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Northern Telehealth Five-Year Plan

October 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 wellness 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. The Northern 5-Year Telehealth Plan focuses on telephone and video conferencing for live, direct interactions with a clinical, educational or administrative purpose, and secure messaging to support team-based care.

There is already a confluence of expertise, technology and demand for telehealth: NH has a strong technology infrastructure and years of experience with administrative, educational and clinical uses of telehealth.   Now NH proposes a five-year Plan that will create and enabling environment for expanding 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 help to achieve several of Northern Health's strategic goals by reducing the impact of distance and time in bringing health services to people and their families.   It supports the NH Strategic Plan by partnering with the First Nations Health Authority to improve access to primary and specialist care for First Nations and Aboriginal people.   The Plan will strengthen service flows for priority populations and conditions, including people living with chronic diseases, mental illness or addiction, as well as elders and people in need of perinatal or specialist child services. The Plan establishes Telehealth as an essential component of 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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- 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 initial review by NH Executive, the Draft Plan was shared with all Divisions of Family Practice operating in the North, with Medical Advisory Committees and to the IT, Technology and Education Committee of the Prince George Medical Staff Physician Association at UHNBC. The consultation primarily sought to ensure that the Telehealth Plan is supportive of, and does not conflict with initiatives that Northern clinical groups are carrying out or planning. The plan has also been reviewed by Executive and the Performance, Planning and Priorities Committee. Response to the Plan is uniformly positive, and the engagement phase generated many improvements, all of which have been considered by the Telehealth Steering Committee for incorporation into this document and the subsequent Implementation Plan.

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. As an enabling strategy, the Plan positions NH to leverage outside resources to catalyze expanded access to telehealth and a strong evaluation and reporting approach. Two sources of funding are currently being pursued to expand access to care for Northerners.

This Plan is being submitted on behalf of the Telehealth Steering Committee for review and approval by the Northern Health Board.

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 expanded 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.[1] 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 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 met to respond to several drafts of a Telehealth Five-Year Plan, providing feedback both through Committee teleconferences and individual telephone and videoconference meetings. Following the development of a draft plan, consultation was carried out with NH Executive and all the major clinical groups in the region, including:
- Medical Advisory Committees
- All Divisions of Family Practice operating in the North
- Prince George Medical Staff Physician Association at UHNBC

The purpose of the consultation was to ensure that the Plan is supported broadly, by the physician community. The response to the Plan has been uniformly positive. More specifically, the Plan is seen as proactive and forward-thinking, and supportive of all initiatives in process or being planned by these groups. In addition, continued dialogue with FNHA has surfaced

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

opportunities for collaboration on implementation and interoperability.

While the Telehealth Plan enables expansion of virtual visits across the North through changes in staffing, governance, clinical leadership and evaluation, additional resources are required to activate the plan. The next step (currently underway) is drafting an implementation proposal to leverage $500,000 that is being made available by the Joint Standing Committee on Rural Issues (JSC), alongside capacity and sustainability investments by Northern Health.

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:

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) Supporting service flows related to priority populations and conditions to improve access and continuity of 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 MoH. 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.[2] MSP billing codes incent the use of telephones or videoconference to substitute for in-person clinical visits.[3] 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.

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[2] Terms of Reference: Lower Mainland Virtual Care Collaboration Working Group
[3] Nancy Gabor, op. cit.

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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.[4] 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.

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.[5] 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.

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

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

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[4] British Columbia is seen as Canada's trail-blazer for online, 'virtual care. Canadian Healthcare Technology Nancy Gabor

[5] 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/

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itself, NH-scheduled uses of telehealth included 7,000 administrative, 230 educational and over 10,000 clinical instances. In First Nations communities over 6 months in 2016, 27 telehealth-enabled health centres facilitated 26 administrative, 30 educational and over 600 clinical telehealth encounters.   Carrier-Sekani Family Services also contracts to family physicians who provide longitudinal primary care almost exclusively through telehealth.   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.   This Plan focuses on an affordable and secure set of tools that can be installed on providers' and patients' devices while creating a framework for leveraging new technologies once they are proven.

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. The Committee has sought and received support for the Plan from all the major clinical groups in the North.

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. To ensure NH's success, this Plan includes a governance structure to support implementation and an evaluation and reporting approach to ensure accountability and impact.

Definition of Telehealth

Within the larger set of Virtual Care activities that enable information exchange without 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:

> **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 focus 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.

While the Plan responds to the current state of technology and readiness, it will also lead in a number of areas. 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

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.

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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. Finally, the 5-Year Plan will be assessed using CQI indicators and impact measures using an Expanded Triple-Aim approach that includes patient- and provider experience and outcome measures. The indicators will also track the quality of care delivered through telehealth, including generic measures and those specific to clinical areas.

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. **Longitudinal therapeutic 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. Telehealth will be delivered consistent with practice standards, and to ensure that telehealth delivers quality care and satisfying experiences for patients and providers alike;

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;

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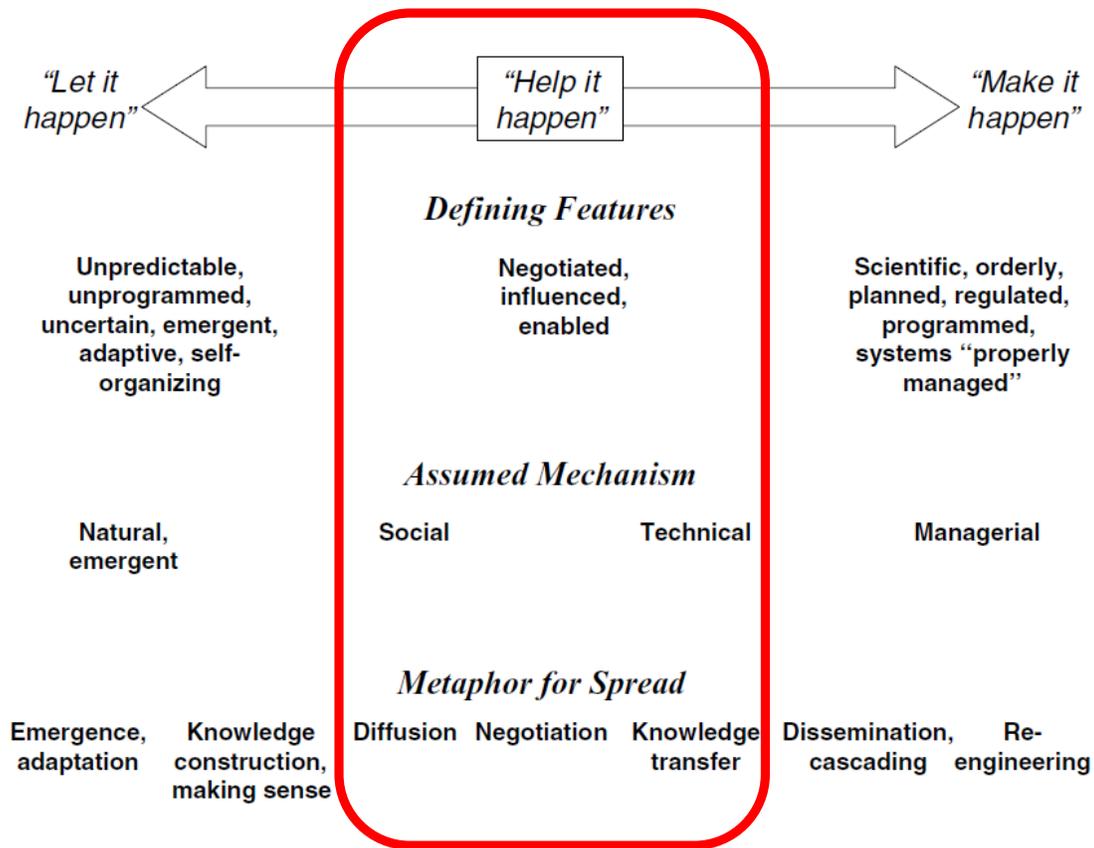
6. **Telehealth will improve access to care for Northerners.** Currently, many people in the North face barriers in getting timely access to the care they need, and telehealth can enable access to appropriate care provided within or outside the North.

7. **Telehealth will be delivered consistent with the patient's best interests.** Removing the challenge of distance and time will enable patients to receive care from anywhere in the province. Referral and patient flow patterns will be made in a manner consistent with the needs of patients and with long-term human resources planning for the North.

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	
Unpredictable, unprogrammed, uncertain, emergent, adaptive, self-organizing	Negotiated, influenced, enabled	Scientific, orderly, planned, regulated, programmed, systems "properly managed"
	Assumed Mechanism	
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. Secure financial and other resources to activate the Plan, and follow through on any accountability or reporting requirements;
6. Engage stakeholders across the North to ensure that the Plan is responsive to patient, provider and community needs;

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7. Identify, adopt or develop standards for clinical visits delivered through Telehealth, and promote and evaluate the quality of care and experience. This includes generic standards related to timeliness, continuity and appropriateness as well as standards specific to each area of clinical care;

8. Identify, adopt or develop standards for new technologies before promoting or spreading;

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

10. Develop and share best practices for telehealth referrals from the perspective of the patient, and within the context of long-term health human resources planning for the North;

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

> **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.

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

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

NH's success in executing the Five-Year Plan will flow from leveraging its own and outside 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. 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.

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.

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.

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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 expanded triple-aim lens.

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

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Functions, Roles and Governance

During the process of developing the 5-Year Plan, Executive sponsorship was provided by Dr. Ronald Chapman, and the Telehealth Steering Committee provided advice. Following the development of a draft, an engagement process enabled clinical groups, Executive, and many others to provide input that improved the responsiveness of the Plan to the needs of clinicians across the North. Several changes are being planned to support a successful implementation phase.

Clinical Telehealth Governance Model

Critical to the success of the Telehealth Plan is a governance model to ensure that policy development, management, decision-making and monitoring functions are attended to properly.   A revised approach to governance is needed for several reasons:

1. Deeper relationships with outside agencies and other health authorities, such as an ongoing integration of efforts with FNHA (at an operational level), other health authorities (for planning), Provincial collaborative committees (for funding and alignment) and the Ministry of Health (for policy);
2. More internal collaboration with the Analytics and Reporting Department for planning and reporting, Primary and Community Care Department for integrating telehealth into Primary Care Homes and IT for data gathering.
3. Requests for targeted reporting to Executive, Board and committees to ensure that telehealth implementation supports the Strategic Plan and regional initiatives;
4. Streamlining the advisory Telehealth Steering Committee to support implementation and management phases.
5. Deeper relationships with Divisions, Departments, MACs and Medical Staff Associations will likely be more important to ensure that telehealth implementation is responsive to physicians and interdisciplinary teams.

Currently, the Telehealth Steering Committee is developing a governance operational model that will include structures and processes to enable decision-making, planning, management and reporting.   Once the TSC has agreed to a model that best meets the needs of NH for a successful implementation, it will be brought to the Executive for discussion.

Telehealth Department

The Telehealth Department will have three overall areas of focus:

1. 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;

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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.

2. 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.

3. 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. The evaluation approach will generate data to guide continuous quality improvement, decision-making and incorporate key Telehealth measures into the NH KPI structure, in collaboration with the Analytics and Reporting Department of NH.

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

Changes to Telehealth Department

The Telehealth Plan lays out a path for the roles and responsibilities of the Telehealth Department for the foreseeable future.   Instead of adding numerous roles, the Telehealth Department is completing a review of roles, provide greater clarity to job descriptions. To enable the expansion of clinical telehealth to new communities, patients and providers, there will be a **net new addition of 1 full-time-equivalent position, to be funded from outside funding**. Key changes to be made in the Telehealth Department to support the Plan include:

Integrating clinical leadership into the Telehealth Department
Telehealth Department will create and add 1 fte role: Clinical Engagement Lead. The net new role will have no budgetary impact for NH during the first two years of the plan, at which point the Telehealth Department will assess the need for the role to continue.

Aligning roles of team with telehealth goals and departmental reorganization
NH is in the process of integrating Telehealth and Communications into a Unified Communications Department. To facilitate this and to align roles with the Telehealth Plan, two job descriptions (Bridge Operator and Scheduler) will be combined into a Unified Communications Operator role. Another role (Unified Communications Analyst) will be created to design and plan telehealth tools and ensure sufficient capacity in the system to support growth in videoconferencing. The Analyst role will replace another job description, so this change will have minimal budgetary impact for NH.

Telehealth Department Roles to Implement 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. 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.

Unified Communications Analyst

Analyze and plan technology applications, workflows for particular clinical settings, working collaboratively with the Clinical Engagement Lead. Plan and design system and network

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improvements that enable sufficient capacity and robustness to support the telehealth needs of the North.

Unified Communications Operator

Provide training to clinicians and MOAs in set-up and operation of videoconferencing, messaging and other tools. Assist with scheduling as well as responding to ongoing needs of the team and internal clients and partners.   Monitor bridges to reduce interruptions in videoconferences. Assess the state of equipment and refresh technology according to schedule and as needed, to minimize failure rates of videoconferencing equipment.

Clinical Engagement Lead, Telehealth

Lead outreach, promote telehealth utilization, engage clinicians and support the development and implementation of customized clinical communications tools that support the NH Telehealth Plan.   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.

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Financial Support the 5-Year Plan

The Telehealth Five-Year Plan sets out principles and high-level goals for the expansion of videoconferencing and other supporting technologies across the North. For the first two years of the plan, the NH contribution will be addressed through NH's operational budgeting process. Financial resources from outside sources are being sought to catalyze the plan so that more communities, providers and patients are accessing clinical care through videoconferencing. There are two categories of investments that will enable the expansion of telehealth will include:

Operational staffing including one new position:
At a staffing level, the plan for enabling greater access to and use of Telehealth is happening at the same time as an internal reorganization that will combine Communications and Telehealth into a new Unified Communications Department.   Accordingly, several positions will be revised to enable more responsiveness to clinical telehealth issues, a deeper level of complexity in planning and support for a system with greater capacity for a greater number of hours daily. There will be a minimal budgetary impact of these changes, which will be covered through regular operational processes.

In addition to restructuring current roles, one net new position will be added to the team for the duration of the plan. The new role (Clinical Engagement Lead) will work directly with clinicians to develop, expand availability and access, and support adoption and utilization of telehealth across the north.   The funding to cover this role is being sought through the Joint Standing Committee

Capacity Improvements in 2017-2022:
Increasing the number of clinical telehealth visits happening at any time, will require additional system capacity.   The Telehealth Department is testing technology solutions that will enable over 100 concurrent videoconferencing interactions happening at any point in time.   The testing will have two phases: one to ensure that the technology has the capacity to handle the increased volume of videoconferencing, and the other to ensure that the tool enables videoconferencing of sufficient quality and reliability to satisfy clinicians and patients. Funding for increasing the capacity of telehealth will is being sought from the Joint Standing Committee on Rural Issues

The Telehealth plan seeks to install videoconferencing tools on the devices of clinicians rather than building new videoconferencing suites, so NH will continue to operate and update existing suites within normal budgetary processes.

Revenue Sources
1. **Northern Health Budget** for maintaining telehealth capacity and creating an enabling environment for expansion in the North.   This includes continued investment in staffing,

tools and capital equipment, such as refreshing videoconference suites.   The Plan does not anticipate any new costs for NH for the next two years.

2. **Outside revenue sources** from project and related capital grants for activities included in the Plan. This includes a funding proposal to the Joint Standing Committee on Rural Issues for increasing system capacity and purchasing licenses for telehealth tools, and funding for evaluation framework development and implementation. Outside sources are anticipated to be more than $500,000.

Delivering Value for Northern Health

Northern Health has made significant investments in Telehealth, and has measured the impact of clinical interactions at a distance, such as:

- reductions in distance travelled for patients;
- reductions in carbon dioxide emissions;
- patient perception of quality of visual and audio connection;
- patient levels of satisfaction with clinical interactions provided through telehealth.

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

1. **Increased access to telehealth is in place.** The Plan will make videoconferencing tools available to 500 additional clinicians, including family physicians, specialists, pharmacists and nurses. 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 improved service flows for priority populations and conditions. An early area of focus will be complex chronic diseases, collaborating with key members of the Regional Chronic Diseases Team in the development and targeting of Telehealth for those living with complex chronic disease(s);
- Improving the accessibility of primary care to First Nations and remote communities, by engaging with First Nations communities;

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- 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:

There is a foundation of ongoing and more recent work, upon which an evaluation and reporting framework is being built:

1. The Telehealth Department already collects information about scheduled virtual visits, including estimations of reduced travel and carbon emissions;
2. The Northern Tele-Kidney Program has been piloting the use of patient-related experience and outcome measures;
3. The NH Analytics and Reporting Department is working with the Telehealth Department to generate and integrate measurable for Telehealth as part of its overall work in reporting on NH activities;
4. An event was held in Prince George called "**Reporting on the Impact of Using Telehealth.**" Many of the leaders in telehealth participated in that event, and generated principles and ideas that can be integrated into the 5-Year Plan.

Guiding principles for Evaluation

- Indicators and measures should align with NH Key Performance Indicators (KPIs), the 5-year plan, and the expanded triple aim;
- Measures should be as streamlined, minimal, and easy for patient and providers to complete;
- Measures should be standardized for ease of comparisons.

Purposes of the Telehealth Evaluation Framework

There are two main purposes for the Telehealth evaluation framework, each with its own set of measures:

1. **Continuous Quality Improvement.** As the Telehealth Department receives additional resources to expand the reach of clinical telehealth, the plan will need to be adjusted to ensure that it can achieve its goals. The CQI measures are designed to inform the Telehealth Department about:
   a. The extent to which the implementation is achieving its goals. This will enable the team to know how successful it is being and identify key areas where the Department needs to pay more attention;
   b. Issues arising that enable or reduce the Department's ability to achieve the targets for the plan. This information will help the team to analyze unexpected difficulties and address them.
2. **Impact and Reporting.** Given the ongoing investment in Telehealth by NH, it is important to transparently report on the impact of its efforts, seen through the Expanded Triple-Aim lens.

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Report Card Approach to Evaluation

Evaluation of telehealth is an evolving field, and NH has considered many different approaches to evaluation. The TSC has been considering an expansive list of desired measurable that could be gathered, but to manage the potential cost and workload, the Telehealth Department will build its framework around a Report Card approach that narrows the field of data points to focus on the information needed to make decisions about telehealth.

The Report Card approach will use the expansive list of indicators as a starting point. These have been gathered through consultation with the Telehealth Steering Committee and other clinical groups, approaches that are currently used to assess patient satisfaction with tele-kidney care, and meetings held in the North on the topic of telehealth reporting. This list includes CQI measures, Expanded Triple Aim indicators and others related to the standard of care available through telehealth. This list of indicators has been compared to the KPIs that NH Executive receives, to dovetail the evaluation of Telehealth with ongoing evaluating and reporting practices.

From the longer list of potential indicators and measures related to the Expanded Triple Aim, key decision-makers will be asked to identify the information they need to manage and plan for telehealth expansion and reporting. This will create a secondary list of data that needs to be gathered to enable decision-making as part of the management and governance model.

Starting point for Evaluation Framework

As described above, the development of an evaluation framework is in process. To this point, the following data points / indicators have been identified as useful in planning, management and reporting for Telehealth in the North:

1. Progress Measures (CQI)

a) Number of NH-operated Primary Care Homes using telehealth at least once per month;
b) Number of community-based Family Physicians using telehealth at least once per month;
c) Number of Specialists using telehealth at least once per month;
d) Number of interdisciplinary provider interactions through telehealth per month;
e) Number of virtual visits for patients with barriers;
f) Number of households using self-reporting, home monitoring, home dialysis, and other virtual home care tools;
g) Number of pilot projects or prototypes and number of physicians and collaborative partners involved
h) Rate of adoption, growth in use among primary care homes;
i) Number of patients who get the care they need through telehealth
j) Average length of time to resolve technical issues following a ticket;
k) Reduction in kilometres travelled due to telehealth visits;
l) Kilograms of CO_2 avoided due to telehealth visit;
m) Reduction in patient expenses avoided due to telehealth visit.

2. Impact and Reporting.

Expanded Triple-Aim Evaluation

1. **Patient well-being:**
   a. Self-reported reduced travel time, distance, costs and stress;
   b. Self-reported avoidance of time off work;
   c. Self-reported health improvements as a result of one or more clinical visits delivered through telehealth;

2. **Patient and provider experience of care:**
   a. Provider and patient-reported satisfaction with quality of telehealth visit, including ease of setup and use;
   b. Number of responses by providers and patients indicating that their telehealth visit resolved a problem;
   c. Number of responses by providers and patients indicating that they were able to see and hear the other clearly;
   d. Number/rate of responses by providers and patients indicating that they were satisfied with their telehealth experience;
   e. Number / rate of patients reporting that access to telehealth saved them from having to travel;
   f. Number / rate of patients reporting that access to telehealth saved them from having to pay for travel expenses.

3. **System sustainability including:**
   a. Impacts on revenue of provider in delivering care through telehealth;
   b. Provider- reported reduction in number of cancelled appointments vs. in-person (could be a ratio no-shows for telehealth vs. in-person visits);
   c. Clinician-reported impact on workload and work-life balance of provider;
   d. Impact on clinician professional satisfaction with ability to deliver quality care to patients;
   e. Reduction in kilometres travelled, carbon dioxide emissions and vehicle accidents / fatalities;
   f. 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.

Patient Reported Outcomes Measures

a) Number of responses by providers and patients indicating that a clinical visit received through telehealth resolved a problem;

b) Patient reporting of disease-specific indicators showing improved symptoms or improvements in overall well-being following their telehealth clinical interaction.
c) Self-reported reduction of stress due to not travelling

Clinician Reported Outcomes Measures
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;
c) Number of providers using telehealth for interdisciplinary communication who state that their roles are clear and that virtual visits are satisfying and rewarding;
d) Number of non-physician providers who feel that telehealth enables them to work at or close to, optimal scope;
e) Number of providers responding that the scheduling process is not a barrier to them providing interdisciplinary virtual visits
a) Number of responses indicating that a telehealth tool functioned as expected.

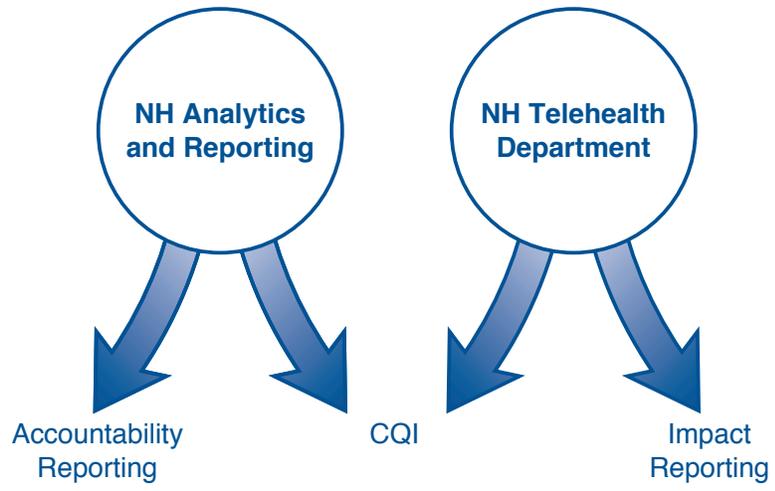## Generic Indicators of Quality of Care
In addition to CQI and an Expanded Triple-Aim set of measurable, the Telehealth Plan will evaluate telehealth against a set of indicators of quality that are generic to the provision of care, and which may incorporate specific indictors of quality for any disease area:

a) Number of patients who say they knew what to expect during their telehealth visit;
b) Number of providers who are aware of and follow requirements for patient identification, consent and data security;
c) Number of patients who say their privacy was respected;
d) Number of patients who say they were satisfied with their Telehealth visit;
e) Number of patients who say telehealth has allowed them to have more regular follow-up for their condition;
f) Number of providers reporting that telehealth clinical interactions enable them to deliver care consistent with practice standards;
g) Number of telehealth interactions used for coordination of care, hand-offs or increasing the capacity of family physicians to treat illness.

Evaluation Process
The evaluation approach – Report Card - is currently in development. Data gathering and analysis will have two branches: one will be related to impact measurement and reporting to NH Executive, which will be led by NH Analytics and Reporting, using data and feedback surveys. The other will be led by the Telehealth team, using surveys, feedback and data at their disposal. Currently, the Telehealth Department and NH Analytics and Reporting are working together to integrate their efforts to inform both CQI and Impact / Accountability reporting

NH Analytics and Reporting

NH Telehealth Department

Accountability Reporting

CQI

Impact Reporting

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.);
- Adapt 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

f) Number of current telehealth tools and processes reported to be working as needed, and to be easy to use, convenient and reliable;

g) 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";

h) 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

i) Number and range of clinical areas where telehealth tools and processes are assessed and improved;

j) Number of interdisciplinary providers stating that their roles are clear and that virtual visits are satisfying and rewarding.

k) Number of providers responding that the scheduling process is not a barrier to them providing interdisciplinary virtual visits.

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;
   - Emerging but incomplete referral resources such as Pathways and Northern RACE;
   - 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. Create a package of telehealth tools that could include one or more virtual visit tools, secure texting tools and (as available) patient records transfer tools. The package offered to clinicians would include support in adoption and risk management, installation, training and evaluation;
2. Develop and share best practices for referrals through telehealth starting with the patient's interests and considering issues such as urgency, timely access, cultural competence and proximity of specialist;
3. Identify opportunities to pilot projects involving specialists to support people in remote and FN communities, and engage community-based FN health staff. Promising projects will be developed in three areas:
   a. Youth tele-psychiatry;
   b. FP resident teaching and GP capacity-building in tele-dermatology;
   c. Expansion of availability of internists to Emergency Departments in the North.
4. Install Telehealth in NH-operated Primary Care Homes and support the use of these tools to reach isolated and First Nations communities
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. Integrate Telehealth expectations and supports into the NH approach towards recruitment of locums and planning NITAOP-funded visits by practitioners;
8. 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:

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5 new primary care clinical virtual care users
5 new specialist users

Year 2 Deliverables
1. Promote, install, train, support providers to use videoconferencing tools
2. Through Divisions, identify family physicians interested in providing telehealth to FN communities
3. Identify process for implementing 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 after one year.

Year 2 Targets:
25 new primary care users
25 new specialist users
All new PCH's are 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 videoconferencing tools
2. Implement self-reporting, home monitoring, virtual home visit tools
3. Build and continually update a directory of providers who provide telehealth visits. May be integrated with Pathways
4. Build capacity for physicians to work with lay people who support patients
5. Assess utilization after one year

Year 3 Targets:
50 new primary care users
25 new specialist users
All new PCH's are enabled to provide clinical virtual care
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 clinical virtual care tools
2. Assess utilization after one year
3. Implement self-reporting, home monitoring, virtual home visit tools

Year 4 Targets:
50 new primary care users
25 new specialist users

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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 videoconferencing tools
2. Assess utilization after one year
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 users
50 new specialist users
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
b)   Number of virtual visits held through Telehealth, particularly for people who have barriers to accessing care
c)   Number of survey participants indicating that they know about and can access virtual care or telehealth
d)   Number of virtual visits between specialists based in the North and people living in FN communities
e)   Number of households using self-reporting, home monitoring, virtual home care tools
f)   Number of responses indicating that a useful tool functioned as expected

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 and primary care services;
   - 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. Identify, implement and maintain the most appropriate and impactful role for increasing bandwidth for communities with barriers to access in-person care;
3. 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
4. Develop a framework for describing currently used tools and their optimal application. Initiate an inventory of known telehealth tools and processes in the North.
5. Involvement of stakeholders leading the development and implementation of an Integrated Chronic Diseases Service Flow and development of Primary Care Homes.

Year 1 Targets:
1. *3 Tools in development to support Integrated Chronic Diseases Flow 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 an expanded 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. Identify gaps in provincial fee structure that inhibit the optimal provision of longitudinal care, including interactions between family physicians, specialists and interdisciplinary providers;
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, and integrate the data into the Telehealth evaluation framework;
4. Develop metrics to optimize investment,
5. Define expanded 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 clinical virtual care

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

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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

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Appendix B: Terminology

Term	Definition	Alternate term
Telehealth Videoconferencing	The use of live videoconferencing to facilitate clinical consultations, continuing professional education and administrative collaboration over distances	• Room-based video conferencing • Enterprise video conferencing Web-based video conferencing
Administrative Videoconferencing	The use of live videoconferencing to facilitate administrative collaboration over distances	
Educational Videoconferencing	The use of live videoconferencing to facilitate continuing professional education	
Clinical Telehealth	The use of live videoconferencing to facilitate clinical consultations between patients and providers over distances	
Direct Care	The provision of care to a patient requiring interaction be tween the patient and the health care provider. Direct care may be provided in-person or using telecommunications technologies	Visit or encounter
Indirect Care	Services that are related to patient care but do not requir e interaction between the health care provider and the patient. Indirect care may be provided in-person or using telecommunications technologies	
Telephone Visit	Patient and provider clinical encounter which is carried out by telephone and documented in the patient medical record.	Telephone-based care
Telephone conferencing	A conversation via telephone where the patient is not present.	teleconferencing
eConsultation	Asynchronous digital clinical consultation between health care providers. Allows physicians to engage in a secured, electronic dialogue with specialists to manage patient care, without the need for face-to-face visit	
Tele-triage	Telephone triage, or teletriage, is a service in which health professionals provide health care advice and information, via telephone, to clients who initiate calls about health concerns.	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.	
ePrescribing	The use of computing devices to enter, modify, review, and communicate drug prescriptions.	

Term	Definition	Alternate term
Telehealth Tool	Any device, technology or combination of these that can be used to connect people using telecommunications technology, such as computers, audio and video transmission.	
Endpoint	A System is a single configuration of hardware and/or software based videoconference equipment, with or without digital diagnostic devices, identified and accessed using with a unique digital address. A System may be fixed (immovable), or mobile (on a cart, software, web-based) Hardware based endpoints may include • "**Fixed**" videoconference systems such as those installs in dedicated rooms, or dedicated, smaller videoconference solutions that sit on a desk or table. • Also included in hardware based systems are "**mobile**" telemedicine carts. Software based systems refer to applications installed on computer "**desktops**". This category is sometimes referred to as a "desktop solution".	
Virtual Care Platform	A plug-and-play clinical business model that allows multiple participants (health care providers and consumers) to connect to it, interact with each other, and create and exchange value.	
Scheduling	In the context of telehealth and/or virtual care "scheduling" refers to the act of booking resources required for an event to take place at a particular time. Resources that may require booking can include rooms, technical infrastructure, peripheral devices, or human resources for the purposes of clinical service delivery or technical support.	
Interoperability	In healthcare, interoperability is the ability of different information technology systems and software applications to communicate, exchange data, and use the information that has been exchanged.	
Health Information Privacy & Security	Data Privacy and Data Security are symbiotic domains and processes used to protect private, personal information. In the context of personal information, concepts of privacy are closely intertwined with those of confidentiality and security. However, although privacy is often used interchangeably with the terms	

Term	Definition	Alternate term
	"confidentiality" and "security," they have distinct meanings. **Privacy** pertains to the collection, storage, and use of personal information, and addresses the question of who has access to personal information under what conditions. **Confidentiality** addresses the issue of how personal data collected may be held and used by the organization that collected the data, what other secondary or further uses may be made of the data, and when the permission of the individual is required for such uses. **Security** refers to the procedural and technical measures required to (a) prevent unauthorized access, modification, use and dissemination of data stored or processed in a computer system, (b) to prevent any deliberate denial of service, and (c) to protect the system in its entirety from physical harm.	

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
- Nicole Cross, 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
- Candice 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 clinical 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.