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Northern Telehealth Five-Year Plan

For Consultation

February 15, 2017

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Executive Summary:

Northern Health's mission, through the efforts of dedicated staff and physicians, and in partnership with communities and organizations, is to provide exceptional health services for Northerners. Northern Health serves three hundred thousand people in the northern half of British Columbia. This creates a significant challenge of distance for Northern Health and providers to deliver the care that helps Northerners get and stay healthy. One great opportunity for increasing access to health care is using technology to bridge the distance. Telehealth allows patients and providers to have therapeutic interactions that allow for prevention, screening, diagnosis, determination of a course of treatment and clinical advice similar to that afforded by an in-person experience.

Telehealth is a sub-set of activities under the general rubric of Virtual Care, which happens any time health and well-ness related information is exchanged without participants being in the same location. Virtual care includes teleconferencing and videoconferencing, and can include activities ranging from secure texting and targeted social media reminders to remote home monitoring and robotic surgery performed at a distance. Telehealth is limited to telephone and video conferencing for live, direct interactions with a clinical, educational or administrative purpose.

There is already a confluence of expertise, technology and demand for telehealth. NH has a strong technology infrastructure and years of experience with administrative and educational uses of telehealth. Now NH proposes a five-year Plan that will take dramatic steps to expand the clinical use of telehealth to reach more people in more places, enable access to the most appropriate care and better address the health needs of Northern British Columbians.

The Telehealth Five-Year Plan will be a key part of achieving several of Northern Health's strategic goals by reducing the impact of distance and time in bringing health services to people and their families. The Telehealth Plan also supports the NH Strategic Plan by partnering with the First Nations Health Authority, strengthen pathways for priority chronic diseases[1] and establishing a rural and northern network of services. Finally, the plan is also aligned with provincial and regional strategies and will enable Northern Health and the needs of Northerners to influence the provincial policy and research environment.

The Telehealth Plan was informed by over 50 experienced clinical users, operational and strategic leaders, provincial experts, patients and researchers. Highlights of the Plan include:
- Creating an enabling environment for telehealth use and expansion. Rather than being directive, limiting or prescriptive, the Plan provides a road map so NH can provide opportunities, support innovation and make tools available to more providers and more patients;

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[1] These priorities include developing seamless pathways between Primary Care Homes and Specialist services in four targeted areas: Chronic Diseases, Elder Services, Mental Health and Addictions and Perinatal / Child Services.

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- Focusing on the use of technology to enable relationships. For users of telehealth any technology or tool is secondary to the relationship it enables;
- Affirming longitudinality as a standard of care that drives the expansion and availability of NH-supported telehealth development and implementation, and;
- Leveraging technology that is proven and commonly used while allowing for the incorporation of new tools and technologies that have value for the North.

Following a regional conference and many discussions among the Telehealth Steering Committee[2], the plan includes two overall strategies, one of which leverages what the North already has and is using. The other strategy focuses on environment within which telehealth can grow and measurably increasing the positive impact it can have on the patient experience, outcomes and cost avoidance. The Five-Year Plan includes four goals and nine objectives within these two strategies, and a work plan lays out steps to achieve each of the goals.

The Five-Year Plan's execution will be guided by a detailed implementation plan and a budget that includes continued NH operational support and capital investments, as well as revenue from external sources such as provincial committees and research grants. Several of these revenue opportunities are in process and will provide both capital and operational funding to time-limited activities that will have long-term benefit for the North.

The Five-Year Telehealth Plan is an enabling strategy that builds on the existing foundation in a way that is responsive to the evolution of technology, demography, culture and clinical advancements. It continues to support administrative and educational uses while taking strong steps to improve access to clinical care through technology and strengthening NH's foundation for, and leadership within the field of Telehealth.

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[2] The Telehealth Steering Committee is an advisory group dedicated to assisting NH to improve its telehealth capabilities. Membership is listed in Appendix C.

Northern Telehealth Five-Year Plan Overview

Strategy 1: Use Existing Technology Better

Goal 1: Make Telehealth Easier and More Satisfying to Use

1. Reduce barriers and workflow disruptions and improve experience of use for patients and providers.
2. Improve relationships among interdisciplinary providers.

Goal 2: Make Telehealth easier to Access

3. Increase use among patients facing barriers to accessing care.
4. Improve access to specialist and sub-specialty care in remote and First Nations communities.

Strategy 2: Create an enabling environment

Goal 3: Make it easier to use, adopt and spread new tools and uses of telehealth

5. Develop reliable and adaptable infrastructure and systems.
6. Create a better (well-known, easy to use and effective) pathway for implementing and supporting new uses and technologies.

Goal 4: Build a foundation for telehealth that works for the North

7. Ensure that the Northern Telehealth plan supports longitudinal care and within that, optimal roles for primary care providers and specialists.
8. Ensure telehealth provides value by assessing technology, risk, processes and resource allocation through the triple-aim lens.
9. Ensure alignment of NH Telehealth with provincial policy and legislative frameworks.

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Work to Date/ Background:

Northern Health (NH) faces a significant challenge in delivering health care services because it serves a population similar in size to that of metropolitan Victoria that is spread over an area larger than Yukon Territory. This is an issue to which NH has already been responding. Since 2003, Northern Health has been using videoconferencing for administrative and educational purposes as well as a variety of approaches directly related to clinical care.   NH now offers audio/visual access into homes, physicians' offices, remote locations, and even to mobile users. This growth is the result of advancing technology, a group of visionary early adopters, available incentives and supports for providers in addition to investments already made in Northern Telehealth infrastructure and capacity.

The 5-Year Telehealth Plan is the product of over a year of work and the involvement of over 50 telehealth experts, practitioners, researchers, patients and policy leaders from the North and across BC.   Its development was overseen by the NH Telehealth Steering Committee, an ongoing and broadly representative group that meets monthly.[3] The work leading up to the drafting of the Plan started by documenting the telehealth landscape in BC, and with a Telehealth Planning Workshop convened in 2016, in Prince George. This workshop brought together individuals from diverse backgrounds as well as patients who have used telehealth, to understand the current state of telehealth, identify how to build a future state in collaboration, and provide input which has led to the development of the NH Five-Year plan.

The June 2016 workshop was a highly structured opportunity for open dialogue that included current successes and frustrations, aspirations for the future, and frank discussions about the need to plan and properly support the implementation of new technologies for providing clinical care over a distance. The workshop resulted in a set of recommendations that consider telehealth from a variety of perspectives, including a set of overarching principles that guide the achievement of goals and objectives for the plan over five years.

Following the workshop, the Telehealth Steering Committee has met to respond to several drafts of a Telehealth Five-Year Plan, providing feedback both through Committee teleconferences and individual telephone and videoconference meetings. In summary, the Telehealth Plan itself is the product of using existing telehealth tools to build relationships, exchange ideas and make decisions.

Strategic Context

The Northern Health Strategic Plan for 2017-2021 sees telehealth as a set of activities that produces administrative, educational and clinical benefits.   The NH Strategic Plan identifies clinical goals for Telehealth, including direction to use technology to reduce the impacts of distance and time in bringing health services to people and their families. Scorecard indicators for this goal include:

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[3] For a list of Telehealth Steering Committee Members, please see Appendix C

1. Increased access to telehealth is in place;
2. Technology enables people to receive services closer to home.

In addition to these, the Telehealth Plan will support the achievement of other elements of the NH Strategic Plan by:
   a) Partnering with First Nations Health Authority, and through FNHA, with First Nations and Aboriginal people;
   b) Integrating with and supporting service pathways related to the Chronic Diseases Service Flow which will link Community, Primary, Specialist and Acute Care to improve continuity and flow for a range of chronic diseases management, mental health and addictions, elder services and perinatal care;
   c) Improving the accessibility of primary care to First Nations and remote communities;
   d) Helping people stay at home.

The Five-Year Telehealth Plan was developed in consideration of developments in other health authorities and provincial direction. The Ministry's document *Setting Priorities for the B.C. Health System* (2014), identifies eight priorities to deliver quality and sustainable health system services. Half of these are dependent on effective, integrated, and safe communications and information sharing between patients and providers.[4] MSP billing codes incent the use of telephones or videoconference to substitute for in-person clinical visits.[5]   There are a several tables at the provincial level and among health authorities that bring together subject matter experts to develop and strengthen a framework for Telehealth.

Telehealth is a well-established technology within the North and has been used effectively to bring medical care for patients closer to home and improve patient access to professional services. Examples include delivery across various northern areas of Tele-pharmacy services, Oncology, Renal Services and Psychiatry. Due to this success, the availability of new and easy-to-use videoconferencing technology and new models of service delivery, there has been an increase in the demand for the services by a range health disciplines and disease areas.

As more tools come available there are still policy, practice and legislative gaps. The gaps include legislation governing activities such as texting and sharing patient information to support virtual visits and care coordination.[6]   As a matter of policy and principle, the Plan will avoid taking action in these areas until policy, funding, security, convenience and other issues are resolved by those separate processes.   By staying involved in their development, Northern Health will continue to have a leading role in Telehealth in BC and an approach that is aligned with and influences best practices, legislation, policy, funding and the telehealth activities of other health authorities.

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[4] Terms of Reference: Lower Mainland Virtual Care Collaboration Working Group
[5] Nancy Gabor, op. cit.
[6] British Columbia is seen as Canada's trail-blazer for online, 'virtual care. Canadian Healthcare Technology Nancy Gabor

Situational Analysis

Patients

Residents of northern British Columbia may live in medium-sized, small or even remote communities, and on average they have significantly poorer health than the general population of British Columbia. The North has substantially higher smoking, cancer, obesity and sexually transmitted infections than the provincial average.[7] Prevalence of chronic conditions is also increasing as the population ages, so ongoing contact with GPs and specialists will be a growing need across the region. With an economy anchored by natural resources, upswings and downturns can have significant effects on social determinants of health with resulting implications for providing care. The North's population is diverse, including 54 First Nations spread across 80 Northern communities for whom culturally safe clinical care delivery is a significant factor in the quality and experience of care. With great distances often separating patients from providers, many people have little or no access to health care providers in a timely way.

> ### Renal Telehealth Interdisciplinary Care
>
> Dr. Anurag Singh and his team provide virtual visits in Kidney Care.
>
> - Initial consultation, follow-up and educational orientation happen virtually via videoconferencing to prevent unnecessary travel
> - Patients get access to care that is consistent with provincial and national best practices and enabled by interdisciplinary kidney care team
> - Reduces wait time to see a specialist
> - Links with family physicians to strengthen continuity
>
> "After doing this for several years, we have many examples where delivering care in this way addresses patient concerns, delivers both clinical care and information and helps people stay at home."
>
> Dr. Anurag Singh

Trends in Telehealth Use and Access

In 2014-15 in BC, around 8,000 family physician visits and 13,000 specialist visits were billed to MSP in 2014/15. In the North itself, NH-scheduled uses of telehealth included 7,000 administrative, 230 educational and over 10,000 clinical instances. In First Nations communities, 27 telehealth-enabled health centres facilitated 26 administrative, 30 educational and over 600 clinical telehealth incidents. With well-documented success in the use of clinical telehealth tools and their impact on patient care, there is demand from both patients and providers for more (and more convenient) tools for this kind of clinical encounter.

As software-based innovations come to market quickly, more tools are available today and more will become available over time. Advances include cloud-based and other applications that integrate tools with current technology (such as smart phones, laptops or tablets). Drivers of new tools include innovations in mobility, bandwidth, encryption, optical quality, user interface, ease of adoption, integration of multiple tools and diagnostic equipment.

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[7] Medical Training, Technology trump geography in northern B.C. Five Year in Vancouver, Sept 1, 2014
https://www.biv.com/article/2014/9/medical-training-technology-trump-geography-in-nor/

Organizational Readiness

Northern Health's move to create an enabling environment for telehealth has strong support at the Executive level and among physician leadership. NH already has an experienced IT staff team supporting videoconferencing and improving access to tools. NH now offers audio/visual access into homes, physicians' offices, remote locations, and even to mobile users.

Strategically, a range of primary, specialist and interdisciplinary care providers bring a clinical lens to a Telehealth Steering Committee that includes researchers, policy experts and experienced users of telehealth from across the region and the province. The Committee includes First Nations Health Authority and Provincial Health Services Authority participants who share the goals of increased access to appropriate care through technology.

Given the broad support for moving in this direction, the Plan will integrate expertise from NH Communications, a range of clinical areas that have already used telehealth successfully and other areas of expertise within and outside NH to ensure that Telehealth is well supported across the organization and in the region.

Definition of Telehealth

Within the larger set of Virtual Care activities that enable information exchange without both patients and providers being in the same place, telehealth includes the use of technology, tools and process to connect people in a way that is live, direct and interactive. Telehealth can be used for administrative, educational or clinical purposes.

The definition of telehealth that drives the NH Five-Year plan is consistent with both the FNHA and the Ministry of Health, but is particularly targeted to the conditions of the North:

> **Emergency Room Telehealth in the North**
>
> Prince Rupert has emergency room telehealth (afterhours) connecting an attending family physicians with an ER doctor elsewhere.
>
> Valemount and McBride physicians have a virtual link for physicians to get consults and support from the Prince George Emergency Room.

Clinical telehealth uses videoconferencing and supporting technology to put patients, their families and providers in touch with each other, overcoming barriers including distance, time, mobility and weather.

This definition provides a context for the Plan's efforts to create an enabling environment and encourage the spread and use of telehealth for clinical purposes, while maintaining and supporting videoconferencing for educational and administrative purposes.

Scope: Start With What We Have

While the focus of this Plan is on clinical telehealth, Northern Health will continue to support and grow administrative and educational uses of telehealth, with the clinical telehealth team integrated into the overall Telehealth Department. In addition, NH is committed to supporting interprofessional teams through the development and implementation of telehealth tools.

There are two areas that the Telehealth Plan will not lead, but will instead support others to develop. First, there are groups in the North and in the province that are developing standards, technology or policy to support new and emerging tools, such as text messaging or transfer of clinical information. Second, the Plan will be carried out in an environment where new tools and technologies are constantly being developed. In both these areas, Northern Health and the Telehealth Steering Committee will maintain contact with and support these developments. The plan allows for opportunistically integrating these tools and technologies when they are secure and ready, pending support of the Committee and other regional and provincial partners.

As a starting point of its clinical focus, the Five-Year Plan will maximize videoconferencing tools to expand availability and access to patients and providers. By using existing technologies better, NH can make telehealth easier to access and use with a smaller initial investment and reduced risk. As telehealth becomes more familiar and broadly utilized, the Plan will support the emergence of an enabling environment that stimulates and supports creative uses of technology to deliver clinical services.

Aspiration for Telehealth in the North:

Participants in the process of developing a 5-year plan have called for a bold, clear and simple target to guide action. The aspirational statement combines NH's strategic goal to reduce the impact of distance on access to care, with the Telehealth Plan's call for an enabling environment:

"Northerners will increasingly be able to use virtual means to access health services that meet their needs."

This aspirational statement will form the basis for further consultation and ultimately the core of both implementation and evaluation efforts.

Guiding Principles

Participants in the rich dialogue on Telehealth held in the spring of 2016 identified many potential principles to guide the path forward. Over time, those principles have been refined to include:

1. **Telehealth will be led by a clinical perspective.** NH's business is the provision of exceptional health services, and telehealth decisions will be guided by this mission. Both patients and providers will be at the core of telehealth improvements;

2. **Relationships are at the core of Telehealth.** Technology is a tool to facilitate interactions, be they clinical, administrative or educational. Telehealth will be used in a culturally safe and respectful way, to improve relationships with patients and between providers;

3. **Telehealth tools should be low-barrier for patients and providers.** As technology becomes more available and easier to use, both providers and patients will desire increasingly simple approaches;

4. **NH Telehealth will aim at the highest standards possible** including ease of use, reliability and security;

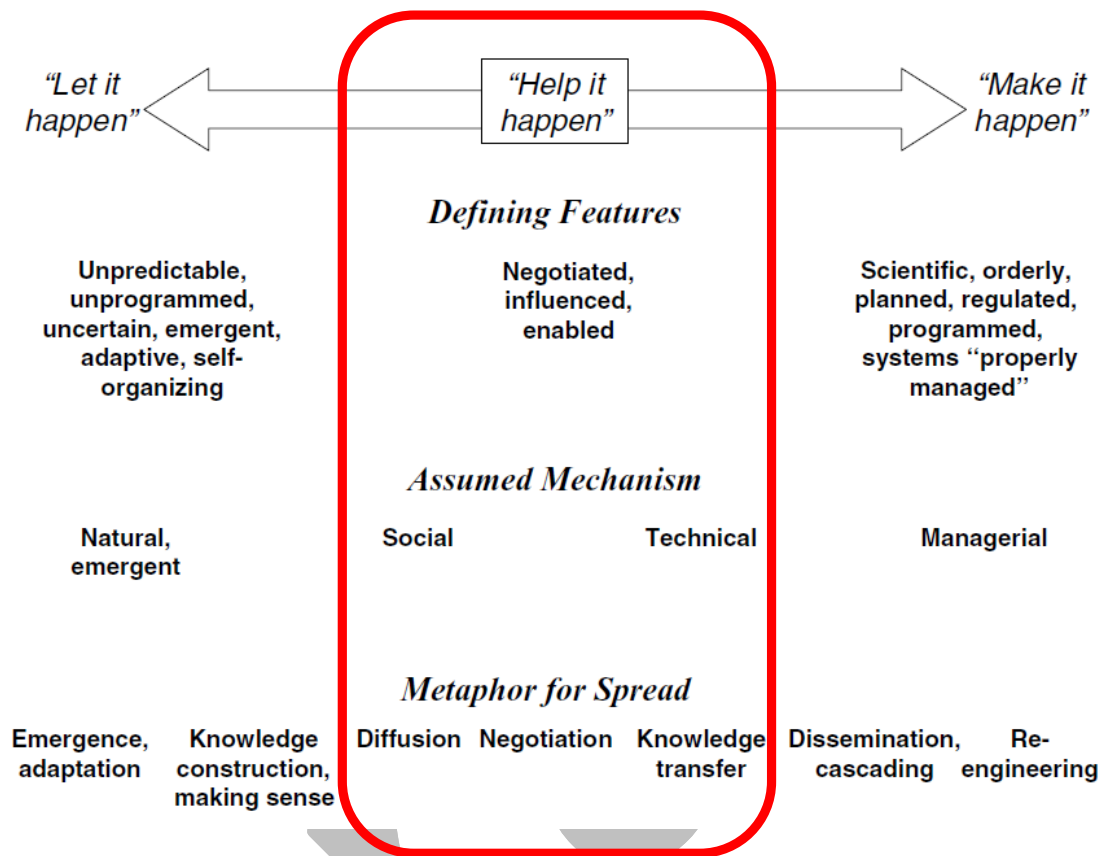5. **Telehealth in the North will support NH's Idealised System of Services including Primary Care Homes and Integrated Chronic Diseases Service Flow.** Wherever possible, opportunities to integrate with and strengthen other strategic initiatives will be pursued;

6. **Telehealth will improve access to care for Northerners.** Currently, many people in the North face barriers in getting timely access to the care they need, and telehealth can enable access to appropriate care provided within or outside the North.

Telehealth for Northern Children with Epilepsy

The Division of Pediatric Neurology at BC Children's Hospital supports pediatric patients with epilepsy living in Prince George.

- This service is provided by telehealth at the University Hospital of Northern BC and is supported by the nurse who works in the clinic
- The nurse ensures BCCH is provided with a current height, weight and vital signs
- The neurologist visits patients twice a year
- Patients can meet on a monthly basis with their neurologist and nurse clinician for medication adjustments
- This has eliminated frequent trips to Vancouver, so children have less time away from school, parents can continue to work and families save money on travel.

Role of Northern Health in Telehealth

There are several elements to a role for Northern Health in Telehealth, starting with an internal commitment, a history of leadership in telehealth investment, and an increasingly integrated approach to supporting clinical services through technology. At the same time, the reality is that providers – especially physicians - want support and encouragement but not instruction and obligation to increase adoption and use of telehealth tools. The optimal path for the North is a middle path – using leadership, encouragement, evidence and tangible supports to help telehealth expand in availability and use.

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A middle path for NH in Telehealth

"Let it happen" ← "Help it happen" → "Make it happen"

Defining Features

"Let it happen"	"Help it happen"	"Make it happen"
Unpredictable, unprogrammed, uncertain, emergent, adaptive, self-organizing	Negotiated, influenced, enabled	Scientific, orderly, planned, regulated, programmed, systems "properly managed"

Assumed Mechanism

	Social	Technical	Managerial
Natural, emergent	Social	Technical	Managerial

Metaphor for Spread

| Emergence, adaptation | Knowledge construction, making sense | Diffusion | Negotiation | Knowledge transfer | Dissemination, cascading | Re-engineering |

Greenhalgh T. Et al. The Milbank Quarterly, Vol. 82, No. 4, 2004 (pp. 581–629)

Key roles for Northern Health in the Plan include:
1. Provide structure, capital and operational investments and support to increase uptake and reach of telehealth among NH staff and teams;
2. Ensure sound implementation and thorough evaluation of progress to adjust the plan in response to demand;
3. Support clinicians, patients, administrators and educators in their use of Telehealth to achieve optimal use and satisfaction of users;
4. Build relationships with internal departments and external partners and collaborate to solve problems;
5. Engage stakeholders across the North to ensure that the Plan is responsive to patient, provider and community needs;
6. Develop standards for new technologies and build support for the standards through evidence and proven impact on patient wellbeing, including general quality indicators that apply to all uses of telehealth;

7. Assess and support the development of technologies and facilitate integrated uses for clinical purposes;

8. Evaluate Northern-Health supported Telehealth against the Triple Aim, and build a body of evidence to guide future activities;

9. Lead and enable expanded use of telehealth among primary care homes and facilities where NH has more influence;

10. Communicate, promote opportunities and provide tools so that Northerners can use and benefit from Telehealth.

> **Telepharmacy in action**
>
> Seven years ago, there were no NH pharmacists west of Prince George. To address the problem of medication accuracy, Northern Health developed a telepharmacy approach to assist with cancer medication. This enabled Pharmacists to supervise the provision of prescriptions in facilities.
>
> Now a pharmacist in a remote location can help to ensure that a patient in a NH facility elsewhere, is receiving the correct medication and the correct dosage.

NH's success in executing the Five-Year Plan will flow from leveraging its resources and influence, continued engagement, responsive implementation through relationship building and collaboration.

Two Key Strategies Guide the Five-Year Plan

The northern Telehealth Five-Year Plan is organized through two high-level strategies. Both providers and patients share a common interest in having a therapeutic relationship that is seamless, easy to access and integrates easily into our current ways of providing and receiving care.

Following the principle of building on the current foundation of proven and familiar tools, the first strategy aims to use existing technology better.   *Using Existing Technology Better* is a call to maximize the tools we already have – a strategy that reduces risk, minimizes the need for new investments and provides encouragement to those who have shown leadership in the successful use of telehealth tools. This strategy has an overall aim of improving access to telehealth tools and making the use of those tools easy and satisfying. Starting with efforts to streamline currently-used tools, the Plan identifies people who are less likely to currently have easy access to care as the intended beneficiaries.

The second strategy focuses on internal systems that support innovation and spread, and on ensuring that the Five-Year Plan strengthens the foundation for the future. The strategy of *Creating an Enabling Environment* calls for Northern Health to ensure that clinicians have what they need to deliver care effectively, and have an easy and clear pathway to scale up the adoption of tools that work for the north.

Creating an enabling environment is also a way of building and consolidating what will be needed for Northern Health to continue to expand availability of telehealth. Several objectives will ensure that telehealth is guided by evidence on continuity of care, that Northern Health has a framework for continuous quality improvement of telehealth, and influences telehealth policy and legislation in BC.

Video Opioid Substitution Therapy

Northern physicians with Opioid prescribing licenses are supporting a larger number of clients living in diverse communities:

- The physician group in Prince George supports clients in Quesnel and Dawson Creek via videoconferencing
- Physicians in Fort St John are using telehealth technology to support clients in Fort Nelson and Chetwynd

This service is saving clients from having to travel during bad weather while ensuring they have access to this critical service. The service is saving lives and reducing emergency room visits during the Overdose Health Crisis in BC.

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Telehealth Five-Year Plan

Strategy 1: Use Existing Technology Better
Goal 1: Make Telehealth Easier and More Satisfying to Use

1. Reduce barriers and workflow disruptions and improve experience of use for patients and providers.

2. Improve relationships among interdisciplinary providers.

Goal 2: Make Telehealth easier to Access

3. Increase use among patients facing barriers to accessing care.

4. Improve access to specialist and sub-specialty care in remote and First Nations communities.

Strategy 2: Create an enabling environment
Goal 3: Make it easier to use, adopt and spread new tools and uses of telehealth

5. Develop reliable and adaptable infrastructure and systems.

6. Create a better (well-known, easy to use and effective) pathway for implementing and supporting new uses and technologies.

Goal 4: Build a foundation for telehealth that works for the North
7. Ensure that the Northern Telehealth plan supports longitudinal care and within that, optimal roles for primary care providers and specialists.

8. Ensure telehealth provides value by assessing technology, risk, processes and resource allocation through the triple-aim lens.

9. Ensure alignment of NH Telehealth with provincial policy and legislative frameworks.

Two Structures to Implement the Northern Telehealth Five-Year Plan

Telehealth Steering Committee

The Telehealth Steering Committee (TSC) includes representation from a range of NH staff, as well as FNHA, PHSA and the Ministry of Health.   The Committee is an advisory group that provides insight, support and a critical perspective on the North's adoption of telehealth. This is an optimal group to help NH create an enabling environment and as the Plan is implemented, the TSC will have several roles:

1. Contribute to the writing of the Telehealth Five-Year Plan and support its development and implementation;
2. Review and provide input into an Evaluation Framework for clinical Telehealth;
3. Ensure that the NH Telehealth Plan is integrated with telehealth activities being carried out by other health authorities and provincially;
4. Assess and offer recommendations on proposed investments in telehealth tools and activities;
5. Support the Telehealth Team by participating on time-limited problem-solving groups or sub-committees to inform activities and manage risks;
6. Provide feedback from the NH community of providers to the Telehealth team;
7. Review and recommend approval of an annual Telehealth report to NH Executive. The report will contain a summary of activities, outputs and impacts, tied back to the NH Strategic Plan, as well as evaluation by providers and patients;
8. Review evaluations of telehealth efforts, and suggest improvements;
9. Review and inform any requests for new resources (internally and externally) to strengthen and extend reach.

Telehealth Department

To succeed in achieving the goals of the Five-Year Plan, the Telehealth Department will need to be expanded. The targeted expansion of the team will enable it to achieve two key functions:

1. Continue to support Administrative and Educational uses of telehealth, including investment in, support and maintenance of infrastructure, training and scheduling for these functions. This will be done through the existing Operational Infrastructure Support team who are working at or close to full capacity;
2. Another interdisciplinary team will be developed to lead clinical telehealth, including executing the Telehealth Five-Year Plan. This will include the work of planning and carrying out each of the activities in the Plan.

The work of clinical Telehealth Department will have three overall areas of focus:

Implement the Plan and Develop Tools:

a) Overall responsibility for implementation, ensuring that the implementation of the Plan responds to stakeholders across the North, is carried out in a timely manner and progress is communicated internally;

b) Engage providers and patients to identify and respond to clinical telehealth needs, by developing and communicating a central point of contact for such requests;
c) Engage partners such as FNHA and PHSA to improve integration and access to clinical services delivered through telehealth;
d) Maintain ongoing contact with a variety of clinical areas and internal leaders to ensure timely response to requests for supports and new tools;
e) Be available to support users when they need help to solve problems;
f) Implement customer service standards in relation to assessing ideas for new tools or technologies, communicating NH requirements, and timelines from initial contact to implementation of new tools;
g) Assess current tools to identify and improve efficiency and reduce barriers to use;
h) Develop tools as required and support in adoption and use by providing documents, videos or by recruiting and supporting the work of a champion to train users;
i) Optimize telehealth use for clinical use and patient encounters;
j) Make sure that peripherals, such as diagnostic tools and carts are up to date with regards to standards in areas such as optical quality, authentication and security;
k) Promote tools to providers and patients, and help to improve access through improvements in workflow and ease of use;
l) Propose infrastructure investment to enable effective and satisfactory use of tools attending to system capacity and bandwidth;
m) Track access, utilization, satisfaction, cost and impact.

Policy and Standards for Telehealth

a) Participate in provincial and health authority telehealth tables to assist with and shape policies so that they support Northerners;
b) Develop policy to ensure high standards in areas such as authentication, security, privacy and to address specific risks of telehealth tools;
c) Respond to feedback from providers and patients, so that tools are easy to use, convenient, reliable and can be sustained with minimal ongoing cost;
d) Develop quality indicators for all telehealth services and tools, through engagement and measures important to patients, providers and health authorities. This includes general standards for quality across a range of clinical areas;
e) Evaluate technology developments and adjust standards in areas such as optical quality, authentication and security, diagnostic tools and carts, to improve currency of NH technology.

Engagement and Reporting

a) Engage the Telehealth Steering Committee and other relevant groups within Northern Health to seek input or feedback. This will include a variety of clinical areas, communications and risk management;
b) Develop and implement an evaluation framework that accurately reflects the objectives and goals of the Plan, including approaches that enable patients to report on outcomes;

c) Gather and maintain current data on increases in utilization and types of uses, locations served and other information that will assist Northern Health to plan further investments in telehealth;

d) Engage providers and patients to evaluate and continuously improve tools, workflows, supports and availability of tools;

e) Organize and convene conferences to provide updates, evaluate progress and engage stakeholders in planning;

f) Based on demand, create a business case annually for maintenance, development and support of telehealth for all purposes that is aligned with the annual goals and objectives on behalf of the Telehealth Steering Committee

Proposed Membership of a Clinically-Focused Telehealth Team

In addition to continuing current efforts to maintain and support administrative and educational telehealth uses, the Telehealth Team will have a team focused specifically on clinical interactions. Two of the team members will be directly accountable to the Regional Manager, and others will collaborate with the Telehealth Team to assist with planning and execution of the Plan.

Regional Manager, Telehealth

Manage, oversee and ensure alignment of telehealth with NH Strategic Plan, Telehealth Plan and other regional and provincial bodies. Assess applications and set regional goals for uptake of any new tool or application. Oversees evaluation of team and tools, serves as the main point of contact with the Telehealth Steering Committee and drafts annual reports and plans for executive on behalf of the TSC.

Telehealth Coordinator

Provide training to staff and assist with scheduling as well as responding to ongoing needs of the team and internal clients and partners.

Project Leader, Clinical Telehealth

Plan, coordinate and implement the development of new tools and ensure that tools developed and shared meet standards required for Northern Health. Reports to Regional Manager, Telehealth.

Clinical Engagement, Telehealth

Receive and assess ideas for new telehealth tools and applications, promote telehealth use among providers, train and support providers in the use of tools and evaluate the experiences of providers and patients. Recruit and support champions to introduce tools, train and support providers. Work with the Project Leader and others to improve reliability, convenience and ease of use. Reports to Regional Manager, Telehealth.

Operational Infrastructure Support

The Clinical Telehealth Team are part of a larger group that provides support for technology, maintenance and scheduling. These current team members will continue to provide support and to plan, install and maintain videoconferencing and other tools and services for administrative and educational uses, and will expand to address additional needs generated by increased use of clinical telehealth.

Communications

A NH Communications expert will bring specific expertise in reaching providers and patients to promote use of tools, translate issues identified by both providers and patients into actionable feedback for the Telehealth team. Also, FNHA staff will work with the Telehealth Department to share tools and collaborate to reach First Nations and Aboriginal people, and to make telehealth tools and resources available to providers. Supports internal and external communication goals for Telehealth, including promoting use of tools with general and targeted audiences.

Clinical teams using or wanting telehealth tool

The Telehealth team will have a deep network of contacts to ensure clinical leadership of tool development and improvement. On an as-needed basis, the Telehealth Team will support clinicians to define their needs, develop requirements, test tools and improve workflow to ensure ease of access and use. It is likely that each situation will vary depending on circumstances, familiarity with technology and time available.

For example, the Telehealth Plan will involve clinicians and administrators who are planning and implementing strategies such as the Integrated Chronic Disease Pathway and Primary Care Homes, to ensure that telehealth supports the need for access, coordination and continuity.

Financial Plan and Assumptions

Anticipated investments and impacts:

The Telehealth Five-Year Plan calls for modest investments to increase the availability of videoconferencing tools and to incrementally build the capacity of NH's current technological infrastructure and operations to enable increased capacity and satisfactory experiences for patients and providers. There are two types of investments anticipated in the first year of the Telehealth Plan;

Operational improvements in 2017-2020:

The Plan calls for improved responsiveness to clinical needs by expanding access to and utilization of clinical Telehealth. To achieve this, there will be four positions added to the team over three years. One of these will work directly with clinicians to develop, expand availability and access, and support adoption and utilization of telehealth across the north. Others will plan and implement new tools, attend to infrastructure needs and assist with scheduling and training of new users. One of these positions will be supported through outside funding.

Capital Improvements in 2017-2020:

Capital Improvements will be required to add capacity to NH's already-robust infrastructure. This includes one-time licensing costs, servers, controllers and other technology that is behind the scenes, but which is essential to enable a higher volume of quality visual and audio connections.

Revenue Sources

1. **Northern Health Budget** for maintaining and increasing telehealth capacity in the North. This includes funds to address staffing costs, ongoing maintenance of technology and expanding the capacity for telehealth through "hidden" infrastructure, such as controllers and servers.
2. **Outside revenue sources** from project and related capital grants for activities included in the Plan. This includes revenues from several sources including:
   a. Joint Standing Committee on Rural Issues, which will fund expansion of Jabber licenses (both one-time and annual costs) and a portion of costs to increase system capacity to enable this to work in a satisfactory manner. Depending on how quickly uptake grows, there may be a case for further investment in Jabber expansion, and ongoing tracking will support any case brought forward;
   b. Other sources that are relevant to the Northern Telehealth Five-Year Plan, such the Joint Standing Committee on Rural Issues, Specialist-, Shared Care- and General Practice Services Committees. It is likely that a range of non-physician focussed sources will also be accessed to support research and evaluation.

The chart below summarizes funding requested from NH to implement the Plan as well as funds acquired from the Joint Standing Committee that will support Telehealth activities.

Project Costs to Implement Telehealth Plan	2017-18		2018-19		2019-20	
	NH Portion	**JSC Portion**	**NH Portion**	**JSC Portion**	**NH Portion**	**JSC Portion**
Operational						
Staffing and Dept. costs (describe)						
- Project Leader (2017-18 ongoing)		In-Kind		In-Kind		In-Kind
- Technical Analyst (2018-19 ongoing)				$75,000	$75000	
- Scheduler (2019-20 ongoing)		$65,000		$65,000	$65000	
- Clinical Engagement Position (2017-18 ongoing)	$85000		$85000		$85000	
Departmental License Maintenance Costs			$40,000		$10,000	
JSC Proposal Development and Planning		$75,000				
Departmental Costs		$20,000		$20,000		$20,000
Total Operational Costs	**$85000**	**$150000**	**$125000**	**$160000**	**$235000**	**$20000**
Capital						
Increasing Network Capacity - Hardware - Licenses	$50,000 (Expressway)		$105,000 (Core, Bridge & Edge)			
Jabber user Licenses		$25,000		$50,000		$50,000
Evaluation Tools for analytics		$35,000				
Total Capital Costs	**$50,000**	**$60,000**	**$105000**	**$50,000**		**$50,000**
Grand Total	**$135,000**	**$220,00**	**$230,000**	**$210,000**	**$235,000**	**$70,000**

Controls on Investments:

The full budgetary impact over the five-year period of the plan will only be known after stakeholders across the North are consulted and the Plan is fine-tuned to be responsive. At the same time, additional revenue sources are being secured to enable NH to expand access to existing telehealth tools and to develop a robust evaluation framework.

Conscious of resource limitations, the Plan includes two types of controls on fiscal growth for the Northern Telehealth Five-Year Plan: internal and external:

Internal

Internal controls refer to those that are incorporated within the Plan itself. These include:

1. An overall strategy that builds on current infrastructure and teams. The Five-Year plan assumes that the current infrastructure needs to be grown, not replaced. All previous investments in capital and operations will be leveraged to their maximum capacity;
2. Integration of NH financial decision-makers in the Telehealth Steering Committee. Committee discussions include "blue sky" topics, but the conversations and decisions are grounded in the pragmatic reality of available resources and financial decision-making processes within NH. The Committee proposes recommendations that are achievable within reasonable constraints.

External

External controls refer to those constraints that are elements of the environment within which the Five-Year Plan will be implemented:

1. Availability of outside funding to increase availability, access and utilization. The Telehealth Team is already seeking funding to increase the capacity of current tools being used, in order to reuce internal funding requests;
2. Partnership with FNHA and other health authorities with compatible technology and limitations on new investments. By working with partners who also have limited resources for new investment, the Five-Year Plan aligns NH with an incremental approach to the adoption of new technologies;

Delivering Value for Northern Health

Evaluating the Five-Year Plan will not be easy – metrics for measuring Triple-Aim impact of Telehealth are not well-developed, and there is no current framework for assessing how Telehealth addresses health authority cost drivers such as acute care utilization including ED access. At the same time, Northern Health has a recognized history of investing in Telehealth, and has developed patient-related and environmental impact measures, such as reductions in distance travelled and carbon dioxide emissions as a result of travel that has been reduced by enabling patients to receive care without needing to visit their provider.

Starting with the NH Strategic Goals related to telehealth, the Plan anticipates the following:

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1. **Increased access to telehealth is in place.** The Plan will make videoconferencing tools available to over 300 additional physicians, including family physicians and specialists. Metrics include increasing the number of clinical interactions annually from 10,000 to 55,000;
2. **Technology enables people to receive services closer to home**. Partnership with FNHA, expanded availability of videoconferencing that can be accessed from facilities across the North, and communication with patients will enable thousands more home-to-provider clinical interactions through telehealth every year. The plan will increase the number of endpoints by 1000;

Other elements to be achieved include:
- Partnering with First Nations Health Authority through participation on the Telehealth Steering Committee and through engagement with Aboriginal Health Improvement Committees and sub-regional meetings;
- Integrating with and supporting service pathways related to the Chronic Diseases Service Flow which will link Community, Primary, Specialist and Acute Care to improve continuity and flow for a range of chronic diseases management, mental health and addictions, elder services and perinatal care. This will be achieved through participation of key members of the Chronic Diseases teams in the development and targeting of telehealth;
- Improving the accessibility of primary care to First Nations and remote communities, by engaging with First Nations communities;
- Helping people stay at home, by expanding availability and supporting utilization of tools that enable patients to get in contact with their providers directly from their home.

Evaluation:

In order to adequately measure the impact on drivers that are relevant to asses in relation to investments made, the Plan includes the development of a robust framework for evaluation, which will define and assess the Plan's impact against the Triple Aim. Anticipated measures include:

1. Patient well-being:
   a. Self-reported improvements as a result of reduced travel time and costs, stress, and the ability to maintain an engaged lifestyle that includes work and family time;
   b. Clinical indicators showing the extent to which outcomes equal or better those resulting from in-person care.

2. Patient and provider experience of care:
   a. Self-reported indicators such as more timely access, reduced number of cancelled appointments, satisfaction with comprehensiveness and continuity of care;

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      b.   Self-reported and clinical indicators including quality of experience, and completion of course of treatment and slower progression of chronic conditions.

3.   System sustainability including:
      a.   Self-assessed levels of satisfaction with the support for and quality of videoconferencing connections, reductions in barriers and workflow disruption for physicians and professional satisfaction for providers;
      b.   Measurements of avoided emergency department utilization such as Ministry data showing 6-month reduction pre- and post- telehealth, reduced use of ambulance services for conditions and interventions occurring at earlier stages of disease progression.

Conclusion

The Northern Telehealth Five-Year Plan will maintain the availability of communication tools for administrative and educational purposes while expanding the availability and use of videoconferencing to provide clinical care. The plan takes great strides forward in using proven technology – making it easier to use and more accessible. It also creates an enabling environment so that a new foundation is built that positions NH and its people to strengthen a growing number of therapeutic relationships at a distance.

Such an approach includes a practical focus that minimizes risk and new investment and builds from NH's current strengths, with a modular expansion to the staff team that integrates a clinically-centered focus for tool development and spread. It positions the North to strengthen its efforts by accessing outside funding to implement this expansion and create quality indicators for both providers and patients. Finally, it includes a strong evaluation component so that stakeholders and Executive will have evidence of the impact of these activities.

The Telehealth Five-Year Plan is aligned with and supports NH's Strategic Plan, with an expectation to increase the number and quality of clinical telehealth interactions and reduce the impacts of distance and time in bringing health services to people and their families.   With ongoing engagement and oversight by a Steering Committee that brings a clinical focus regionally and provincially, the Telehealth Plan positions the region to accelerate its leadership through specific, targeted and measurable improvements that will have a strong impact on the wellbeing of Northerners.

Introduction to Appendices and Plan Details

The Northern Telehealth Five-Year Plan synthesizes over a decade of growth in infrastructure, user experience and technological change. It then identifies strategies, goals and objectives as well as structures and financial enablers.   In order to achieve these and the overall aspirations of the plan, the Telehealth Steering Committee has also carried out detailed operational planning that aligns the expansion of Clinical Telehealth with Northern Health's capital and operational realities.

The following appendices describe annual deliverables and targets as well as benchmarks for each goal over the full five years of the Plan. While they have been thought-through, these will be reviewed following a regional consultation that engages stakeholders both inside and outside of Northern Health, to ensure that the plan and its implementation are responsive and leverage social and financial partnerships wherever possible.   The deliverables, targets and benchmarks are also designed to be modified each year as circumstances, technology and rates of adaptation change.

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Appendix A: Five-Year Workplan

Strategy 1: Use Existing Technology Better

Goal 1: Make Telehealth Easier and More Satisfying to Use

Objectives

A. Reduce barriers and workflow disruption and improve experience of use for patients and providers. Issues likely to address include:
- Challenges with scheduling and need for tools to become self-scheduling, or to streamline scheduling or have more convenient access to IT help;
- Awkward workflow, need for timely IT support when setting up tools;
- Patients may want to access telehealth from home and be looking for app-based or software they can run on home computer

B. Improve relationships among interdisciplinary providers. Issues are likely to include:
- Find a way to make scheduling of multiple providers more easily
- Need a pathway to involve interdisciplinary providers, or to work across HA jurisdictional boundaries
- Support for telehealth that includes pharmacists working with family physicians
- Identify tools and uses that build skills and confidence among providers and improves ability of patients to self-manage

Year 1 Deliverables
1. Create a list of providers who offer virtual visits in NH, including interdisciplinary providers.
2. Assess their professional satisfaction with telehealth tools and workflows, through interviews.
3. Work with providers and teams experiencing frustration or challenges, to improve tools and workflows.
4. For virtual visits with multiple providers, analyze workflow at both ends of the visit and make recommendations to improve efficiency and satisfaction of all participants.
5. Where providers are satisfied with a tool, develop a strategy for promoting and support adoption, and for incrementally promoting with patients as the tool becomes available;

Year 1 Targets:
Sign-off on approaches and evaluation of ways to improve clinical telehealth workflows
Completion of a plan to engage with other health authorities to assess and improve inter-HA telehealth workflows and address problems

Year 2 Deliverables
1. Identify Primary Care Homes who are interested in using telehealth;
2. Involve Divisions of Family Practice and practice coaches to connect with providers seeking improved ease of use;
3. Develop draft set of best practices for telehealth in the delivery of primary care;
4. Develop tools for assessing patient satisfaction (building on tele-renal approaches) and priorities in virtual visits;

5. Develop generalizable quality indicators to assess new tools as they are developed, and to evaluate existing tools;
6. Evaluate satisfaction of patients participating in virtual visits, and develop post-use survey;
7. Adjust tools to improve satisfaction and access among patients;
8. Carry out a participatory evaluation of virtual tools for ease of use, effectiveness and reliability;

Year 2 Targets:
Improve satisfaction with 5 virtual visit tools or services used by providers and their teams
Improve workflow in one telehealth services used between the North and elsewhere in BC

Year 3 Deliverables
1. Continue to identify providers of virtual visits, assess and improve workflow and tools
2. Develop tools / materials to support prospective users of tools
3. Develop and deliver training materials to assist providers new to telehealth and advise on workflow;
4. Adopt the findings of the Telehealth Quality Indicators as they inform process improvement and evaluation;
5. Engage and train practice support coaches to assess and improve virtual visit workflows

Year 3 Targets:
Improve satisfaction with 5 virtual visit tools or services used by providers and their teams
Documentation of optimal workflow for 5 tools
Training and ongoing support of 2 practice coaches working with family physicians or PCH.

Year 4 Deliverables
1. Continue to identify providers of virtual visits, assess and improve workflow and tools
2. Evaluate and address satisfaction of patients;
3. Implement findings of the Telehealth Quality Indicators as they inform process improvement and evaluation;
4. Engage and train practice support coaches to assess and improve virtual visit workflows

Year 4 Targets:
Improve satisfaction with 5 virtual visit tools or services used by providers and their teams
Training and ongoing support of 2 practice coaches working with family physicians or PCH.

Year 5 Deliverables
- Evaluate and address satisfaction of patients;
- Develop and implement supports (orientation, training videos, etc.);
- Adopt the findings of the Telehealth Quality Indicators as they inform process improvement and evaluation;
- Engage and train practice support coaches to assess and improve virtual visit workflows
- Carry out a participatory evaluation of virtual tools for ease of use, effectiveness and reliability;

Year 5 Targets:
Improve satisfaction with 5 virtual visit tools or services used by providers and their teams
Training and ongoing support of 2 practice coaches working with family physicians or PCH.

Partners
Divisions and facility-based physician groups
Clinical areas and providers offering virtual visits

Proposed Benchmarks of Goal 1: Make Telehealth Easier and More Satisfying to Use

a) Number of current telehealth tools and processes reported to be working as needed, and to be easy to use, convenient and reliable;
b) Number of providers reporting that tools enable them to have a strong and effective therapeutic relationship or that tools enable them to "get the job done effectively";
c) Number or percentage of patients using telehealth who report that tools or services enable them to get the care they need, and that they are able to use telehealth without difficulty
d) Number and range of clinical areas where telehealth tools and processes are assessed and improved;
e) Number of interdisciplinary providers stating that their roles are clear and that virtual visits are satisfying and rewarding.
f) Number of providers responding that the scheduling process is not a barrier to them providing interdisciplinary virtual visits.

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Goal 2: Make Telehealth Easier to Access

Objectives:
   a) Increased use of virtual visits among patients facing barriers to accessing care**.** Issues likely to be addressed include:
   - An overall shortage of physicians in the North, particularly those available to people in remote communities;
   - Lack of coordination Healthlink BC to triage 811 calls appropriate for telehealth;
   - Opportunity to expand both provider-initiated and patient-initiated visits;
   - Need for appropriate promotion and support to increase uptake among providers.

   b) Improve access to specialist care in remote and First Nations communities. Issues like to be addressed include:
   - Services from patients in the North to outside, that require clearer protocols and possibly cost sharing agreements;
   - Balancing most appropriate care for a patient's circumstances with the need for continuity with known providers. This may include services to support conferencing related to virtual visits, particularly as interdisciplinary Primary Care Homes;
   - Need for appropriate promotion and support to increase uptake among providers;
   - Use of non-clinicians in First Nations community health facilities to support patients.

Year 1 Deliverables
   1. Build a plan to expand access to Jabber, including approach to promotion, installation, training and support and evaluation
   2. Identify promising targets for expansion, including First Nations communities, remote communities, people with chronic disease (where a specialist is experienced and providing services via telehealth)
   3. Meet with AHICs to identify communities where there is potential to quickly improve access to specialists and primary care providers;
   4. Identify specialists using telehealth to support people in remote and FN communities, and engage community-based FN health staff;
   5. Develop strategy to engage Nurse Practitioners in use of telehealth to strengthen and expand access to care;
   6. Identify and support champions who can promote telehealth and train colleagues
   7. Develop framework for improving access that considers social determinants of health, expanded to include uniquely Northern issues such as remoteness, size of community, bandwidth and availability of transportation

Year 1 Targets:
5 new primary care Jabber users
5 new specialist Jabber users

Year 2 Deliverables

1. Promote, install, train, support providers to use Jabber tools
2. Through Divisions, identify family physicians interested in providing telehealth to FN communities
3. Identify process for implementing Jabber-enabled telehealth in PHCs
4. Design and plan implementation of tablet-based tools for residential, home-care visiting and pharmaceutical expertise
5. Incorporate cultural safety into training and supports for providers using NH tools to offer virtual visits;
6. Identify and recruit clinician champions who can promote telehealth and train colleagues
7. Support implementation and customize workflows as needed
8. Assess utilization and remove Jabber after one year without use (or other reasonable criteria)

Year 2 Targets:
25 new primary care Jabber users
25 new specialist Jabber users
All new PCH's are Jabber-enabled
5 First Nations communities have more virtual visits with specialists, or with a wider range of specialists

Year 3 Deliverables
1. Promote, install, train, support providers to use Jabber tools
2. Implement self-reporting, home monitoring, virtual home visit tools
3. Build and continually update a directory of providers who provide telehealth. May be integrated with Pathways
4. Build capacity for physicians to work with lay people who support patients
5. Assess utilization and remove Jabber after one year without use (or other reasonable criteria)

Year 3 Targets:
50 new primary care Jabber users
25 new specialist Jabber users
All new PCH's are Jabber-enabled
Deployment of 5 new tools for self-reporting, home monitoring, virtual home visits
10 *First Nations communities have more virtual visits with specialists, or with a wider range of specialists*

Year 4 Deliverables
1. Promote, install, train, support providers to use Jabber tools
2. Assess utilization and remove Jabber after one year without use (or other reasonable criteria)
3. Implement self-reporting, home monitoring, virtual home visit tools

Year 4 Targets:
50 new primary care Jabber users
25 new specialist Jabber users
All new PCH's are Jabber-enabled
Deployment of 20 new tools for self-reporting, home monitoring, virtual home visits
15 First Nations communities have more virtual visits with specialists, or with a wider range of specialists

Year 5 Deliverables
1. Promote, install, train, support providers to use Jabber tools
2. Assess utilization and remove Jabber after one year without use (or other reasonable criteria)
5. Implement self-reporting, home monitoring, virtual home visit tools
6. Support implementation and customize workflows as needed
7. Promote tools, improve awareness and encourage exploration of telehealth tools
8. Implement strategy to engage Nurse Practitioners in use of telehealth to strengthen and expand access to care;

Year 5 Targets:
50 new primary care Jabber users
50 new specialist Jabber users
All new PCH's are Jabber-enabled
Deployment of 25 new tools for self-reporting, home monitoring, virtual home visits
20 *First Nations communities have more virtual visits with specialists, or with a wider range of specialists*

Partners:
NH Communications, PPH, Patient groups, Healthlink, FNHA, AHICs,

Proposed Benchmarks for Goal 2: Make Telehealth Easier to Access
a) Number of virtual visits held through Telehealth, particularly for people who have barriers to accessing care
b) Number of survey participants indicating that they know about and can access virtual care or telehealth
c) Number of virtual visits between specialists based in the North and people living in FN communities
d) Number of households using self-reporting, home monitoring, virtual home care tools
e) Number of responses indicating that a useful tool functioned as expected

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Strategy 2: Create an enabling environment

Goal 3: Make it easier to use, adopt and spread new tools and uses of telehealth

Objective:
1. Develop reliable and adaptable infrastructure and systems. Issues likely to be addressed include:
   - Ensuring that expanded telehealth volume is supported by sufficient bandwidth and system capacity;
   - Support spread of tools through champions who can promote and provide training, suggestions and mentorship;
   - Share tools for patients and providers, such as linking to Ontario Telehealth Network's site that evaluates apps through a clinical lens

2. Create a well-known, easy to use and effective pathway for implementing and supporting new uses and technologies. Issues likely to be addressed include:
   - Enable providers to identify needs for new tools and uses and for those requests to be assessed, supported and spread across the North. Differentiate between tools needed to provide specialist (chronic disease management), primary care (diagnose and prescribe), and others (such as post-operative);
   - Involve clinical users in different therapeutic groups to lead the development of new tools, supported by the telehealth team.
   - Engage patients to understand what they want and need
   - Assess and develop innovations that support or improve current telehealth uses – such as upgraded camera resolution

Year 1 Deliverables
1. Develop a centralized and easily-accessed Pathway for providers with telehealth challenges, needs or ideas to propose them. Develop and share criteria and process for new tools to be requested, built and implemented
2. Engage providers in all clinical areas to identify desired tools, and suggest ways that Northern Health could develop and spread. Initiate development of a small number of new tools
3. Develop a framework for describing currently used tools and their optimal application. Initiate an inventory of known telehealth tools and processes in the North.
4. Involvement of teams leading the Integrated Chronic Diseases Pathway and development of Primary Care Homes.

Year 1 Targets:
1. *3 Tools in development to support Integrated Chronic Diseases Pathway and PCH's;*
2. *Map of bandwidth strength in the North and plan to collaborate to improve, especially where there are telehealth users responding to patient needs in those areas;*
3. *Identify 5 new tools or services based on provider or patient preferences*
4. *Develop or implement 3 new tools or services*

Year 2 Deliverables
1. Engage providers in all clinical areas to identify desired tools. Initiate development of a small number of new tools
2. Continue to identify and document currently used tools and consider application in response to problems identified elsewhere. Where possible, reduce development cycle time and costs;
3. Design or develop tools to support Chronic Diseases Pathway, PCH's and other clinical initiatives
4. Identify areas where bandwidth is strong and weak, and collaborate in efforts to upgrade bandwidth, connectivity and power sources
5. Provide online resource and presentation on available tools at Regional Conference

Year 2 Targets:
1. *Identify 5 new tools or services based on provider or patient preferences*
2. *Develop or implement 3 new tools or services*

Year 3 Deliverables
1. Engage providers in all clinical areas to identify desired tools, and suggest ways that Northern Health could develop and spread. Initiate development of a small number of new tools
2. Identify currently used tools and consider application in response to problems identified elsewhere. Where possible, reduce development cycle time and costs;
3. Involvement of teams leading the Integrated Chronic Diseases Pathway and development of Primary Care Homes.

Year 3 Targets:
1. *Identify 5 new tools or services based on provider or patient preferences*
2. *Develop or implement 3 new tools or services*
3. *Virtual visits occurring in two areas where bandwidth has been expanded in the previous three years*

Year 4 Deliverables
1. Engage providers in all clinical areas to identify desired tools, and suggest ways that Northern Health could develop and spread. Initiate development of a small number of new tools;
2. Identify currently used tools and consider application in response to problems identified elsewhere. Where possible, reduce development cycle time and costs;
3. Involvement of teams leading the Integrated Chronic Diseases Pathway and development of Primary Care Homes.

Year 4 Targets:
1. *Identify 5 new tools or services based on provider or patient preferences*
2. *Develop or implement 3 new tools or services*
3. *Virtual visits occurring in three areas where bandwidth has been expanded in the previous three years*
4. *Provide workshop on tools and brief consultations at Regional Teleconference*

Year 5 Deliverables
1. Engage providers in all clinical areas to identify desired tools, and suggest ways that Northern Health could develop and spread. Initiate development of a small number of new tools;
2. Identify currently used tools and consider application in response to problems identified elsewhere. Where possible, reduce development cycle time and costs;
3. Involvement of teams leading the Integrated Chronic Diseases Pathway and development of Primary Care Homes.

Year 5 Targets:
1. *Identify 5 new tools or services based on provider or patient preferences*
2. *Develop or implement 3 new tools or services*
3. *Virtual visits occurring in three areas where bandwidth has been expanded in the previous three years*

Partners:
Tele-kidney program, Integrated Chronic Diseases Team, PPH Resource Nurses and Regional Resources

Proposed Benchmarks for Goal 3: Make it easier to use, adopt and spread new tools and uses of telehealth
a) Number of ideas generated by Northern providers, reviewed and implemented by Telehealth Team;
b) Number of responses by providers and patients indicating that a useful tool resolved a problem and functioned as expected;
c) Patient and provider satisfaction with their engagement in development, implementation and support for use of tools;

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Goal 4: Build a foundation for telehealth that works for the North

Objectives:
a) Ensure that the Northern Telehealth plan supports longitudinal care and within that, optimal roles for primary care providers and specialists. Issues to address include:
   - Response to shortage of providers and lack of access to care for patients;
   - Improve conferencing to strengthen relationship between patient and longitudinal providers;
   - Within CQI research, assess optimal ways to support longitudinal care through telehealth;
   - Evaluate tools being used in the North and their reported impact on continuity;

b) Ensure telehealth provides value by assessing technology, risk, processes and resources allocation through the triple-aim lens. Issues to address include:
   - Build a financial case and metrics for evaluating telehealth
   - Identify and assess risks of investing in new technology;
   - Assess impact of nurses' independent role in using telehealth tools for monitoring, home care, etc.;
   - Develop patient-reported outcome measures to assess impact on quality and experience.

c) Ensure alignment of NH Telehealth with provincial policy and legislative frameworks.
   Issues to address include:
   - Privacy and other issues related to transferring patient data, texting and other emergent uses;
   - Leadership of and participation in policy development as implications of current and emerging tools become clear;
   - Collaborate with other health authorities to develop a set of generic quality indicators for telehealth.

Year 1 Deliverables
1. Carry out Continuous Quality Improvement Research project
2. Regional Manager participates in Health Authority collaborations and at provincial tables
3. Develop agreement to access data available through AMCARE, Ministry administrative data, and FNHA
4. Develop Jabber metrics to optimize investment,
5. Define triple-aim and develop tools to measure impact on health (different for specialist, primary care, surgeon, educator), impact on experience of care (relationship, suitability of tool, use of in-person and tele-), impact on sustainability (system, private practice and patient costs, environmental impact). Define triple-aim and develop tools to measure impact on health (different for specialist, primary care, surgeon, educator), impact on experience of care (relationship, suitability of tool, use of in-person and tele-), impact on sustainability (system, private practice and patient costs, environmental impact)
6. Update policies, standards and share with providers using telehealth tools
7. Develop process for assessing risks of new technologies

Year 1 Targets:
Sign-off on Evaluation Framework by TSC;

Data-sharing agreements or MOU signed with FNHA, AMCARE, Ministry
Principles, policy and procedures document for expansion of Jabber

Year 2 Deliverables
1. Carry out Continuous Quality Improvement Research project
2. Regional Manager participates in Health Authority collaborations and at provincial tables
3. Research and build evidence base for successful and impactful uses of telehealth in other jurisdictions and countries sharing characteristics of North (eg: Alaska, Northern provinces, Australia). This could include asynchronous, home monitoring, secure texting, etc.
4.   Engage PVN to develop evaluation framework and carry out ongoing evaluation and CQI
5. Plan and convene a Regional Conference for Telehealth in the North.
6. Using PCH as a model, develop a Regional plan for improving access to care despite provider shortages in the North

Year 2 Targets:
Participation in development of all new telehealth policies and regulations
Evaluation of first year following development of Evaluation Framework and Data Gathering plan
100 participants at 1.5-day conference

Year 3 Deliverables
1. Implement findings of Continuous Quality Improvement Research project
2. Regional Manager participates in Health Authority collaborations and at provincial tables

Year 3 Targets:
Participation in development of all new telehealth policies and regulations
Evaluation of 5 emerging telehealth tools

Year 4 Deliverables
1. Implement findings of Continuous Quality Improvement Research project;
2. Regional Manager participates in Health Authority collaborations and at provincial tables;
3. Plan and convene a Regional Conference for Telehealth in the North to involve stakeholders in evaluation and planning for the next Five-Year Plan;
4. Identification of potential tools to include in next Telehealth Five-Year Plan.

Year 4 Targets:
Participation in development of all new telehealth policies and regulations
Evaluation of 5 emerging telehealth tools
100 participants at 2-day Regional conference

Year 5 Deliverables
1. Describe the new environment and develop new Telehealth Five-Year Plan with involvement of stakeholders
2. Regional Manager participates in Health Authority collaborations and at provincial tables

Year 5 Targets:
Participation in development of all new telehealth policies and regulations
Evaluation of 5 emerging telehealth tools
New 5 Year Five-Year Plan

Partners: Tele-kidney Program Lead (user experience surveys), Population and Public Health (PHC team), Patient Voices Network (CQI), FNHA, Divisions of Family Practice, GPSC (fees and incentives)

Proposed Benchmarks for Goal 4: Build a foundation for telehealth that works for the North

a) Number of providers offering virtual care to provide longitudinal care, and number of visit that either create access to care (where there otherwise would be none) or which support longitudinal care;
b) Growth in implementation and use of telehealth by primary care homes;
c) Number of patients using telehealth to interact with a provider who is known to them;
d) Number of telehealth interactions for coordination of care and hand-offs.
e) Tools in use have been evaluated to ensure long-term benefit for providers, patients and NH;
f) Policies and standards are updated for all telehealth tools within months of new policy or legislation;
g) Providers are aware of the requirements for patient identification, consent and data security

Appendix B: Terminology

Term	Definition	Alternate term
Telehealth Videoconferencing	Live, direct and visual interaction using technology, between a patient and one or more providers. (FNHA, MoH)	Web-based visit or Virtual Visit
Administrative Videoconferencing	Live, direct and visual interaction using technology, for the purposes of managing or improving health care services.	
Educational Videoconferencing	Live, direct and visual interaction using technology, for the purposes of imparting information.	
Clinical Telehealth	Clinical telehealth uses videoconferencing and supporting technology to put patients and providers in touch with each other, overcoming barriers including distance, time, mobility and weather. Clinical uses of videoconferencing results in the activity being recorded in the patient's clinical record.	
Direct Care	An encounter for a clinical purpose where the patient and provider are both present.	Visit or encounter
Indirect Care	An encounter for a clinical purpose where providers are present but the patient is not.	
Telephone Visit	Live, direct and non-visual consultation between a patient and provider via telephone.	Telephone-based care
Telephone conferencing	A conversation via telephone where the patient is not present.	teleconferencing
Tele-triage or video-triage	Interaction with a provider for the purpose of assessing, evaluating and prioritizing a patient's symptoms via telephone or video.	811, Nurse Line
Virtual Care	Clinical services and core collaboration delivered and received over distance using a network of healthcare communication tools.	Tele-medicine
Home Health Monitoring	The use of technology to remotely monitor a patient's physiological status and related health conditions.	
Telepharmacy	The use of electronic information and communications technologies to provide and support pharmacy care when distance separates the participants.	
Telehealth Tool	Any device, technology or combination of these, that can be used to connect people using digital information and communication technology, such as computers, audio and video transmission.	

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Appendix C: Telehealth Steering Committee Members

- Dr. Ronald Chapman, VP Medicine NH
- Frank Flood, Regional Manager, Telehealth, NH
- Nancy Gabor, Sr. Strategic Planning Analyst, Telehealth, PHSA
- Dr. Ray Markham, Family Physician, E.D of Rural Coordination Committee, Chief of Staff, NH
- Angus Watson, Director of Client Services, Information & Technology Services
- Dr. John Pawlovich, Family Physician, Telehealth Lead for Rural Coordinating Committee
- Ciro Panessa, Director, Regional Chronic Diseases, NH
- Dr. Bill Clifford Family Physician, Chief Medical Information Officer, NH
- David Loewen Lead, Community Engagement, Education & Evaluation, Aboriginal Health, NH
- Dana Cole, Regional Director, Pharmacy Services, NH
- Mark Pelletier, Management Consultant
- Jennifer Begg, Executive Lead, Child and Youth Health, NH
- Jim Campbell, Executive Lead, Mental Health and Addictions, NH
- Megan Hunt, Interim Regional Director, FNHA
- Eyrin Tedesco, Director-Clinical eHealth Initiatives, FNHA
- Jeff Hunter, Chief Information Officer, NH
- Pam Mulroy, Project Management and Program Support, NH
- Steve Raper, Chief Communications and External Relations, NH
- Lauren Armstrong, Perioperative Registered Nurse, NH
- Candace Manahan, Executive Lead, Physician Quality Improvement, NH
- Dana Stephen – Telehealth Coordinator
- Dr. Anurag Singh, Medical Director - Kidney Services, NH
- Tracy McLellan, Director Mental Health and Addictions, NH
- Allison Claydon, Information Technology and Services, NH

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Appendix D: Draft Job Description for Clinical Engagement Role

JOB DESCRIPTION
Position: Clinical Engagement Lead
Company: Northern Health
Location: Prince George
Reports to: Regional Manager, Telehealth

The Clinical Engagement Lead provides clinical leadership, education and oversight to ensure that clinical areas are enabled and supported with the technologies, information and training required to deliver safe and effective healthcare – specifically virtual visits to Northerners. In this role, the Clinical Engagement Lead will work closely with the Regional Director, Telehealth, healthcare providers, FNHA, PHSA, Primary Care Homes and other stakeholders to assist in the maintenance of current and expansion of telehealth across all communities to ensure seamless mapping, matching and integration of services.

As an integral member of the Northern Telehealth Team, the Clinical Engagement Lead will actively participate in the successful development, implementation and mapping and matching of appropriate eHealth needs and technologies. The role is responsible for cultivating opportunities to engage clinicians and to design, promote and support use of tools. The Clinical Engagement Lead provides clinical training subject matter expertise at all stages of the initiative life cycle, translates clinical requirements and contributes to project planning, training development and implementation schedules. The role works closely with healthcare teams, providers and programs to develop and support the use of clinical telehealth technologies providing coaching and mentorship to ensure meaningful use within the practice setting.

This position requires an individual with discipline experience and knowledge in existing Regional Authority processes, workflows, referral patterns, program delivery methods, and IT systems and infrastructure. The successful candidate will be applying this expertise to the design, implementation, support and changes of FNHA community clinical information systems to enable new innovative models of care that result in the integration of all NH telehealth initiatives.

QUALIFICATIONS:
Education, Training and Experience
- Bachelor's degree in nursing or equivalent clinical background.
- A level of education, training and experience equivalent to a degree in Business Administration, Health Administration, Public Administration, Leadership. (Master's preferred)
- Minimum 7-years experience working in a healthcare environment, 5-years direct experience in acute care planning, delivering, and managing clinical operations and/or clinical systems facilitation, and recent related experience in project management, strategic planning, and patient and community engagement.
- Relevant professional development in areas of IT, process improvement, change management, and group facilitation.
- Experience developing and implementing community-care and provider based clinical readiness and needs assessments.
- Experience defining appropriate eHealth needs, mapping and matching appropriate services and technologies with community and provider needs.

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- Current practicing license with the College of Registered Nurses of British Columbia.

Knowledge, Skills and Abilities
- Demonstrated knowledge and ability in clinical health care practice, education and program planning, development, implementation and evaluation.
- Ability to guide, coach, teach and promote a learning environment and continuous quality improvement.
- Demonstrates an awareness of cultural safety and supports processes that lead to greater cultural safety throughout the continuum of health services.
- Strong documentation skills and demonstrated ability to develop detailed clinical or technical documentation, training aides and how-to documents, and track work activities or issues documentation.
- Intermediate computer skills and ability to work comfortably with spreadsheets, presentations, diagramming and word processing software (e.g. Microsoft Excel, PowerPoint, Visio and Word).
- Ability to foster innovation throughout complex evolutionary change.
- Ability to see connections between issues and events, and to think clearly around complex systems, bridging community issues and regional and provincial activities.
- Demonstrated strategic thinking and analytical skills.
- Proven ability to manage diverse groups and individuals through change initiatives and can resolve issues that arise throughout the process.
- Demonstrated expertise in facilitation, consensus building, networking, and liaison between multiple stakeholders.
- Excellent interpersonal and communication skills; ability to foster collaborative partnerships using a team approach.
- High level of motivation with a positive attitude and high degree of flexibility in a rapidly changing environment.
- Strong organizational skills and experience in project management; ability to organize and prioritize work and balance multiple activities concurrently.
- Ability to work independently and as part of a team.
- Ability and willingness to travel extensively throughout British Columbia.
- Physical ability to perform the duties of the position.

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