Spectrum Disorder

FASSY, an NGO working with a number of agencies and service providers, offers services that focus on:

- Development of a Yukon-wide Fetal Alcohol Spectrum Disorder (FASD) strategy
- FASD awareness training
- FASD case management model

FASD is termed, “the invisible disability,” with a major caseload of undiagnosed and untreated clients. For those who live with FASD, the expressive skills are at variance with comprehension skills and can often reflect those of a five-year old child.

The current FASD caseload in Yukon Territory is 55 adults, with an age range from 20 years to 60 years (average 34 years). These numbers include proven and suspected cases of the spectrum disorder, using a four-digit scale and supported by an annual visit by a Calgary-based diagnostic team. It is speculated that the actual number of affected adults may be as high as 2,000; however, stigmatization may lead to under-reporting. Failure to achieve an early diagnosis leads to secondary disabilities and mental health disorders.

The 55 adults in the current caseload are assisted through an outreach program; referrals are made, typically, by parents, jail, and agencies. In addition to outreach and striving for option for independence (such as dedicated housing), there are education and prevention activities undertaken by FASSY. There are 4.0 FTE outreach workers at FASSY, each with a caseload of 10-15 clients, each of whom may require constant attention. At any one time, 30 of the 55 adults managed through FASSY are “active” and “25 are “inactive.”

Managing the environmental and social determinants identifies four areas of greatest risk for FASD:

- Housing
- Income—source and management
- Health and reproduction
- Use of time—challenge is to redirect and avoid wandering

The challenges are more acute outside of Whitehorse, due to limited resources. There is a FASSY presence in Pelly Crossing, but nothing beyond that. FASSY points out that the presence does not need to be FASSY, directly, but could be community representatives who are trained by FASSY, as a cross-over between DHSS and the Department of Justice. Most of the funding for FASSY comes from DHSS.

The ideal model for FASSY is expanded collaborative care that includes case management training.
7.6 Key Findings Summary

<table>
<thead>
<tr>
<th>n</th>
<th>Summary</th>
</tr>
</thead>
<tbody>
<tr>
<td>7</td>
<td><strong>Department of Health and Social Services</strong></td>
</tr>
<tr>
<td>7.1</td>
<td>A new five-year strategic plan is being developed for DHSS, serving as the foundation for detailed departmental and divisional annual plans. This important work is scheduled for completion at the same time as the CSP is tabled. Review of an earlier draft of the strategic plan, its values, its vision, and goals, objectives, and strategies, demonstrated its consonance with the CSP. There is no conflict identified with the directions within the CSP; the documents are seen as complementary.</td>
</tr>
<tr>
<td>7.2</td>
<td>There is a significant backlog of clients who require any number of the hearing services; the current wait list is 600. Greatest priority is given to children and infants and, then, those with high risk situations. Less intense self-referrals will wait one year to be assessed. Further, workload drivers will expand required services, including the aging population, increased industrial screening, earlier identification of hearing loss in infants, and a growth in demand for impressions for safe hearing protection.</td>
</tr>
</tbody>
</table>
| 7.3 | Input was received from all the Health Centre teams, identifying the challenges that confront community nursing. These are summarized, as follows:  
• There is significant time expended by community nurses in the performance of non-nursing functions; depending on the size of the community and the number of vacancies, this time for PHCNs is estimated to be up to 20% and for PHCNICs, up to 50%; the communities providing solely public health (Whitehorse Health Centre, Dawson City Health Centre, and Watson Lake Health Centre) report decreased amounts of time spent on these tasks  
• The absence of Electronic Health Records hinders program and workload planning and impedes otherwise achievable efficiencies and seamless care  
• Absence of collaborative care  
• Delay in integrating Nurse Practitioners has a negative impact on care, especially with limited physician visits to the communities; this is particularly difficult on NPs who are current employees but unable to work to full scope  
• Housing for relief staff is inadequate  
• No internet availability in relief housing is difficult for relief staff, many of whom are enrolled, concurrently, in advanced education programs  
• Benefit packages are considered by nurses to be non-competitive |
<table>
<thead>
<tr>
<th>n</th>
<th>Summary</th>
</tr>
</thead>
</table>
| 7.4 | The input from Health Centres also provided insight into care gaps of concern:  
  - Mental health and addiction services are not well resourced in communities  
  - Patients are being returned to the community with significant acuity and complexity (blood transfusion, cancer therapy, palliation, pain management)  
  - Early discharge programs return patients to communities in the absence of required resources, such as intravenous medications and complex dressings during unsocial hours  
  - Expectations often assigned to Health Centres are not equalled with required resources  
  - Aging infrastructure has left facilities cramped and in disrepair  
  - Home care and palliative care services are limited in communities, leading to additional demands on PHCNs who are already providing primary care and emergency care 24 hours daily  
  - Limited physiotherapy and occupational therapy leads to additional workload on PHCNs  
  - Limited physician and dental services |
| 7.5 | There are several logistical challenges that warrant acknowledgement. These include improved eligibility thresholds (including a universal Yukon benefit with a deductible), technology, such as online, real-time billing, online adjudication, electronic formulary through a third party carrier, and purchasing logistics. |
| 7.6 | One clear disadvantage, faced by the Child Development Centre today (and by extension, the residents of Yukon Territory), is that intake to the services of CDC is by referral (with a diagnosis) plus family consent. The assessment and services do not occur in the absence of either and, as such, approximately 50% of territorial children from age 0-4 years are seen. This is an example of care being provided to those who “seek” it; it will not necessarily be provided to all those who “need” it. Worthy of consideration is the approach of universal screening with the support and guidance of the Director, Family and Children Services. |
| 7.7 | Disability services are provided in an inconsistent and very limited basis in rural Yukon Territory |
8.1 Overview

Addiction to a substance is a continuing, destructive behaviour despite a powerful negative force on an individual. Addictions have been characterized, as follows:42

- **Loss of control**
- **Compulsive use/behaviour**
- **Cravings**
- **Continued use/behaviour despite increasing negative consequences**

Alcohol and Drug Services (ADS) envision the empowering of residents of Yukon Territory to attain freedom from alcohol and other drug problems, achieving health and wellbeing.

There are four interdependent ADS service areas:

- **Outreach**

  Outreach services provide strategic assistance to communities to develop capacity in pre-treatment and aftercare. This includes program planning services, consultation services, networking, and client support.

- **Prevention**

  Prevention services include training on a range of addictions-related topics and workshops for allied professionals and community groups. This includes training events, presentation and in-services, consultation and capacity-building, access to a resource centre, and a variety of information vehicles.

- **Detoxification**

  The detoxification program is a supportive service for safe withdrawal and recovery from the effects of substance abuse or dependence. The facility has four bedrooms with one (two beds) reserved for women. It is medically supported, staffed with nurses and recovery unit attendants, a contracted physician for six hours weekly, and a communicable disease nurse weekly.

  The average length of stay is three to five days and is linked to a recovery plan and post-discharge recovery support.

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42 Abstracted from the web site of the Government of Northwest Territories

Health Intelligence Inc. and associates

Clinical Services Plan for Yukon Territory
• **Treatment**

Treatment services are offered as outpatient services, inpatient treatment programs, and youth services. The outpatient services include the following, listed in the ADS information booklet:

- Screening and alcohol and drug assessment
- Treatment for concurrent disorders
- Individual counseling and support to families
- Family and couple counseling when appropriate
- Counseling in preparation for inpatient treatment
- Aftercare support following an inpatient treatment program
- Self-help groups and other support services
- Recovery support group on Wednesday afternoons
- Outreach counseling to Whitehorse agencies
- A counselor available to Whitehorse medical clinics
- Tuesday morning drop-in for clients without appointments

8.2 **Care Gaps**

It is evident that alcohol abuse is the primary addiction with the most severe impact. As documented earlier in this report, the per capita purchase of alcohol in Yukon Territory exceeds the rest of Canada.

**No provider or service interview during this study was silent on the critical need for expanded and re-tooled ADS services to be central in service planning.**

Considering the domains of prevention, treatment, and aftercare, the burden of care is considerable and, by necessity, has been more Whitehorse-focused than the remainder of the territory. The two constants in expressions of concern are the inability to receive detoxification services, at or close to home, and the absence of aftercare in rural settings. In summary, the issues raised by concerned and informed community resources related to the need to improve ADS resources and to expand the services. It is understood that a new ADS facility is scheduled to open in 2015 and is intended to expand the number of residents who can be

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43 See Exhibit 04-14 on page 110

Health Intelligence Inc. and associates

Clinical Services Plan for Yukon Territory
provided with care; however, the absence of community-based services will leave a large void in the care available and a continuing high risk of recidivism.

The absence of a common infrastructure for Mental Health Services and ADS impedes the achievement of a full spectrum of care, particularly with the high prevalence of co-morbidity; it is understood that resolution of this is under consideration. This study strongly supports the integration.

8.3 Evolution of Care

The challenge of provision of ADS to communities within Yukon Territory is longstanding. Much effort has been expended by those who provide the services; it is recognized, widely, that a non-Whitehorse model of ADS will require additional resources and be founded in holistic, collaborative care. Such a model of providing ADS would bring to communities each of:

- Prevention (there is already a legacy of prevention services)
- Withdrawal management
- Pre-treatment work
- Treatment (residential and outpatient)
- Aftercare and relapse prevention

Central to a clinical services plan of value to the residents of Yukon Territory is the expanded resourcing of ADS and mental health services, especially in the communities. There is no greater need.

To date, the integration of collaborative services that are patient-centred have not been achieved among professions and families. As described elsewhere in this report, this is achievable through a hub and spoke model structured around Regional Collaborative Care Centres. ADS staff have moved in this direction in their consideration of effective models of care; this study supports their efforts and believes that the model fits well into the broader health and social services sector.

Following are key excerpts from the draft ADS document that underpins the conceptual planning.44 The entire document warrants careful consideration, especially in light of the recommendations brought forward in this study.

*No single sector can tackle this challenge: people in need of help depend on primary care, hospital based care, specialized addiction services, housing and employment supports, and more—in addition to their own personal resources, including families, friends and other caregivers. Historically, there has been little integration or effective communication within and between the systems*
and jurisdictions that provide services and supports to people with substance use problems. As a result, people face considerable gaps in service and barriers to accessing the help they need. People, who may have significant health problems, at a time of great personal strain, must navigate a complex and ever-changing labyrinth of services and supports.

In developing this model it is important to use a systems approach given that communities, families, individuals and service providers are not static, they are very dynamic in how they interact and how they impact each other negatively and positively. This collaborative service provision model examines service requirements on a continuum basis, beginning with open involvement (eligibility) criteria that are intended to meet the needs of greatest numbers of people which is different than those on the other end of the continuum of service. The beginning work on the continuum of service focuses on education, healthy living, employment, family, recreation and harm reduction. Open involvement services and supports are not always focused exclusively on substance use, and can be integrated into community life, and are of relatively low intensity and cost.

Following along the continuum of services, programming would then be focused on engaging the individual and family. This engagement would provide withdrawal management services, and counseling services to explore the options to deal with their substance use; this would include ongoing community-based withdrawal management (home and hospital based), and counseling (individual, family and group); referrals to in-patient treatment (if required) and community-based-aftercare. Further, community supports would be utilized to provide ongoing support for the individual and family (mental health, Many Rivers and other FN and NGO services). Supports can be specifically focused on addictions (AA, Elders etc); however, many of the community supports can focus on healthy living such as: recreation, education, training, pre-employment/employment; healthy family and community events. These activities are essential to assisting individuals and families when dealing with substance use.

It is time to explore the feasibility of reorganizing the Prevention team and the two Outreach positions into a Community Substance Use/Mental Health
Counseling Service that would encompass the work of both groups into one specific program. However, this also has to be balanced with the continual need for prevention activities in Whitehorse. These services would include:

- Remaining current with substance use literature and research and distribution of this information across the Yukon (YG, FN, NGO and community based organizations);
- Prevention activities in elementary schools;
- Training of allied professionals in and outside of Whitehorse

It is proposed that a combination of an itinerant and a community based service delivery approach is the most advantageous. Although all communities may prefer positions to be located in their respective communities the complexities of this work and the economy of scale does not lend itself to having a Community Substance Use/Mental Health Counseling Service residing in all communities.

Frequency of community visits has to be on a regular predictable basis (possibly one week in the community – one week out of the community);

- Counselors servicing communities have to be well versed in community development, prevention/education and in the provision of mental health/addiction counselling and aftercare programming;
- There must be community involvement, with Community Nursing, FN and Non-FN community services; this may include co-facilitating services and the provision of office space;
- There must be coordination among other Whitehorse services such as Many Rivers, Mental Health, Social Services, Family and Children Services, Education, Health Promotions and other YG programs in order to provide consistency in service delivery to the communities;
- Itinerant counselors require ongoing consistent supervision both individual and as a team;
- Confidentiality is essential in regards to client information;
ADS is researching the feasibility of establishing a Yukon-wide Home Withdrawal Management service. In the communities this type of services could be incredibly beneficial. Further, this would be a joint program between Community Nursing, ADS and the respective community. Not all people would be eligible for home withdrawal services; however, those that meet the set criteria could participate in a safe, methodical withdrawal process.

It is proposed that this Community Substance Use Counseling program would be comprised of nine staff: one Supervisor (clinically trained); three community-based ADS counsellors and five itinerant counsellors. The role of the Supervisor is to ensure that a collaborative approach is implemented, this entails foundational work with FN governments, community organizations and other government and non-government agencies in order to achieve agreement and partnership as we move forward in this work. Further, the role of the supervisor will be to provide clinical supervision to the itinerant counselors and the community-based counselors.

8.4 Key Findings Summary

<table>
<thead>
<tr>
<th></th>
<th>Summary</th>
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</thead>
<tbody>
<tr>
<td>8</td>
<td>Alcohol and Drug Services</td>
</tr>
<tr>
<td>8.1</td>
<td>No provider or service interview conducted during the study was silent on the enormity of the problem with, and impact of, the abuse of alcohol in Yukon Territory.</td>
</tr>
<tr>
<td>8.2</td>
<td>Current ADS services are Whitehorse-centric; rural and remote services are in a deficit for each of prevention, detoxification, pre-treatment, treatment, and aftercare, especially the latter.</td>
</tr>
<tr>
<td>8.3</td>
<td>It is understood that a new ADS facility is scheduled to open in 2015 and is intended to expand the number of residents who can be provided with care; however, the absence of community-based services will leave a large void in the care available and a continuing high risk of recidivism.</td>
</tr>
<tr>
<td>8.4</td>
<td>To date, the integration of collaborative services that are patient-centred have not been achieved among professions and families.</td>
</tr>
<tr>
<td>8.5</td>
<td>The ADS planning document is well thought out and reflects the urgent need to change the delivery of ADS services in Yukon Territory. It is consonant with the structural and functional recommendations from this study and warrants implementation.</td>
</tr>
<tr>
<td>8.6</td>
<td>Not addressing ADS and mental health services in Yukon Territory risks failure for a clinical services plan.</td>
</tr>
<tr>
<td>n</td>
<td>Summary</td>
</tr>
<tr>
<td>----</td>
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</tr>
<tr>
<td>8.7</td>
<td>Central to a clinical services plan of value to the residents of Yukon Territory is the expanded resourcing of ADS and mental health services, especially in the communities. There is no greater need.</td>
</tr>
</tbody>
</table>
Mental Health Services

9.1 Overview

Mental health and addictions are major forces in Yukon Territory, being impacts on the social system, the health care system, and the criminal justice system. The full spectrum of mental health issues is prevalent and generates a huge burden on available resources and family members.

Care for mental health issues (and addictions) requires, at a minimum, a mental health infrastructure, professional services, and a patient, not only seeking care, but also, initiating the care when the time is right for the individual. The foundation of treatment is team-based care with multidisciplinary providers working together in optimized roles.

In addition to services provided through Mental Health Services (MHS) at DHSS, there are two additional community-based providers of care:

9.1.1 Many Rivers Counseling and Support Services

Many Rivers is an NGO, funded, primarily, by the division of Community Health. In addition, funding contributions come from the private sector and agencies, such as United Way. The mental health and addiction services interface with public sector services, and include a family education program and an outreach van as part of a harm reduction program, sponsored by Kwanlin Dun, Blood Ties Four Directions, and FASSY. The services provided outside Whitehorse exclude Old Crow.

There are 11 counselors at Many Rivers, and one clinical supervisor. Four offices provide services, as follows:

- Whitehorse office
  - Carmacks
  - Carcross
  - Teslin
- Watson Lake office
- Dawson City office
  - Pelly Crossing
  - Mayo
- Haines Junction office
  - Burwash landing
Mental Health Services

- Beaver Creek
- Destruction Bay

The intake process at Many Rivers includes an assessment of urgency; the majority of clients are self-referred. If the assessment determines that the client requires mental health services (rather than counseling services), an appropriate referral is made. Each counselor targets 1,200 hours of service, annually. The wait list, previously at six months, has been reduced to three weeks, with a slightly longer wait for the family education program.

Growth predictions are 10%, annually, over the next three years, possibly leading to a staff increase of 25%. The greatest challenge, currently, is the provision of community services outside of Whitehorse.

9.1.2 Blood Ties Four Directions Centre

Blood Ties, also an NGO, is the Yukon Territory information and support centre for HIV/AIDS and Hepatitis C, providing counseling and outreach activities, working closely with other groups. Funding is provided by DHSS and the Public Health Agency of Canada (PHAC). The incidence of HIV/AIDS in Yukon Territory is proportionate to the rest of Canada; the Hepatitis C rates are the highest in Canada at twice the national average. The needle exchange program peaked in 2006; since then the numbers have decreased and stabilized.

Holistic services are provided by:

- Wellness Counselor, with a care and support mandate for those who have tested positive or are at high risk
- Health Promotion Worker, with a prevention mandate
- Unfunded community outreach program that targets one community visit weekly, with travel budget support by PHAC on a year-to-year basis
- Infectious Diseases specialist with visits every 10 weeks

Exhibit 09-01 provides a summary of activities provided by Blood Ties over the past ten years. Exhibit 09-02 provides a summary of the status of individuals accessing services at Blood Ties over the past ten years.
### Exhibit 09-01
Ten-Year Summary of Blood Ties Four Directions Activities

<table>
<thead>
<tr>
<th>Year</th>
<th>Needles In</th>
<th>Needles Out</th>
<th>Crack Kits</th>
<th>Condoms</th>
<th>Drop In</th>
<th>Unique n</th>
</tr>
</thead>
<tbody>
<tr>
<td>2003/2004</td>
<td>42,334</td>
<td>55,427</td>
<td>-</td>
<td>30,035</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>2004/2005</td>
<td>50,913</td>
<td>63,290</td>
<td>-</td>
<td>33,600</td>
<td>1,751</td>
<td>487</td>
</tr>
<tr>
<td>2005/2006</td>
<td>72,309</td>
<td>78,714</td>
<td>-</td>
<td>34,848</td>
<td>2,687</td>
<td>731</td>
</tr>
<tr>
<td>2006/2007</td>
<td>68,188</td>
<td>76,090</td>
<td>5,670</td>
<td>36,000</td>
<td>1,678</td>
<td>246</td>
</tr>
<tr>
<td>2007/2008</td>
<td>40,876</td>
<td>43,352</td>
<td>4,015</td>
<td>29,298</td>
<td>1,769</td>
<td>216</td>
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<tr>
<td>2008/2009</td>
<td>23,610</td>
<td>28,272</td>
<td>3,461</td>
<td>31,765</td>
<td>1,666</td>
<td>211</td>
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<tr>
<td>2009/2010</td>
<td>12,231</td>
<td>17,488</td>
<td>2,824</td>
<td>23,481</td>
<td>3,507</td>
<td>353</td>
</tr>
<tr>
<td>2010/2011</td>
<td>18,836</td>
<td>21,308</td>
<td>2,693</td>
<td>33,769</td>
<td>3,428</td>
<td>214</td>
</tr>
<tr>
<td>2011/2012</td>
<td>22,193</td>
<td>23,228</td>
<td>4,072</td>
<td>37,748</td>
<td>2,511</td>
<td>219</td>
</tr>
<tr>
<td>2012/2013</td>
<td>23,805</td>
<td>26,736</td>
<td>5,832</td>
<td>46,570</td>
<td>3,259</td>
<td>200</td>
</tr>
</tbody>
</table>

### Exhibit 09-02
Ten-Year Summary of Status of Individuals Accessing Services at Blood Ties Four Directions

<table>
<thead>
<tr>
<th>Year</th>
<th>HIV + n access</th>
<th>HCV + n access</th>
<th>Co-infected n access</th>
<th>Unknown Status n access</th>
<th>Total n Access</th>
</tr>
</thead>
<tbody>
<tr>
<td>2003/2004</td>
<td>132</td>
<td>346</td>
<td>223</td>
<td>418</td>
<td>1,119</td>
</tr>
<tr>
<td>2004/2005</td>
<td>192</td>
<td>355</td>
<td>118</td>
<td>1,573</td>
<td>2,238</td>
</tr>
<tr>
<td>2005/2006</td>
<td>266</td>
<td>1,141</td>
<td>352</td>
<td>1,659</td>
<td>3,418</td>
</tr>
<tr>
<td>2006/2007</td>
<td>189</td>
<td>515</td>
<td>99</td>
<td>686</td>
<td>1,924</td>
</tr>
<tr>
<td>2007/2008</td>
<td>107</td>
<td>579</td>
<td>151</td>
<td>544</td>
<td>2,249</td>
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<tr>
<td>2008/2009</td>
<td>114</td>
<td>476</td>
<td>133</td>
<td>538</td>
<td>1,261</td>
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<tr>
<td>2009/2010</td>
<td>58</td>
<td>539</td>
<td>123</td>
<td>1,245</td>
<td>1,965</td>
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<tr>
<td>2010/2011</td>
<td>160</td>
<td>1,088</td>
<td>114</td>
<td>1,622</td>
<td>2,984</td>
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<tr>
<td>2011/2012</td>
<td>92</td>
<td>1,034</td>
<td>180</td>
<td>1,169</td>
<td>2,475</td>
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<tr>
<td>2012/2013</td>
<td>128</td>
<td>1,401</td>
<td>297</td>
<td>1,464</td>
<td>3,290</td>
</tr>
</tbody>
</table>
9.2 Care Gaps

Exhibit 09-03 provides reported waiting times for mental health services in Yukon Territory. It is important to review these data as reflections of demand (that is, referral) and not need (especially, unmet need). One obvious gap is the relative absence of mental health promotion and early intervention. As currently resourced and structured, the available mental health services are not able to meet the need in the territory.

Exhibit 09-03
Waiting Times for Mental Health Services in Yukon Territory

<table>
<thead>
<tr>
<th></th>
<th>Days from Pre-Enrolment to Intake</th>
<th>Days from Intake to Program</th>
<th>Days from Initial Contact to Program Start</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Low</strong></td>
<td>1.00</td>
<td>0.00</td>
<td>5.00</td>
</tr>
<tr>
<td><strong>Average</strong></td>
<td>32.45</td>
<td>69.31</td>
<td>98.09</td>
</tr>
<tr>
<td><strong>High</strong></td>
<td>136.00</td>
<td>224.00</td>
<td>264.00</td>
</tr>
</tbody>
</table>

Notes: These data reflect only those individuals referred to the Whitehorse office who continued beyond the referral stage to receive and intake screen and an assessment or group services through MHS. The high number of days reflects individuals who were very difficult to contact, or could not accept services at the time offered or, for a few, an unusual clinical presentation requiring specific expertise. If a client is a direct agency referral for either the Changeways Depression Management Class or Anxiety Management Class, there is no intake screen requirement.
9.3 Evolution of Care

MHS in Yukon Territory are critically deficient outside of Whitehorse, despite determined efforts by all involved in their planning and delivery. The deficit is very close or equal to that of ADS; and, like ADS, not a single interview during this study was silent on the critical need for expanded and re-tooled MHS to be central in service planning.

The following evidence, in singular considerations and in the aggregate, compels an imperative for change:

- Inadequate housing, as a determinant of health, is a major factor in the incidence and prevalence of mental health disorders in Yukon Territory; addressing this fundamental challenge crosses many departments of government and carries with it substantial financial implications; unfortunately, failure to resolve the housing inadequacy will perpetuate the failure to resolve the mounting pressures and consequences of mental illness.
Mental Health Services

- Access to care by a Psychiatrist is limited by supply and geography; currently there are two Psychiatrists for adult referral in the territory. A Child Psychiatrist provides four clinics, annually, of approximately three days, each. As well, the Child Psychiatrist provides monthly telehealth follow-up sessions.

- Psychiatric care at the jail, with a high risk population, is limited to two hours weekly

- Wait list times for mental health services for children and youth are up to one year in Yukon Territory, although many are triaged on an urgent basis

- Referral access to MHS is impeded by the requirement for a diagnosis; this is a barrier for those in need but without a diagnosis

- Rural access to MHS is described as deficient by the local providers of care

- A previous crisis telephone line was not used to any significant degree

- A Geriatric Psychiatrist provides bi-monthly clinics of two days each

- In general, the “lower functioning” group of patients who would benefit from care continue to be underserviced

- It is reported by some health centres that an increasing amount of mental health assessment and treatment is being sent out of the territory, generally at a significant cost to government

- There is a significant absence of employment coaches to assist a return to the workplace for those with mental health disorders; unemployment and all of the financial consequences tend to perpetuate the illness or lead to exacerbations
## Key Findings Summary

<table>
<thead>
<tr>
<th>n</th>
<th>Summary</th>
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</thead>
<tbody>
<tr>
<td>9</td>
<td><strong>Mental Health Services</strong></td>
</tr>
<tr>
<td>9.1</td>
<td>No provider or service interview conducted during the study was silent on the enormity of the problem with, and impact of, the management and challenges of mental health services in Yukon Territory.</td>
</tr>
<tr>
<td>9.2</td>
<td>The full spectrum of mental health issues is prevalent and generates a huge burden on available resources and family members.</td>
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<tr>
<td>9.3</td>
<td>Care for mental health issues (and addictions) requires, at a minimum, a mental health infrastructure, professional services, and a patient, not only seeking care, but also, initiating the care when the time is right for the individual. The foundation of treatment is team-based care with multidisciplinary providers working together in optimized roles.</td>
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<tr>
<td>9.4</td>
<td>Mental health services are provided by MHS at DHSS, Many Rivers, and Blood Ties.</td>
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<tr>
<td>9.5</td>
<td>Many Rivers has 11 counselors and four territorial offices. Growth predictions are 10%, annually, over the next three years, possibly leading to a required staff increase of 25%. The greatest challenge, currently, is the provision of community services outside of Whitehorse.</td>
</tr>
<tr>
<td>9.5</td>
<td>Blood Ties is the Yukon Territory information and support centre for HIV/AIDS and Hepatitis C, providing counseling and outreach activities, working closely with other groups. As well, it runs a needle exchange program, and distributes Crack kits, and condoms.</td>
</tr>
</tbody>
</table>
Palliative care is about life, not death.\textsuperscript{45} It depends on community care and, not infrequently, funding through charitable agencies that complement public funding and policy. Too often, it is initiated in the terminal stages of illness when, in fact, optimal palliation can be started much earlier in the course of an illness where death is predictable. It is the final stages of an illness where the burden of care is at its peak, with extraordinary demands on families and a variety of different service providers.

In Yukon Territory, particularly in rural settings, concerns and frustrations have been expressed regarding the absence of an infrastructure for care, sometimes leading to the transfer of patients away from their home or home community. Addressing this requires sensitivity to patient choice and system capacity.

Significant work has been undertaken in Yukon Territory, including local, national, and international research into strategies, frameworks, and strategies, incorporating interviews with stakeholders and policy-makers. These interviews include interagency teams, health care professionals, First Nations communities, and the Health and Social Services Council. Recommendations and options for a palliative care framework are anticipated in the spring of 2014, built on a foundation of principles and recognizing, “the many services and organizations that are involved in the delivery of quality hospice, palliative, and end-of-life care.”\textsuperscript{46}

The suggested approach in this framework can reduce the need and use of acute and long-term care services and resources, and improve the quality of life for Yukoners and their families facing the need for palliation. Individual quality of life and dying will be improved.

This study supports the initiative wholeheartedly; it is an integral part of the continuum of care in a clinical services plan. As reported in the Yukon Palliative Care Framework, the average life expectancy in 2007-2009 was 76.7 years (marginally lower than the rest of Canada), and approximately 200 Yukoners die annually. The per capita rate of malignancy exceeds the Canadian average, as do the incidence and prevalence of many chronic conditions, especially cardiovascular disease.

10.2 Care Gaps

The absence of reliable, integrated data does not enable a statistical logic model. Many instances of unsuccessful palliation are anecdotal, but with undeniable consistency, especially outside of Whitehorse. This can only be addressed through a territorial approach to quality end-of-life care, centred on the patient and the families. Repair of the current state will not

\textsuperscript{45} \textit{Globe and Mail}, February 24, 2014, page L 1

\textsuperscript{46} Yukon Palliative Care Framework 2014.
occur by happenstance; it requires supportive policy and funding models and a pan-territorial commitment.

10.3 Evolution of Care

The Clinical Services Plan is totally supportive of the work-to-date of the framework initiative and incorporates the approach that is developing as an evolution of care. The key points of this model are, as follows:

• Four key principles:
  ‣ Continuum of integrated services as part of collaborative care
    ➡ Includes early identification of those who would benefit, including those with severe chronic disease and dementias
    ➡ Seamless delivery in a variety of settings and employing a range of options tailored to an individual circumstance
  ‣ Supporting care providers with education, resources, and partnerships
  ‣ Best practices of evidence-based services and care in a variety of settings
  ‣ Evaluation and accountability
    ➡ Including a metric database and qualitative outcome measures
• Integrated palliative and end-of-life care is an essential element of the broader health care system

• Access and respect for individual choices are paramount and not defined by geography

During the conduct of the study, concern was expressed about the risk of the end of funding for the palliative care team.

This is considered an essential investment on the part of DHSS. Continuing support for the framework initiative and its implementation are strongly encouraged.

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47 Quoted from the referenced framework initiative

Health Intelligence Inc. and associates

Clinical Services Plan for Yukon Territory
10.4 Key Findings Summary

<table>
<thead>
<tr>
<th>n</th>
<th>Summary</th>
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<tr>
<td>10</td>
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| 10.3 | During the conduct of the study, concern was expressed about the risk of the end of funding for the palliative care team.  
This is considered an essential investment on the part of DHSS. Continuing support for the framework initiative and its implementation are strongly encouraged. |
| 10.4 | The expanded palliative care team is a logical fit with the recommendations in this study. |
11.1 Concepts and Definitions

Key to addressing the health and social services needs of residents of Yukon Territory are collaborative and team-based care. Collaborative care is central to workforce and clinical service planning, with a substantial and sustained impact on primary care and outcomes. Collaborative care teams can be described as providers that bring separate and shared knowledge together to support a comprehensive range of high quality, effective health care service. Collaborative care is integral to workforce and service planning, especially in a number of primary care and social services settings. Social services needs of residents of Yukon Territory are collaborative and team-based care. Collaborative care is central to workforce and clinical service planning, with a substantial and sustained impact on primary care and outcomes. Collaborative care teams can be described as providers that bring separate and shared knowledge together to support a comprehensive range of high quality, effective health care service. Collaborative care is integral to workforce and service planning, especially in a number of primary care and social services settings. It is the centerpiece of the proposed model of care and delivery that would address many of the challenges faced in Yukon Territory.

In 2000, the Ontario College of Family Physicians characterized collaborative care as, . . . a patient and family centred process for communication and decision-making that enables the separate and shared knowledge and skills of care providers to synergistically influence the client/patient care provided . . . designed to promote the active participation of several care providers . . . and fosters respect for the contributions of all members of the team.

In this context, secondary concepts include “quality” and “effective productivity.” The core attributes of quality health care have been defined by the Institute of Medicine as: safe, effective, patient-centred, timely, efficient, and equitable. The Western and Northern Health Human Resource Planning Forum defined “effective productivity as an increase in outputs per unit of input where there is evidence of improved quality of care and improved health outcomes that contribute to achieving health system goals.”

The definition of effective productivity, linking an economic model and indices with the quality model and outcomes, avoids contemplating either in isolation. No two collaborative care teams need be identical; the team may include a family physician, dietitian, nurse, pharmacist physiotherapist, and social services professionals, with its constitution designed to reflect the needs of the population served.

Significant parameters of model success are:

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48 Institute of Medicine, Shaping The Future For Health Crossing The Quality Chasm: A New Health System For The 21st Century, March 2001
• Role optimization
• Skilled leadership
• Avoidance of hierarchical roles

Much continues to be misunderstood with respect to the collaborative care model. The following observations on collaborative care models inform further the planning of clinical services:

• Gaps in the provision of care can be assisted by expanded roles and use of the family practice nurse, advanced practice nurse (nurse practitioner), and licensed practical nurses

• Many continue to misunderstand the collaborative care model; too often, it is assumed that having different types of health professionals together means collaborative care; collaborative care is a delivery model, not an office arrangement

• The model can be expensive, but provides true value, with integrated care that focuses on outcomes rather than outputs; this focus presents a real challenge in conducting a cost-benefit analysis (it is easy to quantify the upfront costs and difficult to place monetary value on the subsequent system savings)

• Collaborative care has a particularly important role in providing care to the elderly, to complex patients, and to those requiring mental health services

• Nurse practitioners, either as part of an integrated team or as a clinic lead, have an integral and expanding role in delivery of care

• Physician workforce planning requires the flexibility to adjust to new roles assumed by nurse practitioners, other advanced practice nurses, midwives, and physician assistants

• Care gaps will be narrowed by expanded roles and use of the family practice nurse, particularly through collaborative care models

• Collaborative care can be described as one of many models of similar care; the essence of the model, however, is that it is much more than simply multiple professional disciplines under a single roof; rather, it is an integrated care model with professionals working “top-of-license” in providing patient-centred care

• Collaborative care is non-hierarchical - all team members are equals

There are four key lessons identified as the elements of a successful approach to collaborative care:

• Shared philosophy and values, operating from a patient-centred, harm-reduction perspective
• The minimum team constituents must include a dietitian, nurse, occupational therapist, and physician; expansion beyond this is desirable
• Community development beyond the walls of the centre
• Mutual respect among providers, fostering strong communication and alignment of goals

11.2 Yukon Collaborative Practice Initiative

The Yukon Collaborative Practice Initiative was constituted to advance collaborative care. The initiative settled on a definition of collaborative practice as an interprofessional process of communication and decision making that enables the separate and shared knowledge and skills of different healthcare providers to synergistically influence the client/patient care provided. It occurs when healthcare providers work with people from within their own profession, with people outside of their profession, and with patients/clients and their families.

The initiative supports the optimized use of nurse practitioners, and other health professional skills and competencies, to deliver healthcare by providing opportunities for these health practitioners in collaborative, interprofessional relationships with physicians.

To support the further integration of NPs and HPs into interprofessional teams, funding is provided through agreement between the DHSS and the YMA for four years, as follows:  

<table>
<thead>
<tr>
<th>Fiscal Year</th>
<th>Amount</th>
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<tbody>
<tr>
<td>Fiscal 2012 – 2013</td>
<td>$200,000</td>
</tr>
<tr>
<td>Fiscal 2013 – 2014</td>
<td>$300,000</td>
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<tr>
<td>Fiscal 2014 – 2015</td>
<td>$300,000</td>
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<tr>
<td>Fiscal 2015 – 2016</td>
<td>$400,000</td>
</tr>
<tr>
<td>Fiscal 2016 – 2017</td>
<td>$400,000</td>
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</table>

Supporting the integration of NP roles, in particular, will help increase the access to healthcare services for high need priority populations and local gaps in care – frail elderly, chronic co-morbid, mental health and substance use, maternity, and unattached patients.

11.2.1 Principles and Limitations of the Initiative

• Services must meet identified gaps within the community and be focused on longitudinal care and attachment; NPs/HPs shall work across the system, in collaborative practice with physicians and other health professionals to integrate care and increase access and continuity of care for high need priority clients (e.g.,

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49 Unused funding can be rolled over from one year to the next
frail elderly, chronic co-morbid, mental health and substance use disorders, maternity, unattached)

- Targeted services must align with health sector identified strategic needs (e.g., frail elderly, persons with mental health and/or substance use disorders, maternity, unattached clients, persons with chronic diseases)

- In order to support innovative applications, there are no restrictions on how funded positions are distributed; for example, an applicant may propose to share an NP/HP with another applicant or apply for only part-time funding of an NP/HP position (e.g., 2 half days/week) or ask for 0.2 FTE of a nurse practitioner position and 0.2 FTE of another health professional position

- The proposed service must ensure that clients are able to establish a continuous relationship with health care providers for comprehensive, family health care close to home

- All applications for funding for an NP/HP position must include the responsibility to support the NP/HP through the start-up phase and after full implementation.

- NPs will practice to full scope as independent practitioners, but must be part of an interprofessional team; funding will not be extended to NPs or HPs working in isolation

- Funded organizations will be required to provide reporting, including patient encounters, to HSS as per the funding agreement

- Applications for the funding of NP/HP services in acute care practice settings will not be considered at this time

11.2.2 Eligibility

Funding will be awarded through an application process and will target mainly NP positions, working with an identified interprofessional health team, providing longitudinal care services to identified at-risk client groups or vulnerable client population(s) and/or under-serviced areas. However, funding is also available for positions of other health professionals legally entitled to work in Yukon.

The application must clearly describe how the following criteria are met:

- Identify community gaps and needs and how the proposed nurse practitioner or other health professional position would fill these identified gaps

- Clearly define how the position would improve the accuracy, timeliness and efficiency of the health care system and explain what would be measured (i.e., what gaps would be bridged and how that would improve outcomes) and set
clear and measurable patient outcomes to demonstrate savings to the healthcare system

- In terms of operational readiness, the physician resource capacity must be clearly demonstrated and resources and supports for the proposed NP/HP must be clearly identified and explained how it will be put in place

- Clearly define the roles of the team members

- Ensure the role being proposed is suitable for a Nurse Practitioner and not a service that could be provided by another health professional (i.e., Registered Nurse); the same applies to the roles of other proposed health professionals

- Avoid service duplication and provide clarification on how patients will be rostered to prevent duplication of billing

- Demonstrate how the NP/HP will be practicing to full scope of practice; identify the patient demand and rostering of patients (i.e. the nurse practitioner or other health professional should not be linking patients to the general practitioners and not be seen as a “physician extender”)

- Identify how family physicians engage in meaningful collaboration with each other as well as with other healthcare providers in the collaborative practice; meaningful collaboration is defined as follows (all characteristics must be present):
  - Team members provide care to a common group of patients
  - Common patient population
  - Members develop common goals for patient outcomes and work towards those goals
  - Chart verification of interaction among team members in patient care, as appropriate
  - Appropriate roles and functions are assigned to each member of the team
  - Job descriptions established and available for each member of the team
  - The team possesses a mechanism for sharing information about the patient
  - Common patient record and/or shared Electronic Medical Records (EMR)
  - The team possesses a mechanism to oversee the carrying out of plans and to make adjustments, as necessary
  - Set time for formal collaboration (i.e. case conferences, team meetings)
11.2.3 Outcomes Measurement

Significant consideration is required on how well the expected results of the implemented service can be measured and evaluated, with an emphasis on Triple Aim results, aiming to capture at least three of the six expected outcomes. Expected outcomes may include, but are not limited to:

- Improved access to care
- Improved patient, caregiver and family experience of care
- Improved provider experience
- Increased attachment rates to primary care for target populations
- Reduced hospitalizations, use of emergency departments and delayed admissions to residential care facilities for target populations
- Reduced per capita costs for target populations

11.3 Evolution of Care

As collaborative care evolves, especially within a vast geography and dispersed population, the resulting model of a Regional Collaborative Care Centre (RCCC) will assume the culture and priorities of the Yukon Territory. That notwithstanding, each centre will have common principles and objectives, and each will evolve as a care model at a pace determined by DHSS, community commitment, and available resources. As indicated in section 11.3 Regional Collaborative Care Centres and the greater detail in section 16.2 Health Human Resources Model, the ideal would be a comprehensive RCCC from the outset; however, it is recognized that circumstances in some settings may lead to a two-step implementation that begins with integrated social services and follows with a comprehensive model.

As an example of the possibilities, following is a description of the North End Community Health Centre (NECHC) in Halifax, Nova Scotia. Established in 1971, the centre provides services to a diverse, multi-ethnic, low-income community, home to students, artists, and the gay community. The staffing started with volunteers and has evolved ever since.

Many of the clients of the centre suffer from mental health and other chronic diseases. Shared and collaborative care evolved in recognition of both co-morbidity and the attendant need for extra attention. The team-based approach is reflected by the range of professionals who provide care:

- Addiction counselor
- Administrative staff

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• Community nutritionist
• Management team
• Mental health workers
• Nurses (four at 2.4 FTE, each with special interests)
• Nurse practitioners (three, one of whom is also a pharmacist, at 1.0 FTE)
• Physicians (five at 4.0 FTE, each with special interests)
• Psychiatrists (including 0.2 FTE child and adolescent psychiatrist)
• Social worker (1.0 FTE)
• Volunteers (from community)

The NECHC has been successful, attributable to the following characteristics:

• Interprofessional team with varied and specialized backgrounds, each member working to top-of-license
• All team members are located in the centre; services are integrated and goals, synchronized
• Collaboration is the constant in all care provision, both informally and at weekly collaborative practice rounds
• Improved information systems

There are four key lessons identified as the elements of a successful approach to collaborative care:

i. Shared philosophy and values, operating from a patient-centred, harm-reduction perspective

ii. Team constituents - the minimum team constituents must include a dietitian, nurse, occupational therapist, and physician; expansion beyond this is desirable

iii. Community development beyond the walls of the centre

iv. Mutual respect among providers, fostering strong communication and alignment of goals
### 11.3 Key Findings Summary

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</tr>
<tr>
<td>11.2</td>
<td>A comprehension of true collaborative care and support for its wide territorial implementation was evident throughout the study, especially from non-physicians, but also by some physicians.</td>
</tr>
<tr>
<td>11.3</td>
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<td>11.5</td>
<td>The development of highly function RCCCs is a priority; their reconfiguration in Whitehorse (Capital Collaborative Care Centres) should follow, such that the base unit of care across Yukon Territory is a collaborative care centre.</td>
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Nursing Services

12.1 Current State

Nursing services in Yukon Territory are constituted by:

- Licensed Practical Nurse
- Registered Nurse
- Communicable Disease Control Nurse (can Rx and test for STIs)
- Mental Health Care Nurse
- Primary Health Care Nurse (expanded scope)
- Community Health Nurse (not expanded scope)
- Nurse Practitioner

The Canadian Institute for Health Information has collated nursing data from across the country; summary data **(Compendium 137)** for Yukon Territory are, as follows:

- The regulated nursing workforce in Yukon Territory grew by 17.7% between 2008 and 2012, reaching a total of 466 regulated nurses
- Using Statistics Canada data, the rate of regulated nurses per 100,000 population increased from 1,196 in 2008 to 1,291 in 2012
  - Between 2008 and 2012, the rate per 100,000 for RNs increased from 1,009 to 1,036, as did the rate per 100,000 for LPNs, increasing from 187 to 255
  - The proportion of LPNs making up the regulated nursing workforce increased by 4 percentage points from 2008, representing a four-year increase of 30 LPNs
- The average age of regulated nurses in Yukon Territory in 2012 was 44.5 years
- In 2012, 13.5% of the regulated nursing workforce was under age 30 years, an increase of 5 percentage points from 2008; as well, the proportion of regulated nurses age 60 years or older increased from 7.7% in 2008 to 10.9% in 2012

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51 Canadian Institute for Health Information. Registered Nurses, 2012 - Summary Report

52 The large increment, in part, reflects a relatively small denominator; as well, contribution to the increase may reflect the opening of new facilities and expanded staffing in the Emergency Department of WGH; further, 2013 legislation provided for an increased scope of practice for LPNs

53 Likely skewed by extrapolation to a population measure of 100,000
• In 2012, 49.6% of regulated nurses in Yukon Territory were employed full-time (compared to the national figure of 56.9%)

• In 2012, 22.0% of regulated nurses worked in remote parts of the territory, compared with 23.2% of the population living in remote parts of the territory

• Of the 67 graduates of the Yukon LPN program employed in Canada in 2012, 71.6% were employed in the territory (and, 17.9% in British Columbia, 4.5% in Saskatchewan, and 3.0% in Ontario)

12.2 Licensed Practical Nurses

June 2013 marked the full scope legislation for License Practical Nurses (LPN) in Yukon Territory, modeled after the related work in Alberta. LPNs in Yukon Territory number 160 - 170 (with an estimated FTE count of 110 - 120). Most work in continuing care and detoxification, with the remainder working part-time in hospitals\(^{54}\), clinics, and jail.

Most LPN services are provided in Whitehorse, Dawson City, and Watson Lake. Community Care benefits from a range of LPN services, including palliative care at home, post-operative care for procedures done elsewhere, therapy, and wound care.

There are 12-15 new graduates annually in Yukon Territory; the last two graduating classes were absorbed into Whitehorse.

12.3 Advanced Practice Nursing

For the purpose of this report, as is generally accepted, advanced practice nursing is considered to be the same as Nurse Practitioner services.

Incremental changes in policies that underpin the delivery of primary health care in Canada produce cumulative effects on the system that is otherwise shaped by policy legacies. The three key legacies have been identified as:

i. Canadian federalism, in which jurisdiction over health is assigned to provinces and territories

ii. Public payment for private medical service

iii. Limitation of compulsory coverage to hospital and physician services;\(^{55}\) the self-reinforcement of legacy policies has been referred to as “path dependence” in social science literature.\(^{56}\)

\(^{54}\) At Whitehorse General Hospital, only on the medical ward

\(^{55}\) This is discussed in detail in Hutchison B, Abelson J, and Lavis J. Primary Care in Canada: so much innovation, so little change. Health Aff 2001;20(3):116-128

\(^{56}\) This is the central hypothesis advanced by Pierson in Increasing Returns, Path Dependence, and the Study of Politics in American Political Science Review (June 2000):251-267
The NP model provides an example of the challenges of introducing a new primary care provider into a public health care system that is defined, in part, by the funding of physicians. There continues to be an emerging consensus among health care policy makers on the importance of the NP model of care, occasionally at odds with the policy legacies. Support for the NP model is voiced by many physicians, although others remain uncertain, and still others question the economics and clinical efficacy of NP care. The NP model is largely one of primary care, but can extend into some areas of specialty care, as well.

Political and public support has grown for the delivery of primary care by NPs; this support extends beyond more traditional collaborative care and integrated models to the endorsement of “independent” or “free-standing” clinics. However, the efficacy and economics of “independent” care are questioned by some primary care physicians. Others extend this criticism to the collaborative model. Notwithstanding this issue, the delivery of primary care services in all jurisdictions is being transformed by politicians, physicians, other health care providers, and the patients that they serve. The significant backdrop to this transformation is a population wherein nine million Canadians (about 27% of the total Canadian population) live in rural and remote communities; many of these communities have received minimal or inconsistent primary care, and very limited access to secondary or tertiary care.

Access to care is a powerful socioeconomic and political force and is central to extant and developing models and policies. In support of this, the College of Family Physicians of Canada (CFPC) has endorsed collaborative practice and interdisciplinary teams. The model of care advanced by the CFPC is a Family Practice Network (FPN) incorporating multidisciplinary, integrated teams of FPs, nurse practitioners, nurses, midwives, and other health care practitioners working together to provide comprehensive, integrated care with patients at the centre. The FPN envisioned varying roles, dependent upon the needs of the population served, but, generally, with a FP responsible for the lead role.

Debating the roles and work of FPs and NPs, and their relationships, is not new. Over the past three to four decades, comparative studies have been undertaken, yielding a literature base that is both deep and broad. Studies have examined practice characteristics and made comparisons between the two professions. Often the conclusions are that NPs are “valuable resources” rather than “cheaper substitutes” for FPs. Throughout, supporting and contrary opinions co-exist.

An aging nursing workforce, perceived job instability, and uncertainty among new graduates are the primary causes of an unstable nursing workforce. Within Canada, inter-provincial mobility has led to nurses migrating to jurisdictions that offer stable employment opportunities and improved incentives, including compensation packages.

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57 Primary Care and Family Medicine in Canada: A Prescription for Renewal. College of FPs of Canada, October, 2000

The Nursing Union Activist Focus Group Report suggested that both the lack of security and isolation in northern and remote areas have been ongoing concerns of nurses working in such areas, and make recruitment and retention particularly challenging, even in the face of advantageous compensation differentials.

12.3.1 Data Context

The variability in the size of the NP workforce is likely due, in part, to the timing of the implementation of licensing programs in any one jurisdiction. All Canadian jurisdictions now have legislation in place for the profession, with Quebec and Prince Edward Island being the enacting legislation in 2006; legislation in Yukon Territory was the last to be enacted (in 2012).

With respect to NP demographics, the number of female NPs exceed male NPs by a ratio of approximately 16:1 and more than 25% have achieved master’s or doctorate levels of education (this percentage is expected to increase). Most NPs (approximately 75%) practise in urban settings, with the remainder evenly divided between rural and remote settings, with the majority employed in community health.

12.3.2 Canadian Nurse Practitioner Initiative

In 2006, the CNPI published its report as a framework providing a roadmap for governments, regulatory bodies, employers, educators, unions, and professional associations. This roadmap, designed to advance the NP agenda, identified the required building blocks to converge with political will, professional commitment, and inter-professional collaboration.

The CNPI was clear in identifying the critical relationship between NPs and physicians as a driver of successful integration and the basis of collaborative care. Collaborative practice was envisioned as an inter-professional process for communication and decision-making that enables the separate and shared knowledge and skills of care providers to synergistically influence the patient care provided. Seven essential elements were identified to optimize collaborative care: cooperation, assertiveness, responsibility and accountability, autonomy, communications, coordination, and mutual trust and respect.

There is considerable importance afforded the CNPI; namely, it is the foundation upon which the current NP program development and advancement are built. It provides the nucleus of the short-term and long-term visions and is the resource for NP scope of practice and educational issues.

Following is a summary of the key points embodied in the CNPI:

- Definition of an NP: A registered nurse with additional educational preparation and experience who possesses and demonstrates the competencies to autonomously diagnose, order and interpret diagnostic tests, prescribe pharmaceuticals, and perform specific procedures within their legislated scope of practice.
Nursing Services

- Role description: Identifies competencies consonant with provincial or territorial registration or licensure; this role is based on evidence and an emphasis on health promotion and partnership development that complements other health-care providers

- Funding mechanisms: Respond to the relationship between NPs and physicians

- Principles and elements of a pan-Canadian legislative and regulatory framework: Title protection, clearly defined scope of practice, recognition of an autonomous role, accountability, education, and national accreditation

- Collaborative team: Practice models based ideally within a community health model and anchored in salaried or contractual arrangements

- Educational framework: Pan-Canadian and to include inter-professional education, varied distance delivery methods, and a consistent core curriculum that includes clinical practice, continuing education, and recognition of prior learning

- Health human resource planning models across health professions: Including wait times, access to care, population health needs, funding models, and workload

- Strategic message and communications approach: Including emphasis on the need for the value-added role of the NP

- Primary challenges: Transition planning for increased educational requirements, a definition of collaborative practice, dedicated NP funding that includes isolation premiums and continuing education, differentiation between the roles of specialized NPs and primary care NPs, and the maintenance of a core curriculum

12.3.3 Literature Review

Search processes focused on the past 10 years revealed a vast literature on NPs. The preliminary 1,536 citations were distilled into 353 with potential relevance to this study. These were refined further based on direct relevance and confirmation of the methodology.

Evidence of Clinical Effectiveness: The literature assessing the quality of care provided by NPs compared to FPs in primary care settings is fairly consistent in its reporting of similarity in quality of care delivered by the two professions. In the settings examined by the researchers, NPs achieved high levels of patient satisfaction and performed as well as (or better than) FPs in areas such as quality of documentation, appropriateness of diagnoses and referrals, rate of return visits, use of protocols, medication ordering, communication, provision of health information, and discharge instructions.

See Appendix A.8 Literature Catalogue on page 300
Evidence of Cost Effectiveness: A balanced analysis reveals that NPs are not a less expensive alternative to FPs; further, cost effectiveness was not put forward as a characteristic element in the formative thinking about NP models. Overall, the literature on comparative costs for NPs versus FPs is scant and no comprehensive cost-effectiveness analyses were located. A significant limitation when considering the cost effectiveness of NP implementation in Canada is that much of the literature represents the UK or Australia where physicians-in-training were the comparator, a less costly alternative for the health care system than practising FPs. Results showed that, in general, NPs saw fewer patients and took longer per patient visit; however, this was balanced by lower NP salary costs. Resource consumption (investigations and medications ordered, referrals, etc.) was mostly similar between professions. Authors often noted that as costs between NPs and FPs are similar, it is more important to consider the practice setting (patient volumes and acuity) and the skill mix of the providers than to focus on costs.

Issues of Implementation: Researchers in Canada, the United States, and the United Kingdom have found fairly consistent evidence of real and potential barriers to NP introduction, including:

- Lack of knowledge about NP scope of practice and role for some physicians, which can lead to reluctance to collaborate, and under-utilization of NP skill sets; it can also result in negative attitudes towards NPs among other members of a health care team
- Physician resistance, due to personal issues such as feeling threatened by autonomous NPs, changes to the practice structures to siphon off the straightforward (and sometimes more enjoyable) cases, on-call issues where physicians provide on-call and NPs do not, and funding challenges where government has not independently financed NPs and physicians must fund them out of FFS earnings
- Physician concern about NP competence and training
- Evolving bureaucratic structures such as legislation and regulation, educational programs, protection of titles, and funding structures
- Lack of clearly defined roles for NPs prior to their introduction, leading in some cases to confusion and gaps in communication
- Anticipated reluctance on the part of patients to care provided by an NP as a replacement, rather than augmentation, of FP care

The literature also provides recommendations to address the implementation barriers:

- Educate physicians (and other providers) about NPs through activities, such as: formal orientation for those in practice, joint continuing education opportunities, interdisciplinary education during training in medical school and NP programs, and general practice-based preceptorships/mentorships
• Ensure that NP roles and scopes of practice are clear within the NP profession and beyond to other professions and the public/patients, particularly when NPs are to be introduced into a practice or community

• Maximize interdisciplinary communication through regular meetings and rounds

• Revise or encourage funding systems that emphasize patient-centred care by teams

• Within care teams, ensure that roles, authority, and accountability are clear

• Fund health services research focussed on integrated care models

• Assess and plan the workforce jointly

12.3.4 Perspectives

Over the past few decades, the introduction of NPs to Canadian health care has progressed in fits and starts. Legislation has been passed, numbers of providers are on the increase, and NP roles are diversifying. Coincident with this is a growing need for NPs in primary care, as there do not appear to be easy solutions to ongoing FP under-service in rural and remote areas (and also in urban and suburban areas where large numbers of orphan patients are unable to find providers).

Professional organizations have reacted to this in various ways, with their reactions waxing and waning as factors such as government programming and funding change and evolve. Not surprising, nursing organizations are very supportive of the profession as they see a need for NPs and appreciate the roles they can fill. In addition, this form of advanced practice nursing, particularly the autonomous nature of the profession, augments the role of nursing and creates new career challenges for some of its members.

In contrast and as a broad generalization, physician organizations have shown some reluctance in support of NP models. In the early part of this decade, there was an apparent spirit of cooperation with shared models of care and inter-professional collaboration emerging. Many details, such as liability concerns, were worked out, and a number of practical processes and documents were produced. However, this progress seems to have been side-tracked, at least on a “political” level, as the NP model has moved from working under the direction of FPs to independent practice, including referring to specialists, and ordering CTs and MRIs. With the Ontario Premier’s November 2007 announcement of the funding of 25 NP-led clinics, a backlash from physician organizations was evident in editorials and press releases. FPs clearly felt threatened by an independent NP model and were reluctant to tolerate its expansion; for many physicians, this mindset continues, albeit with less frequency and intensity. Often, there is a generational variable in the receptiveness to expansion of the NP model, with younger physicians being very receptive.
12.3.6 Summary of Current State

Compelling evidence suggests that opportunity afforded by the expansion of the NP model should supplant conflict, and that FPs can benefit by the application of integrated reform, shifting the focus onto collaborative care models, both local and remote in nature.

The literature on costs for NPs versus FPs is scant and no comprehensive cost-effectiveness analyses were located. Other results showed that, in general, NPs saw fewer patients (and, of a generally complex multi-system profile) and provided longer patient visits; however, this was balanced by lower NP salary costs, and in some studies, lower educational costs. Resource consumption by NPs and FPs (investigations, medications, referrals) was generally similar.

Therefore, cost effectiveness debates and comparisons are incomplete and may not be achievable at any level, other than superficial, due to mixed compensation models and variable patient acuity. It can be stated that the NP model, in isolation, is not less expensive than the traditional medical model. The productivity of the medical model may be greater, but only in the measurement of patients served per unit of time. Ultimately, these discussions are not relevant, in part due to the absence of controlled studies adjusted for acuity. More important is the need to focus on the challenges of advancing a collaborative, integrated model and to determine what needs to be done to improve it further. It is equally important to understand that not all providers are suited to true collaborative care and that certain populations are more likely to benefit from its availability.

Primary care reform is relentlessly proceeding and evolving, with replacement of the traditional entrepreneurial, physician-centric model compensated by FFS funding to a team-based, multidisciplinary, non-FFS, patient-centric approach. NPs are increasingly important members of these health care teams.

A large body of literature reports on the clinical effectiveness of NP practice with consistent evidence that the quality of NP care is similar to that provided by FPs for selected patient populations, particularly in preventive care and chronic disease management. NPs have achieved high levels of patient satisfaction and performed as well as (or better than) FPs in areas such as documentation, appropriateness of diagnoses and referrals, rate of return visits, use of protocols, medication ordering, communication, health information, and discharge instructions.

12.3.7 Whither Nurse Practitioner Anesthesiologists

Modeling can assess how the anticipated need for anesthesia services can be addressed using current resources (Anesthesiologists and GPAs), or by incorporating new types of resources, such as Anesthesia Assistants (AAs) and Nurse Practitioner Anesthesiologists (NPAs). The

\[60\] For a comprehensive examination of NPAs, see Anesthesiology Services in British Columbia and Canada: Current Status and Future Options, Institute for Health System Transformation and Sustainability, January 31, 2013 (Peachey and Croson)
literature supports the involvement of these types of practitioners, in both supporting and autonomous roles.

A key point summary of the typical service data is, as follows:

- The need for anesthesiology services increases with age; it is generally greater for women up to 50 years of age and becomes greater for men later in life.

- The proportion of the total population receiving anesthesiology services (generally <10%) and, correspondingly, the overall need for these services are generally greater in less densely populated areas.

- Anticipating future need for anesthesia services has been approached using Small Area Variation Analysis (SAVA) applied against estimates of expected future population.

- The need for anesthesiology services is expected to grow by approximately 2% per year, or about 23% over ten years from 2012 to 2022; again, these changes will vary across the territory.

- Using current types of practitioners, the number of providers should increase in similar magnitudes to meet those needs, or create pressure for greater workloads for each individual practitioner. There is also an additional challenge of changing lifestyle and workload attitudes among physicians that could add to further pressures to meet the required needs, possibly in the order of a 10% increase among anesthesiologists.

- The introduction of new types of providers provides an opportunity to address the expected growth in need for anesthesiology services. Two types of providers were investigated: Nurse Practitioner-Anesthetists (NPAs), and Anesthesia Assistants (AAs). NPAs were considered under two possible forms of inclusion: as stand-alone providers, functioning autonomously, or under the supervision of physicians, as assistants. The latter form of inclusion would be in the same capacity as AAs, who would function as support for physicians to increase throughput.

- Modeling has investigated the introduction of two modes of support: stand-alone, and assistance. The results suggest that engaging assistants as support under the supervision of physicians would provide a greater and more immediate effect. This is in large part due to the ability to enlist AAs sooner into the process, and likely in greater numbers. The first training program in Canada for NPAs has recently graduated its first provider. There is, however, the possibility of enlisting NPAs from out of the country to increase the pool of resources.

- Modeling figures have been considered in “current dollar terms.” Inflationary pressures will drive expected costs upward, as always. While no scenario anticipates that the current line on expenditures will be held at current levels, the results suggest that by broadening the mix of providers it may be possible to achieve some containment of the increases by up to 30% over the current physician-only model.
12.4 Key Findings Summary

<table>
<thead>
<tr>
<th>12</th>
<th>Summary</th>
</tr>
</thead>
</table>
| 12.1 | **Nursing Services** in Yukon Territory are constituted by:  
- Licensed Practical Nurse  
- Registered Nurse  
- Communicable Disease Control Nurse (can Rx and test for STIs)  
- Mental Health Care Nurse  
- Primary Health Care Nurse (expanded scope)  
- Community Health Nurse (not expanded scope)  
- Nurse Practitioner |
| 12.2 | The regulated nursing workforce in Yukon Territory grew by 17.7% between 2008 and 2012, reaching a total of 466 regulated nurses. |
| 12.3 | It is not unusual for nurses to be providing non-nursing functions, due to limited resources and staffing. |
| 12.4 | - The average age of regulated nurses in Yukon Territory in 2012 was 44.5 years  
- In 2012, 13.5% of the regulated nursing workforce was under age 30 years, an increase of 5 percentage points from 2008; as well, the proportion of regulated nurses age 60 years or older increased from 7.7% in 2008 to 10.9% in 2012  
- In 2012, 49.6% of regulated nurses in Yukon Territory were employed full-time (compared to the national figure of 56.9%)  
- In 2012, 22.0% of regulated nurses worked in remote parts of the territory (compared with 23.2% of the population was living in remote parts of the territory)  
- Of the 67 graduates of the Yukon LPN program employed in Canada in 2012, 71.6% were employed in the territory (and, 17.9% in British Columbia, 4.5% in Saskatchewan, and 3.0% in Ontario) |
| 12.5 | Nurse Practitioners deliver high quality, cost-effective care, and are ideal members of a collaborative care team and as discipline specialists and managers of CDM programs. There is significant concern at the delays in advancing the NP model despite enactment of the requisite legislation. |
| 12.6 | Some physicians have resisted the granting of admitting and discharge privileges to NPs. |
| 12.7 | Still unexplored in Yukon Territory and Canada is the potential contribution of Nurse Practitioner Anesthetists. |
| 12.8 | Stabilization of the nursing workforce and role optimization is the fundamental building block to implementation of collaborative care across Yukon Territory |
13.1 Overview

According to the National Household Survey 2011, about one quarter of the Yukon population identifies as largely First Nations peoples [Exhibit 13-01]. The Whitehorse survey results indicate that about 17% consider themselves as having a First Nations, Inuit, or Metis identity. The town of Watson Lake reported 26% and the town of Dawson City, 33%. Information from the Department of Health and Social Services places the estimates of the First Nations population in Watson Lake at a higher level, about 50%, underscoring a weakness in the way that status is tracked. Regardless of exact tallies, First Nations represent a significant component of the Yukon Territory population.
## Exhibit 13-01
### Population by First Nations Identity and Age Group

<table>
<thead>
<tr>
<th></th>
<th>Total - Age groups</th>
<th>Yukon GNR=29.9%</th>
<th>Whitehorse GNR=25.3%</th>
<th>Dawson GNR=35.9%</th>
<th>Watson Lake GNR=39.8%</th>
<th>Other</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total population</td>
<td>33,320</td>
<td>22,810</td>
<td>1,295</td>
<td>800</td>
<td>3,115</td>
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<tr>
<td>% aged 65 and over</td>
<td>8.64</td>
<td>7.54</td>
<td>8.49</td>
<td>11.25</td>
<td>11.08</td>
<td></td>
</tr>
<tr>
<td>Dependency ratio</td>
<td>0.49</td>
<td>0.49</td>
<td>0.31</td>
<td>0.52</td>
<td>0.51</td>
<td></td>
</tr>
<tr>
<td>First Nations identity</td>
<td>7,705</td>
<td>3,770</td>
<td>430</td>
<td>205</td>
<td>1,745</td>
<td></td>
</tr>
<tr>
<td>% of Population</td>
<td>23%</td>
<td>17%</td>
<td>33%</td>
<td>26%</td>
<td>56%</td>
<td></td>
</tr>
<tr>
<td>% aged 65 and over</td>
<td>7.98</td>
<td>5.84</td>
<td>11.63</td>
<td>4.88</td>
<td>12.32</td>
<td></td>
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<tr>
<td>Dependency ratio</td>
<td>0.72</td>
<td>0.79</td>
<td>0.58</td>
<td>0.86</td>
<td>0.61</td>
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<tr>
<td>First Nations (North American Indian) single identity</td>
<td>6,590</td>
<td>3,075</td>
<td>380</td>
<td>180</td>
<td>1,640</td>
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</tr>
<tr>
<td>% aged 65 and over</td>
<td>8.57</td>
<td>6.34</td>
<td>11.84</td>
<td>0.00</td>
<td>12.80</td>
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<tr>
<td>Dependency ratio</td>
<td>0.72</td>
<td>0.78</td>
<td>0.73</td>
<td>0.76</td>
<td>0.61</td>
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<tr>
<td>Métis single identity</td>
<td>845</td>
<td>500</td>
<td>40</td>
<td>25</td>
<td>60</td>
<td></td>
</tr>
<tr>
<td>% aged 65 and over</td>
<td>4.73</td>
<td>3.00</td>
<td>.</td>
<td>.</td>
<td>0.00</td>
<td></td>
</tr>
<tr>
<td>Dependency ratio</td>
<td>0.64</td>
<td>0.60</td>
<td>.</td>
<td>.</td>
<td>0.29</td>
<td></td>
</tr>
<tr>
<td>Non-First Nations identity</td>
<td>25,610</td>
<td>19,045</td>
<td>865</td>
<td>595</td>
<td>1,350</td>
<td></td>
</tr>
<tr>
<td>% aged 65 and over</td>
<td>8.84</td>
<td>7.85</td>
<td>7.51</td>
<td>14.29</td>
<td>10.00</td>
<td></td>
</tr>
<tr>
<td>Dependency ratio</td>
<td>0.43</td>
<td>0.44</td>
<td>0.22</td>
<td>0.45</td>
<td>0.38</td>
<td></td>
</tr>
</tbody>
</table>


Notes: Dependency ratio represents the ratio of the population aged 0-19 and aged 65 and over, over the population aged 20 to 64.

* was used where the ratio or percentage was deemed to be severely impacted by random rounding

* For the 2011 National Household Survey (NHS) estimates, the global non-response rate (GNR) is used as an indicator of data quality. This indicator combines complete non-response (household) and partial non-response (question) into a single rate. The value of the GNR is presented to users. A smaller GNR indicates a lower risk of non-response bias and as a result, lower risk of inaccuracy. The threshold used for estimates’ suppression is a GNR of 50% or more. For more information, please refer to the National Household Survey User Guide, 2011.
13.2 Challenges

Five specific challenges have been identified by FNHP; all relate to issues of access to care in a timely fashion:

**Physical and Structural Challenges** includes concerns and recommendations related to transportation; distances and geography; shortages of providers; high turnover; the role of foreign trained practitioners; the patient’s health condition relative to their ability to access needed services; and costs to the client patient.

**Navigating Services** explores ideas and issues related to how effectively people can find their way around and through the health care system, the need for health navigators/advocates and the understanding necessary to take full advantage of health benefit entitlements and services in a timely manner.

**Community Orientation** identifies areas of concern and recommendations related to personal and family histories in accessing health services; health providers knowledge and respect for community leaders and elders; and the norms and traditions by which communities function.

**Knowledge and Awareness** identifies the knowledge and awareness clients have regarding how the health system works, what services are available and where they are located as well as what providers know and understand about the system and the needs of First Nations.

**Cultural Competency** identifies a wide range of issues that revolve primarily around how people are welcomed, how they are treated and communicated with. Issues addressed include: sobriety and treatment; stigmatization; cultural or racial discrimination; respect of elders and traditional medicine; knowledge of community culture and history; and, the ability to establish and maintain trust-based relationships.

13.3 Traditional Healing

It is neither in scope nor possible to provide a cogent appraisal of traditional healing and integrative medicine. That notwithstanding, comments on perspective, in light of the mandate of this study, may provide opportunities for ongoing consideration:

- Traditional healing is an integral part of cultural sensitivity
- There is much to learn about traditional healing, and there are many teachers, both within and outside Yukon Territory
- Trust and mutual respect are the essential elements in consideration of the interface between traditional healing and western medicine
- Conceptual models that integrate traditional healing and western medicine are not being incorporated, actively, in DHSS program initiatives
- A realistic goal, particularly in light of a significant First Nations population in Yukon Territory, is one of comfort and opportunity where access is seen as equal and non-threatening.

- Strategic implications of the dual roles of traditional healing and western medicine may be founded on the developed role of regional First Nations liaison officers that are knowledgeable and able to assist in the complex navigation required to demonstrate trust and mutual respect.

- Clinical services planning may not be able to critically incorporate traditional healing; however, a strategy and commitment by the planners, funders, and providers of care are a reasonable goal.

13.4 Evolution of Care

Evolution of care for First Nations follows two paths: one is access to required care provided by Western medicine; the other, traditional healing. In both instances, the presence of timely and effective care in the home and the community is of primary importance. The evidence supports that the two can exist together comfortably, demonstrated by the cultural sensitivity and medicines already in place at Whitehorse General Hospital, and by the progressive roles assumed by First Nations Liaison Officers at the three hospitals.\(^{61}\)

Keeping people in their home, whenever desired and feasible, is a key objective of First Nations communities. Support is often, but with variable access, provided through social assistance, health and wellness coordination, home care workers, family support workers, and a liaison officer for family and children services. All of these are important; family support is critical.

There remain many issues that require resolution and need to be vetted through the CYFN and Yukon First Nations, and, especially, the Health and Social Commission. Many of these issues are evident in the needs assessment; however, this is not a static process and must be sensitive to change, whether in need, access, or provider. Review of this report and development of an implementation strategy would be an important advancement in that direction.

\(^{61}\) Proposed, but not enacted, at Dawson City Community Hospital.
13.5 Key Findings Summary

<table>
<thead>
<tr>
<th>n</th>
<th>Summary</th>
</tr>
</thead>
<tbody>
<tr>
<td>13</td>
<td><strong>First Nations Health Services</strong></td>
</tr>
<tr>
<td>13.1</td>
<td>The Whitehorse survey results indicate that about 17% consider themselves as having an First Nations identity. The town of Watson Lake reported 26% and the town of Dawson City, 33%. There is a weakness in how First Nations status is tracked and measured.</td>
</tr>
<tr>
<td>13.2</td>
<td>First Nations communities share health and social services issues with the rest of Yukon Territory; as well, there are particularly acute challenges with alcohol and drug abuse, the need for counseling services, diabetes mellitus, and the need for services to be delivered at home, when requested.</td>
</tr>
<tr>
<td>13.3</td>
<td>Evolution of care for First Nations follows two paths: one is access to required care provided by Western medicine; the other, traditional healing. In both instances, the presence of timely and effective care in the home and the community is of primary importance.</td>
</tr>
<tr>
<td>13.4</td>
<td>There remain many issues that require resolution and need to be vetted through the CYFN, especially the Health and Social Commission. Many of these issues are evident in the needs assessment; however this is not a static process and must be sensitive to change, whether in need, access, or provider.</td>
</tr>
<tr>
<td>13.5</td>
<td>The proposed model for delivery of health and social services will be supportive of the needs of First Nations communities.</td>
</tr>
<tr>
<td>13.6</td>
<td>Although not statistically significant in many instances, First Nations people are consistently reported at less desirable levels than the total population (higher body mass index, higher consumption of tobacco and alcohol, lower consumption of fruits an vegetables, lower levels of physical activity, lower life satisfaction and sense of well being, higher levels of chronic conditions). The one exception is a sense of belonging to local community, where First Nations achieved a higher rate than the total population.</td>
</tr>
</tbody>
</table>
Chronic Disease Management (CDM) has been provided in Yukon Territory by physicians to various degrees, a clinical exercise specialist, a health coach, five FTE nurses in Whitehorse, and a community liaison nurse. CDM nurses go into three of five Whitehorse clinics, with initial physician resistance waning. It was evident during the study that CDM activity is welcomed and highly valued at the Health Centres.

CDM is a cornerstone of clinical service planning for many reasons that include:

- Amenable to a systems approach
- Amenable to team-based, collaborative care
- Amenable to peer-reviewed clinical practice guidelines
- Linked to quality of care and quality of life
- Large and growing patient population
- Amenable to outcome measurement at local and territorial levels; longitudinal databases that can track patient uptake, as well as outcomes
- Development of service matrices by community and by providers
- Ability to engage patients
- Management and conduct by physicians and by nurse practitioners

There have been logistical challenges in Yukon Territory and the CDM, including the absence of a seamless nursing interface and integration with the YHC. As well, patients without a family physician have not been able to access the CDM; this is additionally frustrating due to a strong national experience of CDM being managed very well by Nurse Practitioners. Other challenges include:

- Cost-benefit analyses of CDM are extremely valuable and technically feasible; however, the focus in Yukon Territory has not expanded significantly beyond diabetes mellitus
- Large deficit in rural care despite enthusiasm of providers
- Model of clinic-based CDM has been challenged due an articulated need to pay overhead for the CDM nurses

The most severe challenge is the pending loss of funding for a Yukon Territory CDM program. This is not supported by logic, with the potential quality losses are concerning. The study has concluded that, not only should CDM funding be restored, it should be expanded and be a part of Regional Collaborative Care Centres across the territory.
### Key Findings Summary

<table>
<thead>
<tr>
<th></th>
<th>Summary</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>14</strong></td>
<td><strong>Chronic Disease Management</strong></td>
</tr>
<tr>
<td><strong>14.1</strong></td>
<td>Chronic Disease Management (CDM) has been provided in Yukon Territory by physicians to various degrees, a clinical exercise specialist, a health coach, five FTE nurses in Whitehorse, and a community liaison nurse.</td>
</tr>
<tr>
<td><strong>14.2</strong></td>
<td>CDM is a valuable clinical service and tool with a legacy of cost-effective, quality care; with responsibility across provider groups</td>
</tr>
<tr>
<td><strong>14.3</strong></td>
<td>Current funding for CDM and the program, itself, are in jeopardy. Clinical service planning logically would look for the model to be expanded and to have strong rural and urban foci that include ongoing measurement of clinical outcomes.</td>
</tr>
</tbody>
</table>
Emergency Medical Services

15.1 Overview

Emergency Medical Services (EMS) in Yukon Territory is constituted by Ground Ambulance in Whitehorse, Medevac Services, based in Whitehorse, community volunteer staff, and medical communications staff, as follows:

Communities
6 (FT) Primary Care Paramedics (PCP)

142 volunteer staff (VASS)

- 11 Primary Care Paramedics (PCP)
- 75 Emergency Medical Responders (EMR)
- 50 Standard First Aid Providers (SFA)

Whitehorse Ground Ambulance

22 (FT) Primary Care Paramedics (PCP)

8 (PT) staff

Whitehorse Medevac Services

12 Advanced Life Support Paramedics (CCP)

6 (PT) staff

3 Critical Care Nurses (CCN)

Medical Communications

6 Emergency Response Communication Officers (ERCO)

15.2 Impact

The service estimates for 2014 are provided in Exhibit 15-01, with comparable 2013 data.

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Note that the EMS services in Watson Lake are available through PCP from 09:00 to 17:00, Monday to Friday, and, during evenings and weekends, these services are provided by VASS.
These data reflect “demand” rather than “need,” as is always the case with EMS, with the exception of Medevac data. For patients who enlist EMS (Whitehorse and rural), demand is need, and these data from EMS (Ministry of Community Services) are reliable, including projections (following trend and population curves). For Medevac data, travel programs should be studied, routinely; this is beyond the mandate of this study, but is encouraged on the grounds of efficiency and cost.

15.3 Issues

There is a clear recruiting problem with a deficit of three air crew (ground crew is reasonable) but challenges that reflect compensation scales, limited housing, and constrained budget. This carries the potential for a developing public safety issue in the areas of equipment and training.

As EMS falls under the mandate of the Department of Community Services, the issues are noted, but it would be out of the scope of this study to include recommendations.

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<table>
<thead>
<tr>
<th>Category</th>
<th>2014 estimate</th>
<th>2013 actual</th>
<th>2013 estimate</th>
<th>2012 actual</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Whitehorse</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Transfers</td>
<td>1,484</td>
<td>1,154</td>
<td>950</td>
<td>898</td>
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<tr>
<td>Emergencies</td>
<td>3,149</td>
<td>3,259</td>
<td>3,526</td>
<td>3,372</td>
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<tr>
<td>Medevac Assist</td>
<td>921</td>
<td>865</td>
<td>860</td>
<td>812</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>5,552</td>
<td>5,278</td>
<td>5,336</td>
<td>5,082</td>
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<tr>
<td><strong>Rural</strong></td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>1,334</td>
<td>1,334</td>
<td>1,370</td>
<td>1,266</td>
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<td><strong>Medevac</strong></td>
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<tr>
<td>In-Territory</td>
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<td>474</td>
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<td>398</td>
<td>338</td>
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<tr>
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<td>865</td>
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<tr>
<td><strong>Notes</strong></td>
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</tbody>
</table>

Medevac team is used when responding to a patient with higher medical needs
Transfer data for Medevac includes the number of vehicle and aircraft movements
Repatriation is the returning of a patient from a higher level of care facility to an equal or lower level of care facility
### Emergency Medical Services

| 15 | Emergency Medical Services (EMS) in Yukon Territory is constituted by Ground Ambulance in Whitehorse, Medevac Services, based in Whitehorse, community volunteer staff, and medical communications staff. |
| 15.1 | 2014 service estimates show continuing growth in all dimensions of EMS care and delivery. |
| 15.2 | There is a clear recruiting problem with a deficit of three air crew (ground crew is reasonable) and challenges that reflect compensation scales, limited housing, and constrained budget. |
| 15.4 | As EMS falls under the mandate of the Department of Community Services, the issues are noted, but it would be out of the scope of this study to include recommendations. |
Clinical services planning entails development and assessments of the following:

- An accurate and validated current state assessment
- Analyses of implications of the current state:
  - Deficits
  - Issues
  - Sector-specific challenges
- Estimates of the future state variables and drivers of workload
- System design that will provide an infrastructure for change
- Health human resource modeling to populate the infrastructure
  - Based on $t_n$, where $n$ is a moving target in the planning process\(^{63}\)
- Clinical services matrices as the navigational, planning tool for the territory and for planning regions—acceptance of the tool and the planning cycles is dependent on territorial resources, priorities and policies
- Some of the recommended changes are of a relatively minor nature; others carry a significant fiscal impact\(^{64}\) yet warrant serious consideration on the bases of quality, access, and recruitment
- Commitment to the maintenance of real-time data that refresh the project database
- Commitment to measurement of clinical outcomes and the advancement of best practices, based on evidence.

These can be challenging undertakings for government and providers. Change is easy to resist; however, the evidence at hand provides the imperative for change. Certainly, maintaining the status quo would do little more than extend the cycle of provider-centred care and impede the successful implementation of patient-centred care.

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\(^{63}\) For planning purposes, the further out a planning cycle, the lesser the impact of variables; many planning cycles extend to ten years, but require a point of initiation, in this case, three years; once the three-year plan is set and the underpinning data refreshed, the cycle can extend to year five and year ten, and then beyond

\(^{64}\) The challenge of fiscal impact is to correlate costs with benefits, when costs are easily estimated and benefits are not, because of the direct and indirect measurements
Models shift due to **structures, designs, processes and resources, and organizational culture.** All are achievable in Yukon Territory; following are templates for planning, with the primary focus on regions that integrate with the territory spanning the next five years (in keeping with five-year cycles of a strategic plan for the Department of Health and Social Services) and framed by those structures, designs, processes and resources, and organizational culture. The first three are integral components of services planning; organizational culture is not a plan, but rather, a consequence of leadership, commitment, and education.

Change always brings surprises; however, it is not difficult to identify the interventions where change will have the greatest impact. **Government** will need to prioritize its spending against other pressing demands, but always with attention to needs. For health and social services in Yukon Territory, the needs are high.

**Providers** will need to come to terms with shifts in the care model:

- Government is being asked to redefine its spending priorities, over time, and to contemplate revised structure and governance for health and social services; governance will need to be centralized and service delivery will need to be regionalized, using targeted core services in a hub-and-spoke model

- The hospital corporation is being asked to determine the most appropriate services to be provided at the two community hospitals, and how those services can achieve a seamless interface with collaborative care models

- The nursing profession is being asked to transition to a model of care that is supportive of top-of-license nursing services on a continuing basis

- The medical profession is being asked to transition to pan-territorial collaborative care and to leave the traditional medical centre behind

- All other providers of care are being asked to adjust delivery models so that collaborative and integrated care is central

The remainder of this section of the report examines system structure and design, and processes and resources that, together, facilitate the use of the matrices as the planning tool for the territory.
16.1 Overview

The overview schematic demonstrates the interdependencies of a refreshed and analyzed Environmental Scan, the Shifting of the Model, and the Clinical Services Plan that results from the shift in the model and encourages revisitation of the model; all in an iterative loop.

**Exhibit 16-01**
Overview Schematic

**Current State**

Environmental Scan Requiring Refreshed Data and Analyses

- Structures
- Designs
- Processes and Resources

**Clinical Services Plan**

Aggregate of:
- Structures
- Designs
- Processes and Resources

Navigational Tool

Clinical Service Matrices

Needs-based planning built on evidence

Territorial planning based on sustainability and strategic policies and direction

<table>
<thead>
<tr>
<th>Building Blocks</th>
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<tbody>
<tr>
<td>Resources</td>
</tr>
<tr>
<td>Technology</td>
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<tr>
<td>Guidelines</td>
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<td>Optimization</td>
</tr>
<tr>
<td>Fiscal Plan</td>
</tr>
<tr>
<td>Program Plan</td>
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</table>

Ongoing Measurement of Outcomes
Notes to Reader

Following are key reference points when considering the following summary plans, the clinical services matrices, and the approach suggested in section 1.2 Recommendations, on page 14 of this report, reflecting the structural, design, and process shifts, as described.

- The proposal and suggested planning parameters are based on the analysis of acquired information, collated into an evidentiary database.
- There are many thousands of quantitative and qualitative data units underpinning the work; these will need to be refreshed at regular intervals in order to maintain the relevance of the planning model.
- The clinical matrices are the tool to implement the model and to sustain it in an organized fashion.
- The model is navigational, not prescriptive.
- The initial planning data and recommendations are sound, but flexible; there may be issues of interpretation and local knowledge that require correction of planning parameters; this is not unusual in a study of this size and is encouraged.
- Correction is and important and ongoing element in the use of the study; the ultimate goal is to continuously improve the data and the planning.
- The intention of the recommendations and suggested approaches to planning is to bolster, then stabilize, the delivery of health and social services in rural Yukon, and to restructure and stabilize the delivery of services in Whitehorse.
- Central to the planning is collaborative care with enhanced numbers and roles of providers, especially nursing and social services; this will lead to redefined roles for physicians in the model.
- Measurement of clinical and social outcomes is fundamental to moving forward.
16.2 Structural Shifts

Collaborative care is the anchor for delivering health and social services to the residents of Yukon Territory. The subsequent recommendations relate to five Regional Collaborative Care Centres (RCCC) and five Capital Collaborative Care Centres (CCCC). The immediate priority is advancing on the RCCCs; the future initiatives will focus on CCCCs, which, by their setting, will differ from the RCCCs. Both collaborative centre models will be built on the same principles that have underpinned this study.65

It is noted that the models, so implemented, will likely have a positive impact on the challenges of recruitment and retention of providers, but that the impact may be staggered according to the extant challenges.

Collaborative care centres are constituted by bricks and mortar, professionals, and a common philosophy of patient-centred care and values in a multidisciplinary model, founded on mutual respect and support.

The bricks and mortar are described first, and is followed by HHR modeling. The philosophy has been articulated throughout the study. Efficiencies and communications are immediate benefits. Access to social services will also be primary benefits due to a hub and spoke model based outside of Whitehorse.

The engine for reform is dependent on the maintenance and management of the clinical service matrices. With two to four communities being served from each RCCC (albeit across variable geography), the number and frequency of visits across all sites will increase substantially. In itself, this goes a long way in addressing the expressed concerns and the evidence of need. As well, there will be defined catchment areas that attain a sense of community with an RCCC at the centre. The goal will be centralized electronic health records, with graduated thresholds for access to the personal information.

The structural shifts are based on the development of six (6) Regional Collaborative Care Centres (RCCCs), initially, and five (5) Capital Collaborative Care Centres (CCCCs), subsequently. The RCCCs have been sited with attention to geography and reasonable accessibility. The logistics of developing five CCCCs in Whitehorse require careful definition, to distinguish centralized services also available in the city. It would be inefficient and inappropriate to disrupt those centralized services (such as, mental health, ADS, hearing, counseling agencies, CDC). Over time, there may be obvious additions to the CCCC provider list. The planning for CCCCs can be along the line of the RCCCs and centred on existing clinic sites, but excluding professionals that are regionally based, as these and the visitation services are already functioning in Whitehorse. As such, the CCCCs will be less resource intensive than the RCCC, but built on the same principles.

65 See section 2.6 Principles on page 28
16.3 Design Shifts

The design shifts start with a master design for collaborative centres, and are then customized for each centre on an individual basis to address need. Like the RCCC structures, the service designs are sensitive to geography and incorporate the potential of telehealth. The master design lists possible providers of health and social services, from which the recommended list will be customized to each RCCC. The providers can be based at the RCCC or in a community, can be virtual providers through expanded telehealth services, or can be visiting providers for designated services.
### Exhibit 16-03
Master Design for Collaborative Care Centres and RCCC Variants

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<thead>
<tr>
<th>Position</th>
<th>Applicable Notes</th>
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<tbody>
<tr>
<td>Administrative Staff</td>
<td>Required routinely</td>
</tr>
<tr>
<td>Alcohol and Drug Services</td>
<td>Has been weak outside of WH; new territorial program</td>
</tr>
<tr>
<td>Child Abuse Treatment Services</td>
<td>Increased services requested in rural YT</td>
</tr>
<tr>
<td>Child Development Centre</td>
<td>Increased services requested in rural YT</td>
</tr>
<tr>
<td>Fetal Alcohol Spectrum Disorder</td>
<td>Increased services requested in rural YT</td>
</tr>
<tr>
<td>Health Promotion Officer</td>
<td>New position - one in each RCCC</td>
</tr>
<tr>
<td>Healthy Families</td>
<td>Established in Whitehorse and moving into communities</td>
</tr>
<tr>
<td>Hearing Services</td>
<td>WH backlog for attention plus continue rural program</td>
</tr>
<tr>
<td>Home Care Nurse</td>
<td>Generally lacking in rural YT</td>
</tr>
<tr>
<td>Licensed Practical Nurse</td>
<td>DCCH and WLCH roles now; add 2.0 for ADS at RCCC</td>
</tr>
<tr>
<td>Manager</td>
<td>Required routinely</td>
</tr>
<tr>
<td>Mental Health Services</td>
<td>Has been under-resourced outside WH</td>
</tr>
<tr>
<td>Nurse Practitioner</td>
<td>New position central to each RCCC - will amend physician roles</td>
</tr>
<tr>
<td>Occupational Therapist</td>
<td>Has been weak outside of WH</td>
</tr>
<tr>
<td>Palliative Care Services</td>
<td>Has been weak outside of WH; new territorial program</td>
</tr>
<tr>
<td>Physician</td>
<td>Status quo FTEs with need for further assessment</td>
</tr>
<tr>
<td>Physiotherapist</td>
<td>Has been weak outside of WH</td>
</tr>
<tr>
<td>Primary Health Care Nurse</td>
<td>Required routinely</td>
</tr>
<tr>
<td>Public Health Nurse</td>
<td>New RCCC roles</td>
</tr>
<tr>
<td>Registered Nurse</td>
<td>Community hospitals</td>
</tr>
<tr>
<td>Social Worker</td>
<td>Has been under-resourced outside WH</td>
</tr>
<tr>
<td>First Nations Healing Centre</td>
<td><strong>Plus a First Nations Liaison Officer</strong></td>
</tr>
<tr>
<td>Whitehorse Continuing Care</td>
<td>356 of 360 FTEs in WH (see specific allocations)</td>
</tr>
<tr>
<td>Whitehorse Family Physicians</td>
<td>Status quo FTEs with need for further assessment</td>
</tr>
<tr>
<td>Whitehorse Health Services</td>
<td>137 of 182 FTEs in WH (see specific allocations)</td>
</tr>
<tr>
<td>Whitehorse Social Services</td>
<td>326 of 365 FTEs in WH (see specific allocations)</td>
</tr>
<tr>
<td>Whitehorse Specialists</td>
<td>Recommendations for increased recruitment targets</td>
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## Carmacks RCCC (Carmacks and Pelly Crossing)

### Indicates telehealth element possible

<table>
<thead>
<tr>
<th>Service</th>
<th>Year 0 FTE</th>
<th>Year 1 FTE</th>
<th>Year 3 FTE</th>
<th>Year 5 FTE</th>
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<tr>
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<td>3 pa RCCC</td>
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### Population 500 - 50% First Nations

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<th>Year 1 FTE</th>
<th>Year 3 FTE</th>
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<tr>
<td>Child Development Centre</td>
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<td>0.2 RCCC</td>
</tr>
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<td>variable</td>
<td>variable</td>
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<td>1.0 RCCC</td>
<td>1.0 RCCC</td>
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<tr>
<td>Healthy Families</td>
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<td></td>
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</table>
**Carmacks RCCC (Carmacks and Pelly Crossing)**

<table>
<thead>
<tr>
<th>Indicates telehealth element possible</th>
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<th>Year 3 FTE</th>
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<tr>
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**First Nations Healing Centre**

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- **Whitehorse Social Services**: n/a
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## Haines Junction RCCC (Haines Junction and Beaver Creek and Destruction Bay)

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Population 850 - 50% First Nations

First Nations Healing Centre Plus a First Nations Liaison Officer

Whitehorse Continuing Care n/a
Whitehorse Health Services n/a
Whitehorse Social Services n/a
### Haines Junction RCCC (Haines Junction and Beaver Creek and Destruction Bay)

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**First Nations Healing Centre**

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# Clinical Services Planning

## Ross River RCCC (Ross River and Faro)

Indicates telehealth element possible

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| Administrative Staff | variable   | 1.0        | 1.0        | 1.0        |
| Alcohol and Drug Services | 0.1        | 0.5        | 0.5        | 0.5        |
| Child Abuse Treatment Services | 0.1        | 0.1        | 0.1        | 0.1        |
| Child Development Centre | 6 pa       | 6 pa       | 6 pa       | 6 pa       |
| Fetal Alcohol Spectrum Disorder | variable   | variable   | variable   | variable   |
| Health Promotion Officer | - -        | 1.0 RCCC   | 1.0 RCCC   | 1.0 RCCC   |
| Healthy Families | variable with addition of two communities beyond Whitehorse - 2014-2015 |
| Hearing Services | variable   | 3 pa RCCC   | 3 pa RCCC   | 3 pa RCCC   |
| Home Care Support | 0.72       | 2.0 RCCC   | 2.0 RCCC   | 2.0 RCCC   |
| Licensed Practical Nurse | - -        | 2.0 ADS    | 2.0 ADS    | 2.0 ADS    |
| Manager | - -        | - -        | - -        | - -        |
| Mental Health Services | 0.5        | 1.0 RCCC   | 1.0 RCCC   | 1.0 RCCC   |
| Nurse Practitioner | - -        | 1.0 RCCC   | 1.0 RCCC   | 1.0 RCCC   |
| Occupational Therapist | variable   | 0.2 RCCC   | 0.2 RCCC   | 0.2 RCCC   |
| Palliative Care Services | variable   | variable   | variable   | variable   |
| Physician | 0.2 WH    | Variable with impact analysis |
| Physiotherapist | variable   | 0.2 RCCC   | 0.2 RCCC   | 0.2 RCCC   |
| Primary Health Care Nurse | 2.0        | 2.0        | 2.0        | 2.0        |
| Public Health Nurse | - -        | 1.0 RCCC   | 1.0 RCCC   | 1.0 RCCC   |
| Registered Nurse | - -        | - -        | - -        | - -        |
| Social Worker | 2.0        | 2.0 RCCC   | 2.0 RCCC   | 2.0 RCCC   |
| First Nations Healing Centre | Plus a First Nations Liaison Officer |
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| Whitehorse Health Services | n/a |
| Whitehorse Social Services | n/a |
## Ross River RCCC (Ross River and Faro)

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**Notes:**
- Population 375 and 600 in summer - 16% First Nations
- Indicates telehealth element possible
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<td>Impact analysis</td>
<td></td>
</tr>
<tr>
<td><strong>Physiotherapist</strong></td>
<td>0.4</td>
<td>0.4</td>
<td>0.4</td>
<td>0.4</td>
</tr>
<tr>
<td><strong>Primary Health Care Nurse</strong></td>
<td>3.0</td>
<td>3.0</td>
<td>3.0</td>
<td>3.0</td>
</tr>
<tr>
<td><strong>Public Health Nurse</strong></td>
<td>- -</td>
<td>1.0 RCCC</td>
<td>1.0 RCCC</td>
<td>1.0 RCCC</td>
</tr>
<tr>
<td><strong>Registered Nurse</strong></td>
<td>6.9 WLCH</td>
<td>6.9 WLCH</td>
<td>6.9 WLCH</td>
<td>6.9 WLCH</td>
</tr>
<tr>
<td><strong>Social Worker</strong></td>
<td>3.0</td>
<td>3.0</td>
<td>3.0</td>
<td>3.0</td>
</tr>
<tr>
<td><strong>First Nations Healing Centre</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Whitehorse Continuing Care</strong></td>
<td>n/a</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Whitehorse Health Services</strong></td>
<td>n/a</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Whitehorse Social Services</strong></td>
<td>n/a</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Indicates telehealth element possible

Watson Lake RCCC

Population 1,474 – 25% First Nations

First Nations Healing Centre

Plus a First Nations Liaison Officer

Whitehorse Continuing Care: n/a
Whitehorse Health Services: n/a
Whitehorse Social Services: n/a
## Capital Collaborative Care Centres (CCCC)

### Five Centres

<table>
<thead>
<tr>
<th>Year 0 FTE</th>
<th>Year 1 FTE</th>
<th>Year 3 FTE</th>
<th>Year 5 FTE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Whitehorse</td>
<td>Population 27,889 - 7% First Nations</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Development Schedule

<table>
<thead>
<tr>
<th>Service</th>
<th>Year 0 FTE</th>
<th>Year 1 FTE</th>
<th>Year 3 FTE</th>
<th>Year 5 FTE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Administrative Staff</td>
<td>variable</td>
<td>2.0</td>
<td>6.0</td>
<td>10.0</td>
</tr>
<tr>
<td>Alcohol and Drug Services</td>
<td>63.0</td>
<td>Territorial planning</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Child Abuse Treatment Services</td>
<td>7.9</td>
<td>8.9</td>
<td>Territorial planning</td>
<td></td>
</tr>
<tr>
<td>Child Development Centre</td>
<td>17.2</td>
<td>Territorial planning</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Continuing Care - Care and Community</td>
<td>72.0</td>
<td>Territorial planning</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Continuing Care - Extended Care</td>
<td>266.0</td>
<td>Territorial planning</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fetal Alcohol Spectrum Disorder</td>
<td>5.0</td>
<td>Territorial planning</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Health Promotion Officer</td>
<td>- -</td>
<td>1.0</td>
<td>3.0</td>
<td>5.0</td>
</tr>
<tr>
<td>Health Services</td>
<td>137.0</td>
<td>Territorial planning</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Healthy Families</td>
<td></td>
<td>Territorial planning and expansion from Whitehorse</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hearing Services</td>
<td>4.5</td>
<td>6.5</td>
<td>6.5</td>
<td>6.5</td>
</tr>
<tr>
<td>Home Care Support</td>
<td>72.0</td>
<td>75.0</td>
<td>75.0</td>
<td>75.0</td>
</tr>
<tr>
<td>Licensed Practical Nurse</td>
<td></td>
<td>Whitehorse General Hospital and ADS planning</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Manager</td>
<td>- -</td>
<td>1.0</td>
<td>3.0</td>
<td>5.0</td>
</tr>
<tr>
<td>Many Rivers Counseling</td>
<td>12.0</td>
<td>Territorial planning</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mental Health Services</td>
<td>23.0</td>
<td>Territorial planning</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Nurse Practitioner</td>
<td>1.0</td>
<td>4.0</td>
<td>10.0</td>
<td>15.0</td>
</tr>
<tr>
<td>Occupational Therapist - CC Facilities</td>
<td>2.0</td>
<td>Territorial planning</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Occupational Therapist - Home</td>
<td>2.4</td>
<td>Territorial planning</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Palliative Care Services</td>
<td></td>
<td>Territorial planning</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Physician</td>
<td></td>
<td>Recommendation for further analysis</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Physiotherapist - CC Facilities</td>
<td>3.0</td>
<td>Territorial planning</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Physiotherapist - Home</td>
<td>1.9</td>
<td>Territorial planning</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Primary Health Care Nurse</td>
<td>variable</td>
<td>2.0</td>
<td>6.0</td>
<td>10.0</td>
</tr>
<tr>
<td>Public Health Nurse - Communicable</td>
<td>8.4</td>
<td>Territorial planning</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Public Health Nurse - WH Health Centre</td>
<td>10.4</td>
<td>Territorial planning</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
# Clinical Services Planning

## Capital Collaborative Care Centres (CCCC)

<table>
<thead>
<tr>
<th>Five Centres</th>
<th>Year 0 FTE</th>
<th>Year 1 FTE</th>
<th>Year 3 FTE</th>
<th>Year 5 FTE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Registered Nurse</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Whitehorse General Hospital planning</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Social Worker</td>
<td>302.0</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Territorial planning</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Therapist - additional (OT, PT, Recreational)</td>
<td>1.5</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>First Nations Healing Centre</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Plus a First Nations Liaison Officer</td>
<td></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>Whitehorse Continuing Care</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Individuals (387 HC) (360 FTEs) are involved in Continuing Care, mostly in Whitehorse (382 individuals, 356 FTEs), with very few services provided in rural Yukon Territory</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>The majority of staff (276 individuals, 266 FTEs) are involved in Extended Care Services; 88 (72 FTEs) are in the Care and Community Branch</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Individuals (183 HC) (178 FTEs) are situated at Copper Ridge Place; 54 individuals (50 FTEs) are at Macauley Lodge and another 39 (38 FTEs) are at the Thomson Centre</td>
<td></td>
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</tr>
<tr>
<td>Individuals (88 HC) (72 FTEs) are assigned to Home Care Services</td>
<td></td>
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<td></td>
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</tr>
<tr>
<td>Whitehorse Family Physicians</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Status quo FTEs with need for further assessment</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Whitehorse Health Services</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Across the territory, 195 practitioners (182 FTEs) were identified as involved in the provisions of health services; 65 are full time. There are 94 on-call FTEs, and 36 practitioners are part-time (23 FTEs)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Most of the resources (148 individuals, 137 FTEs) reside in Whitehorse</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>124 individuals (116 FTEs) are involved in Community Nursing; 67 (62 FTEs) are involved in Community Health</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>54 individuals (52 FTEs) are assigned to General Programs; 29 (26 FTEs) work from the Whitehorse Health Centre</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>24 individuals (23 FTEs) work in mental health positions</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>14 individuals (12 FTEs) are involved in Communicable Disease Control</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
### 16.4 Process Shifts

After the FTE allocations are settled at the collaborative centres, the additional supporting processes and resources are added to the model, also sensitive to geography and the potential of telehealth. Following are the process shifts for the collaborative care centres in Yukon Territory, complementing the structural and design shifts.

<table>
<thead>
<tr>
<th>Process Shifts</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Decentralization</strong></td>
<td>There needs to be a shift to services being more regional than Whitehorse-based, with a focus on the home and home community.</td>
</tr>
<tr>
<td><strong>Electronic records</strong></td>
<td>Territorial electronic records are a priority, with respect for layered confidentiality that doesn’t impeded the sharing of information.</td>
</tr>
<tr>
<td><strong>Chronic disease management</strong></td>
<td>CDM is fundamental to all dimensions of health services; support for the territorial program is fundamental and requires concurrent outcomes measurement aligned with analyses of local and territorial uptake data</td>
</tr>
<tr>
<td><strong>Clinical practice guidelines</strong></td>
<td>The use of CPGs that are evidence-based is a territorial responsibility that needs to be assumed by all providers of care</td>
</tr>
<tr>
<td><strong>Outcomes measurement</strong></td>
<td>All initiatives undertaken by DHSS should be focused on patients and the outcomes of these initiatives need to be measured and incorporated to subsequent service planning</td>
</tr>
<tr>
<td><strong>Core services</strong></td>
<td>Core services are necessary as a basic platform for planning</td>
</tr>
</tbody>
</table>

### Capital Collaborative Care Centres (CCCC)

<table>
<thead>
<tr>
<th>Five Centres</th>
<th>Year 0 FTE</th>
<th>Year 1 FTE</th>
<th>Year 3 FTE</th>
<th>Year 5 FTE</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Whitehorse Social Services</strong></td>
<td>Individuals (373 HC) (365 FTEs) provide Social Services; 332 (326 FTEs) are located in Whitehorse. Individuals (229 HC) (224 FTEs) work in the Family and Children's Branch; 119 (116 FTEs) work in Adult Services.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Whitehorse Specialists</strong></td>
<td>Increased recruitment targets</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
16.5 Enablers

Enablers to clinical services planning relate to the design and improvement of the delivery of health and social services, functioning as threads that bind the services to strategic aims. These are the services and functions that need to be developed further to support the proposed clinical services plan; the journey to successful planning and implementation is not possible without them.

The common enablers are:

- Regional restructuring with a focus on patients/clients and home-based care
- Access to primary care
- Access to specialty care
- Access to mental health services and alcohol and drug services
- System design and integration
- Technology adaptation and management
  - Telehealth
  - Electronic records
- Social determinants of health, especially housing and transportation
- Support for quality initiatives
  - Chronic disease management
  - Clinical practice guidelines

<table>
<thead>
<tr>
<th>Process Shifts</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Patient-centred care</td>
<td>Patient-centred care needs to be an applied model of care and not an idiom; if an activity does not have the patient at the centre, then it should not be undertaken</td>
</tr>
<tr>
<td>Role optimization</td>
<td>The success of integrated and collaborative care pivots on all providers functioning at the top of their license; non-hierarchical models of care are the centre of care for all populations; provider-centred care must be abandoned</td>
</tr>
</tbody>
</table>
Exhibit 16-04
Moving from Fragmentation to Integration

Fragmented Patients and Providers

Integrated Patients and Providers

Clinical Services Plan

Enablers

Out-of-Territory
Territorial Hospital
Community Care
Home

Home
Community Care
Territorial Hospital
Out-of-Territory
Appendices

A.1 Acronyms and Initialisms
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A.8 Literature Catalogue
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A.9 Companion Documents
Page 314
A.1 Acronyms and Initialisms

Following is a list of acronyms and initialisms used in the report, accompanied by the source phrases.

- AAFP American Academy of Family Practice
- ACSC Ambulatory Care Sensitive Condition
- ADM Assistant Deputy Minister
- ADS Alcohol and Drug Services
- AHSC Academic Health Sciences Centre
- ANP Advanced Nursing Practice
- APP Alternative Payment Plan
- ASIR Age-standardized Incidence Rate
- CAPERS Canadian Post-M.D. Education Registry Service
- CaRMS Canadian Resident Matching Service
- CCRS Chronic care Reporting System
- CDC Child Development Centre
- CDM Chronic Disease Management
- CHC Community Health Centre
- CHN Community Health Nurse
- CHNA Community Health Needs Assessment
- CIHI Canadian Institute for Health Information
- CFPC College of Family Physicians Canada
- CMA Canadian Medical Association
- CNA Canadian Nurses Association
- CNPI Canadian Nurse Practitioner Initiative
- COGME The US Council on Graduate Medical Education
- CSA Canadians Studying Abroad
- CSD Census Subdivisions
- CSP Clinical Service Planning
- CYFN Council of Yukon First Nations
- DAD Discharge Abstract Data
- DCCH Dawson City Community Hospital
- DHSS Department of Health and Social Services
- DM Deputy Minister
### Acronyms and Initialisms

- **EHR**  Electronic Health Record
- **EMR**  Electronic Medical Record
- **EMS**  Emergency Medical Services
- **ESRD**  End-Stage Renal Disease
- **FASD**  Fetal Alcohol Spectrum Disorder
- **FASSY**  Fetal Alcohol Syndrome Society of Yukon
- **FFS**  Fee-for-service
- **FHC**  Family Health Centre
- **FNHP**  First Nations Health Programs
- **FHT**  Family Health Team
- **FSA**  Forward Sortation Areas
- **FTE**  Full-time Equivalent
- **GIM**  General Internal Medicine
- **GDP**  Gross Domestic Product
- **GYT**  Government of Yukon Territory
- **HHR**  Health Human Resources
- **HTA**  Health Technology Assessment
- **IMG**  International Medical Graduate
- **IMS**  International Medical Student
- **IOM**  Institute of Medicine
- **LOS**  Length of Stay
- **LPN**  Licensed Practical Nurse
- **MHS**  Mental Health Services
- **NACRS**  National Ambulatory Care Reporting System
- **NECHC**  North End Community Health Centre
- **NP**  Nurse Practitioner
- **NPA**  Nurse Practitioner Anesthetist
- **P4P**  Pay-for-Performance
- **PAC**  Project Advisory Committee
- **PD**  Professional Development
- **PGME**  Postgraduate Medical Education
- **PHCN**  Primary Health Care Nurse
- **PHCNIC**  Primary Health Care Nurse-in-Charge
• PHN Public Health Nurse
• PM Project Manager
• PRP Physician Resource Planning
• PSC Project Steering Committee
• PWP Physician Workforce Planning
• RCCC Regional Collaborative Care Centre
• RCPSC Royal College of Physicians and Surgeons of Canada
• RN Registered Nurse
• SES Socio-economic Status
• SC Steering Committee
• TKR Total Knee Replacement
• TWG Technical Working Group
• UGME Undergraduate Medical Education
• WGH Whitehorse General Hospital
• WLCH Watson Lake Community Hospital
• WNHHRPF Western and Northern Health Human Resource Policy Forum
• YBS Yukon Bureau of Statistics
• YHC Yukon Hospital Corporation
• YMA Yukon Medical Association
• YRNA Yukon Registered Nurses Association
A.2 Definitions

Following are definitions of key concepts referenced throughout the study.

**Alternative Payment Plan (APP)**
Alternative payment plans are, collectively, a type of compensation for physicians who are not paid on a fee-for-service basis, but are salaried, sessional, or hired on a service contract; these physicians submit claims (shadow billings) for administrative purposes only.

**Clinical Services Forecasting**
Clinical services forecasting is a forward-looking projection based upon assumptions regarding key determinants of population need and workforce supply.

**Clinical Services Planning**
Clinical services planning is the process of shaping the future forecast according to organizational strategy, policy, and objectives.

**Collaborative Care**
Collaborative care teams can be described as providers that bring separate and shared knowledge together to support a comprehensive range of high quality, effective health care service.

**Effective Productivity**
The Western and Northern Health Human Resource Planning Forum defined “effective productivity” as an increase in outputs per unit of input where there is evidence of improved quality of care and improved health outcomes that contribute to achieving health system goals.

**Full-Time Equivalency**
The Health Canada/Canadian Institute for Health Information FTE methodology is the national standard in the public health sector for converting physician earnings to FTE (notable is the lack of integrity of the model, directly proportional to the uptake of non-fee-for-service compensation; the details of this approach are as follows:

i. All payments (fee-for-service (fee-for-service), block funded, salary, third party, on-call, sessional, etc. totaling $634 million in 2009/10) to each uniquely identified (Provincial ID number) physician within each functional specialty (e.g., General Practice, Nephrologist, etc.), during a one year period (2009/10), were rank ordered, smallest to largest. Physicians are sorted into percentiles. The 40th and 60th percentiles are computed as follows:

\[(\text{# of physicians within the group}) \times (0.4) = 40\text{th percentile physician}\]

\[(\text{# of physicians within the group}) \times (0.6) = 60\text{th percentile physician}\]

ii. FTE assignment is made using the following procedure:
Any ranked physician > 40th percentile, and < 60th percentile is assigned a value of 1.0 FTE

Any ranked physician (i.e., “physician X") < 40th percentile is assigned an FTE equal to:

($ value of payment to physician X) divided by ($ value of payment to 40th percentile physician)

Any ranked physician (i.e., physician Y)> 60th percentile is assigned an FTE equal to:

1 + (log of $ value of payment to physician Y) / ($ value of 60th percentile)

iii. The methodology creates some compression in the range above the 60th percentile, but avoids assignment of extreme values (e.g., 4.0 FTE) to very high earning physicians

**Independent and Dependent Variables**

These terms distinguish between two types of quantities being considered, separating them into those available at the start of a process and those being created by it, where the latter (dependent variables) are dependent on the former (independent variables); the independent variable is typically the variable representing the value being manipulated or changed and the dependent variable is the observed result of the independent variable being manipulated; for example, with respect to clinical services planning, the independent variable of inter-jurisdictional migration can influence the dependent variable of future supply

**Licensed and Functional Specialty**

Licensed and functional specialties of physicians are conceptually and analytically very important; the functional specialty, in almost all cases, is the same as the licensed specialty; for Canadian trained physicians, the licensed specialty is determined by certification by the Royal College of Physicians and Surgeons or the College of Family Physicians of Canada; in a few cases, such as a General or Family Practitioner working solely in the Emergency Department, the functional specialty may differ from the licensed specialty

**Net (Export)/Import**

Health human resource planning at the community and regional (de facto) requires examination of patterns of service utilization by local residents and those who commute to a community to receive care; this is also true of providers who commute outside a primary location to other communities to deliver care; this pattern of commuting to access or to provide care is termed, (export)/import of services; net export means the residents of a given community or region access more services outside their community or region than they do within it; net import means the opposite, providing more services within the community or region than are accessed outside it
**Definitions**

**Nurse Practitioner**
A registered nurse with additional educational preparation and experience who possesses and demonstrates the competencies to autonomously diagnose, order and interpret diagnostic tests, prescribe pharmaceuticals, and perform specific procedures within their legislated scope of practice.

**Patient-Centred Care**
Patient-centred means a health delivery system organized around the holistic needs of patient and family. The four attributes of patient-centred care, described by the Institute of Medicine in 2001 are, as follows:

- Comprehensiveness of care
- Coordination and communication
- Support for the patient and his or her empowerment
- Timely access

**Quality**
The Institute of Medicine (IOM) definition of the core attributes of quality care has withstood the test of time:

- Safe: avoiding injuries to patients from the care that is intended to help them
- Effective: providing services based on scientific knowledge to all who could benefit, and refraining from providing services to those not likely to benefit
- Patient-centered: providing care that is respectful of and responsive to individual patient preferences, needs, and values, and ensuring that patient values guide all clinical decisions
- Timely: reducing waits and, sometimes, harmful delays for both those who receive and those who give care
- Efficient: avoiding waste, including waste of equipment, supplies, ideas, and energy
- Equitable: providing care that does not vary in quality because of personal characteristics such as gender, ethnicity, geographic location, and socioeconomic status

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67 Institute of Medicine, Shaping The Future For Health Crossing The Quality Chasm: A New Health System For The 21st Century, March 2001
**Role Optimization**
Also referred to as working “top-of-license,” role optimization encourages each professional to provide services to the maximum skill level attainable, as part of an integrated team, and, always, in a patient-centred model. In essence, the goal is to maximize individual scopes of service to provide quality and accessible care to those in need and in a timely fashion.

**Sentinel Services**
Sentinel services represent a significant proportion of the workload for a particular discipline or profession; these are determined by true patient need and not likely influenced heavily by individual discretion; for example hip or knee replacements in orthopaedics, deliveries in obstetrics, cholecystectomies and mastectomies in general surgery, and cataract surgery in ophthalmology (Ontario: Expert Panel on Health Professional Human Resources, 2001)
### A.3 Exhibits

Following is a list of study exhibits, arranged in a sequential order.

<table>
<thead>
<tr>
<th>Exhibit Number</th>
<th>Exhibit Title</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>2</strong></td>
<td><strong>Introduction</strong></td>
</tr>
<tr>
<td>02-01</td>
<td>Determinants of Need</td>
</tr>
<tr>
<td>02-02</td>
<td>Determinants of Supply</td>
</tr>
<tr>
<td>02-03</td>
<td>Schematic of the Approach</td>
</tr>
<tr>
<td><strong>3</strong></td>
<td><strong>National Perspectives</strong></td>
</tr>
<tr>
<td>03-01</td>
<td>Health Quality Matrix - Health Quality Council of Alberta</td>
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A.4 Reference Files Catalogue

Following is an alphabetical list of the reference files reviewed over the course of the study; their interpretation and analysis is attributable only to the consultants.

- 9,000 Points of Care
- 10-Year Plan - Disability Services Final Report
- 2004-06-21 Canadian Association for Rural and Remote Nursing General Meeting
- 2007-06-17 Canadian Association of Rural and Remote Nurses Meeting
- 2008 - Providing Primary Healthcare in Northern Remote Communities
- 2008 RIO_Technical Paper
- 2010-09-19 Orientation of Rural and Remote Nurses in Canada
- 2010-10 Canadian Association for Rural and Remote Nursing Newsletter
- 2012-10 Rural Maternity Care
- 2012-10-23 Rural Mental Health Workforce Needs Assessment
- 2013-01 Clinical Services Plan - AS Info Final
- 2013-11-18 WHO Retention of Rural and Remote Health Workers
- 2013-12-16 Current List of Whitehorse Physicians and Specialists
- 2013-12-17 Note from Lynn Harris, Ross River Nurse, on Materials for CSP
- 2013-14 FASSY Overview
- 2014-01-17 Information Provided by Yukon Pharmacists Association
- 2014-01-20 Many Rivers Counseling and Support Services Data
- 2014-02-18 Child Development Centre Programming
- Alcohol and Drug Services Draft Model
- Assessing Rurality
- Beaton and Allan, Acutely Intoxicating Persons at Risk, Final Report
- Blood Ties Four Directions Centre Comparative Yearly Statistics
- Canadian Journal of Nursing Leadership 2010
- Child Development Centre First Nations Services with Kwanlin Dun
• Child Development Centre Child Services Caseload
• Child Development Centre FTEs and Information
• Child Development Centre Stats on Outreach, Community-based and Preschool
• Communicable Diseases
• Community Day Program - Trans-disciplinary Manual
• Community Health Programs - Clinical Services Plan - for D. Peachey
• Community Health Diagnoses
• Community Home Care Summary, January 2014 - for D. Peachey
• Community Nursing Branch Submission
• Community Nursing FTEs Data
• Continuing Care Division Plan 2013-14
• Continuing Care A2-12 Meals on Wheels Program, Macaulay Lodge, Whitehorse
• Continuing Care A2-12 Meals on Wheels Program, McDonald Lodge, Dawson City
• Continuing Care A4-02 Intermediate Care
• Continuing Care A4-03 Extended Care
• Continuing Care A4-05 CDP Program Description
• Continuing Care and Community Branch FTEs and Location
• Continuing Care CCRS Quickstats 12-13 En
• Continuing Care HCRS Quickstats 12-13 En
• Continuing Care Home Care Clients, Fiscal Year Activity Report, by Month End
• Continuing Care Home Care Services, March 1-31, 2013
• Continuing Care Licensed Practical Nurses in Yukon
• Continuing Care Palliative Care Data, November 2013
• Continuing Care Summary
• Continuing Care Therapeutic Services,
• Continuing Care Therapeutic Services, Narrative
• Continuing Care Wait List Analysis, 2012, No Identifiers
• Continuing Care  A4-01 Personal Care (McDI)
• Continuing Care  A4-04 Dementia Care
• Corporate Policy Summary, Future and Current Legislative Initiatives
• Cost Benefit Analysis, Chronic Conditions Support Program
• Council of Yukon First Nations, Improving Access Report, March 10 Print
• Council of Yukon First Nations, June Report, Part 1 (Final)
• Council of Yukon First Nations, June Report, Part 2 (Final)
• Council of Yukon First Nations, Mental Health Workbook, V.1, June 2010
• Council of Yukon First Nations, Yukon RHS2 Final, December 10, 2013
• CSP Data - Needs & Epidemiology
• Dementia Care - Trans-disciplinary Manual
• Department Goals, Objectives, Strategies
• Department Logic Model
• Department Organizational Chart
• DHSS Social Services Division Summary
• Draft DHSS Logic Model
• Draft DHSS Department Strategic Context 2014
• Extended Care - Trans-disciplinary Manual
• FCS CATS Mitigation Report, June 25, 2013
• FCS CATS Risk Report, June 25, 2013
• FCS CATS Mitigation Report, April 19, 2013
• FCS CATS Risk Report, April 19, 2013
• Fetal Alcohol Syndrome Society, Yukon Information
• First Nations Regional Longitudinal Health Survey Data 1
• First Nations Regional Longitudinal Health Survey Data 2
• First Nations Regional Longitudinal Health Survey Data 3
• Framework for Introduction and Evaluation of Advanced Practice Nursing Roles
- Funding FASSY: a new model
- Health Affairs February 2014
- Health and Social Services, Draft Logic Model
- Health Council of Canada: North End Community Health Centre, Halifax
- Health in Rural Canada (Forthcoming from UBC Press)
- Health Services - Insured Health and Hearing Services
- Health Services - Insured Health Services, Pharmaceutical Services
- Hearing Services
- Hearing Services Data
- Hirdes et al, Iron Lungs of Gerontology Paper
- Home Care Summary Statistics
- HRMS Records
- Human Resources FTEs
- Improving Access to Health Services for Yukon First Nations
- Insured Health Services
- Insured Health Services Pharmaceutical and Extended Benefits Programs
- Intermediate Care - McDonald Lodge; Thomson Centre
- Jan 2014 Health Professionals Data YHC, Jan 27 Submission
- Kara Simons (YHC) Jan 2014 Health Professionals Data YHC, Jan 27 Submission
- Long-Term Care Therapeutic Services FTEs
- Many Rivers Summary Statistics
- Meals on Wheels - Macaulay Lodge
- Meals on Wheels - McDonald Lodge
- Measuring Rurality for the Purposes of Healthcare Planning
- Mitigation Report, Insured Health And Hearing Services, September 10, 2013
- Mitigation Report, Care and Community, August 1, 2013
• Mitigation Report, Chronic Disease Management, May 22, 2013
• Mitigation Report, Communications & Social Marketing, September 24, 2013
• Mitigation Report, Community Health, May 30, 2013
• Mitigation Report, Community Nursing, April 30, 2013
• Mitigation Report, Extended Care, August 1, 2013
• Mitigation Report, Finance & Administration, July 23, 2013
• Mitigation Report, Policy & Program Development, September 3, 2013
• Mitigation Report, Regional Services, May 24, 2013
• Mitigation Report, Safety & Clinical Excellence, August 1, 2013
• Northern Health Services Network Data, Yukon 2013-14
• Notes on Data Availability (SK Jan 2014)
• Nursing Leadership
• Palliative Care Framework, 2014
• Pathway to Superb Primary Care
• Personal Care - McDonald Lodge
• Pharmacy - Shoppers Drug Mart, Sustainable Solutions Report, Managing Chronic Conditions
• Preliminary Mitigation Report, HSS HR, June 11, 2013
• Projections 25 Years, Tableaux Input, Communities Evolve Separately, December 27, 2013
• Regulation of Health Professions, PPT V2
• Risk Report, Insured Health and Hearing Services, September 19, 2013
• Risk Report, Care and Community, August 1, 2013
• Risk Report, Chronic Disease Management, May 22, 2013
• Risk Report, Communications & Social Marketing, September 24, 2013
• Risk Report, Community Health, May 30, 2013
• Risk Report, Community Nursing, April 30, 2013
• Risk Report, Extended Care, August 1, 2013
- Risk Report, Finance & Administration, July 23, 2013
- Risk Report, Regional Services, May 24, 2013
- Risk Report, Safety & Clinical Excellence, August 1, 2013
- Role of Nurse Practitioners in Reinventing Primary Care
- Ross River Notes, Joint Position Paper on Rural and Maternity Care
- Social Services, Adult Services Information
- Social Services, Adult Services, V.2 Revised
- Social Services, Adult Services, V.3 Revised Final
- Social Services, Community and Program Support Branch, Clinical Services Plan (Final)
- Social Services, Family and Children's Services, Information & FTE Data
- Strategic Planning - Draft Goals, Objectives, Strategies
- Strategic Planning - Logic Model (PPT)
- Summary of Activity, April 2012
- Summary of Activity, April 2013
- Summary of Activity, August 2012
- Summary of Activity, August 2013
- Summary of Activity, December 2012
- Summary of Activity, December 2013
- Summary of Activity, February 2013
- Summary of Activity, January 31, 2013
- Summary of Activity, July 2012
- Summary of Activity, July 2013
- Summary of Activity, June 2012
- Summary of Activity, June 2013
- Summary of Activity, March 2013
- Summary of Activity, May 2012
• Summary of Activity, May 2013
• Summary of Activity, November 2012
• Summary of Activity, November 2013
• Summary of Activity, October 2012
• Summary of Activity, October 2013
• Summary of Activity, September 2012
• Summary of Activity, September 2013
• Supply Distribution and Migration of Canadian Physicians, 2012
• Sustainable Solutions Report: A Focus on Managing Complex Chronic Diseases
• Visiting Specialists
• Wait Time VSC Calculations 1-30-14 HSS
• Wait Time VSC Calculations 1-30-14 HSS
• Watson Lake Meditech Data December 2012 to January 2014
• Wellness Initiative for D. Peachey, January 27, 2014 (Final)
• Wellness Initiative, HBSC Analyses, Definition of Five Scales
• Wellness Initiative, HBSC Data and Figures of Five Scales
• Wellness Initiative, Kids Count, Snapshot, December 13, 2013
• Whitehorse General Hospital Wait Time Calculations, 1-30-14, HSS
• Yukon Chronic Disease Program Management Strategy, Long Version, April 2012
• Yukon Communities by Health Centre
• Yukon Communities FTEs Outside DHSS
• Yukon Community FTEs
• Yukon First Nations Community Health Scan Report 2010
• Yukon First Nation Mental Wellness Workbook
• Yukon Hospital Corporation, Lab Utilization, 2012-13
• Yukon Hospital Corporation, Medical Imaging Utilization Stats
• Yukon Hospital Corporation, Summary of Wait Times
• Yukon Hospital Corporation, ER In-patient Volumes, 2012-13
• Yukon Hospital Corporation, Surgical Requests Data, December 3 (2)
• Yukon Pharmacists Submission
• Yukon Territory Physician List
A.5 Abstraction of Needs Assessment Data

Following is an abstraction from the methodology section of the 2013 needs assessment undertaken for DHSS by Health Intelligence Inc. and associates.

Quantitative data from a variety of sources were acquired and populated within a project management database (PMDB). All requested data were existing files; no new primary sources of data were created.

Four main channels of information supported the project:

**Standard hospital utilization reporting:** This is typically abstracted data of the type that is sent to CIHI [i.e., DAD (Discharge Abstract Database), and NACRS (National Ambulatory Care Reporting System) records for inpatient acute, ambulatory, ED and sometimes rehabilitation and chronic/complex continuing care episodes]. Reporting mechanisms vary across jurisdictions, especially with respect to non-inpatient-acute episodes. Ambulatory surgery is sometimes captured in DAD and sometimes in NACRS. ED is sometimes captured in NACRS and sometimes in separate data streams. Currently, data for the Whitehorse General Hospital are the only data submitted to CIHI and represent territorial utilization. A preliminary assessment was made of where data are being reported, followed by the preparation of a comprehensive request for data.

**Medical services reporting:** The majority of medical activity is based on the fee-for-service (FFS) model. As in other jurisdictions, a reporting system has been established to implement payments to physicians, similar to OHIP in Ontario and the MSP in British Columbia. These types of systems generally capture information about the providers, patients, and nature of services (billing codes), along with some coding of clinical conditions. It has been noted that documentation of clinical conditions has been historically weak in the Yukon data. Medical services reporting is also a potential source of FTE information for physicians. An assessment of how these are being reported was made, followed by the preparation of a comprehensive request for data.

**Population data:** This channel includes both population estimates and projections by age and gender cohort by location across Yukon Territory, where available. These facilitate the creation of utilization rate calculations and projections. This channel encompasses any additional information that describes the population in terms of health needs characteristics (mental health, dependencies, chronic illness, behaviours, environmental concerns). These are sometimes captured through standard government data collection, at the territorial/provincial level (Ministry, Public Health) or at the federal level through StatsCan or Health Canada, and may be in the form of existing reports. The consultants gathered what is readily available through the department, and then proceeded to fill in any gaps by going to other sources, where possible.

**MIS data:** This is facility-oriented data primarily used for financial reporting. It also incorporates some utilization information. These data can be used to construct financial and operational indicators. This is also a potential source of FTE information for other health care providers.

**Exhibit A.5-01** illustrates the conceptual structure used to assemble and analyze data for the needs assessments. The primary flow is from left to right, or from present to future. Three main streams are
Abstraction of Needs Assessment Data presented. Each of these streams draws on the information from the four principal channels identified above. The primary flow of information corresponds to the components forming the central horizontal axis of the diagram.

**Exhibit A.5-01**
Conceptual Data Structure

The central axis represents current utilization of health and social services and serves as an initial proxy for need. Combined with population estimates, these become expressed as utilization rates for each of the two communities. Population projections were applied to derive estimates of future needs.

A compilation of health status indicators provided an overlay to utilization. This is represented by the blue ellipse at the top of the exhibit. Indicators of health status supported and adjusted the level of needs, where appropriate.

Underlaying the utilization process is a compilation of programs, services, and providers. This is represented by the green ellipse at the bottom of the exhibit. Programs, services, and providers reflect the supply aspect of the system and relate to the functional programming requirements for the new facilities and services.

The assessments of needs for hospitals and broader health and social services in Dawson City and Watson Lake are presented in the following themes:

1. **Communities** - An overview of each community, including a brief summary of the physical settings and their economies

2. **People** - A description of the resident population in each community
iii. Health status - A description of the health status of the residents of each community

iv. Health services utilization - A summary of the types and levels of utilization of residents of each community

v. Health priorities - A synopsis of the priorities for health services in each community

vi. Health resources - A summary of the resources available to meet the needs of the residents in each community
A.6 Visiting Specialists in Yukon Territory

There are three assigned urgency levels to assist prioritization; the incorporated font colour coding provides additional information:

**Green** - wait list improved since review in November 2013

**Purple** - wait list worsened since review in November 2013 - - or - - wait list is greater than 12 months and less than 18 months

**Red** - wait list exceeds 100 patients - - or - - wait list is greater than 18 months

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<td>Rheumatology BIO (45 follow)</td>
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<tr>
<td>Physiatry injection</td>
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<td>2</td>
<td>3</td>
<td>17</td>
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<tr>
<td>Physiatry new patient</td>
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<td>15</td>
<td>8</td>
<td>6</td>
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<td>2</td>
<td>6</td>
<td>7</td>
<td>11</td>
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<td>3</td>
<td>7</td>
<td>51</td>
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<tr>
<td>Physiatry follow-up</td>
<td>1</td>
<td>19</td>
<td>57</td>
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<tr>
<td>Discipline</td>
<td>Urgency Level</td>
<td>January 28, 2014 Wait Time (months)</td>
<td>January 28, 2014 Number of Patients on List</td>
<td>November 26, 2013 Number of Patients on List</td>
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</tbody>
</table>
A.7 Interview Catalogue

Department of Health and Social Services

Continuing Care

- Director of Care & Community
- Director of Extended Care
- Director of Safety and Clinical Excellence
- Home Care Nurse – Watson Lake
- Home Care Program - Occupational Therapist
- Home Care Program - Physiotherapist
- Home Support Worker – Faro
- Manager of Alexander McDonald Lodge
- Manager of Home Care Program
- Manager of Thomson Centre

Corporate Services

- Director and senior policy analysts of Policy & Program Development
- Director of Corporate Planning and Risk Management
- Executive Director and staff of Wellness Initiative

Health Services

- Chief Medical Officer of Health
- Director and Managers of Community Nursing
- Director and Managers of Insured Health Services
- Director of Community Health Programs
- Manager and staff of Mental Health Services
- Manager of Chronic Disease Management Program
- Nurse in Charge – Beaver Creek Health Centre
- Nurse in Charge – Carcross Health Centre
- Nurse in Charge – Carmacks Health Centre
• Nurse in Charge – Dawson City Health Centre
• Nurse in Charge – Destruction Bay Health Centre
• Nurse in Charge – Faro Health Centre
• Nurse in Charge – Haines Junction Health Centre
• Nurse in Charge – Mayo Health Centre
• Nurse in Charge – Old Crow Health Centre
• Nurse in Charge – Pelly Crossing Health Centre
• Nurse in Charge – Ross River Health Centre
• Nurse in Charge – Teslin Health Centre
• Nurse in Charge – Watson Lake Health Centre
• Regional Mental Health Nurse – Dawson City
• Regional Mental Health Nurse – Haines Junction

Social Services

• Alcohol and Drug Services Prevention Consultant – Ross River
• Child Abuse Treatment Services – Dawson City Counsellor
• Director and Managers of Community and Program Support
• Director of Adult Services
• Director of Family and Children’s Services
• Manager of Alcohol and Drug Services
• Supervisor of Child Abuse Treatment Services
• Manager of Regional Services
• Regional Social Worker – Carmacks
• Regional Social Worker – Dawson City
• Regional Social Worker – Haines Junction
• Regional Social Worker – Ross River
• Regional Social Worker – Teslin
• Regional Social Worker – Watson Lake
Yukon Territory Health and Social Services Stakeholders

- Blood Ties Four Directions – Executive Director
- Child Development Centre – Executive Director
- Council of Yukon First Nations – Director of Health and Social Development
- Council of Yukon First Nations Health Commission
- Dawson City Medical Clinic
- Fetal Alcohol Syndrome Society Yukon – Executive Director
- Government of Yukon Territory – Director of Emergency Medical Services
- Health and Social Services Council
- Kwanlin Dün First Nation – Director of Health
- Kwanlin Dün First Nation – Manager of Health Promotion
- Little Salmon Carmacks First Nation – Director of Health and Social Services
- Many Rivers Counselling Services – Executive Director
- Physician Specialist Committee – Members
- Principal of Robert Service School
- Ta’an Kwäch’än Council – Manager of Health
- Teslin Tlingit Council – Director of Health and Social Development
- Tr’ondëk Hwëch’in First Nation – Manager and staff of Health and Social Services
- Tr’ondëk Hwëch’in First Nation – Manager of Education
- Vuntut Gwitchin First Nation – Director of Health and Social Programs
- Watson Lake locum tenens physician
- White River First Nation – Health, Wellness and Language workers
- Yukon Council on Disability – Dawson City office
- Yukon Hospital Corporation - Chief Executive Officer
- Yukon Hospital Corporation - Executive Director of Patient Experience
- Yukon Hospital Corporation – Watson Lake Community Hospital Facility Administrator
- Yukon Hospital Corporation – Dawson City Community Hospital Facility Administrator
• Yukon Licensed Practical Nurses Association – Past President
• Yukon Medical Association – membership
• Yukon Pharmacists Association – Member and private pharmacist
• Yukon Pharmacists Association - President and hospital pharmacist
• Yukon Registered Nurses Association – membership
A.8 Literature Catalogue

Following is a catalogue of literature that underpins the report, with the exception of footnoted references; it is divided into literature with a focus on physician services and planning and literature with a focus on nursing services and planning.

A.8.1 Literature - Physician Services


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A.9 Companion Documents

A.9.1 Data Compendium

The Data Compendium assembles 141 data files into a single Keynote document for reference in the aggregate; as well, a limited number of these charts and tables are incorporated into the report where considered to be useful for more direct reference.

A.9.2 Clinical Service Matrices

Clinical Services Matrices provide the navigational tool for the clinical services plan and include a description of the architecture, a master index, a compendium of definitional levels, and interdependent Excel spreadsheets, swell as the actual matrices that support clinical services planning across the Yukon Territory.