THE UNIVERSITY
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Digital Emergency Medicine
Department of Emergency Medicine
Faculty of Medicine

Real-Time
Virtual Support

Year-End Report 2023-24

Real-Time Virtual Support & Learning Health System: Evaluation Report

Prepared by:
UBC Digital Emergency Medicine

The Real-Time Virtual Support logo was designed by Doug (Bear) Horne, the son of master carver Doug Lafortune from Tsawout First Nation and Kathleen Horne from Pacheedaht First Nation. Doug grew up in the Tsawout community and, since early childhood, has been immersed in Coast Salish art, learning from his father, uncles and family members who have generously shared their knowledge and expertise with him. He has dedicated over 25 years to creating Coast Salish art in various forms.

There is meaning behind the logo created by Bear. Hummingbirds symbolize messengers, healers, and peace. They also help guide and support us through challenges. The sun, meanwhile, represents life-giving abundance with warmth—a provider of healing energy and peace.

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KEY MESSAGES

- This year, the increased usage of Real-Time Virtual Support (RTVS) pathways highlights progress towards the learning health system's (LHS) outcome to improve access to physician services in rural, remote, First Nations, and other Indigenous peoples and communities.
- RTVS pathways have increased access to physician services among individuals experiencing disadvantages across all four domains of the Canadian Index of Multiple Deprivation (CIMD)[1] with unique distributions for each pathway.
- Most RTVS pathways show increased call volumes and share a dedicated focus on relationship-building with communities.
- Strong efforts have been made towards building trust with communities and improving the integration of RTVS with existing in-person services.
- With over 33% of the First Nations Virtual Doctor of the Day (FNvDOD) pathway providers self-identifying as Indigenous and 100% retention of Indigenous staff from the previous fiscal year, the pathways led by the First Nations Health Authority have made significant strides in addressing inequities from underrepresentation of Indigenous health care providers in BC's health systems.
- All RTVS partners state that they value culturally safe care and kindness in their virtual care provider recruitment materials.
- Collectively the RTVS partnership is a positive enabler of health systems innovation, exemplified by the ability to provide MRP coverage, prevent emergency department closures, accelerate appropriate ED use, create virtual care hubs to connect patients with specialists and specialty services while saving them the time and cost of travel, and managing high-priority access to life-saving treatments.
- Further evaluation of the quality and reciprocity of internal and external RTVS relationships is recommended along with gaining an in-depth understanding of the barriers, facilitators and community context around RTVS use and expansion.

EXECUTIVE SUMMARY

Real-Time Virtual Support (RTVS) is a learning health system (LHS) partnership of virtual physician services including peer-to-peer support pathways (i.e. RUDi, RUDi-MRP, MaBAL, and CHARLiE) and client-facing (FNvDOD, FNvSUPS, HEiDi, and CATe) virtual care pathways. The RTVS-LHS FY23/24 report shows that RTVS pathways can shift the distribution of access to physician services across multiple dimensions of the Canadian Index of Multiple Deprivation (CIMD). Compared to BC's overall population, RTVS served more clients with disadvantages in their economic dependency and situational vulnerability domains of the CIMD (RUDi, MaBAL, FNvDOD). CHARLiE and FNvSUPS pathways improved access for clients with relative disadvantages in their situational vulnerability. HEiDi shifts the distribution for clients with disadvantages in their residential instability and ethnocultural composition. Access by CATe

[1] Statcan.gc.ca. *The Canadian Index of Multiple Deprivation: User Guide, 2021*. Released: November 10, 2023. Catalogue no. 45200001. ISBN 978-0-660-48997-1. https://www150.statcan.gc.ca/n1/pub/45-20-0001/452000012023002-eng.htm

clients was weighted towards individuals with relative disadvantages in the economic dependency dimension of the CIMD.

Increased call and encounter volumes were observed across most pathways: RUDi increased encounter volumes by 22% relative to last year and has now been adopted in 55% of BC's priority Rural Subsidiary Agreement "A" (RSA-A) communities. The RUDi-MRP service provided over 1600 hours (approximately two months) of coverage in 11 RSA-A communities, while MaBAL and CHARLiE also expanded in Northwest BC. MaBAL's outreach efforts were centered on gaining alignment with community context through relationship-building, although it was not possible to measure overall call and encounter volumes due to a structural shift in RUDi overflow calls. CHARLiE expanded by a 16% increase in encounters in FY23/24. The FNvDOD and FNvSUPS encounter volumes also increased, by 1% and 13% respectively, and the services continue to run at full capacity. HEiDi encounter volumes increased by 18% compared with FY22/23. Due to changes in COVID-19 presentations, the CATe pathway experienced a reduced demand for encounters in FY23/24.

Outreach activities were a priority focus for RTVS administrators, who report that building relationships with communities has aided in their understanding of the context needed to support RTVS usage where needed or desired. Barriers and facilitators center on the quality of relationships and good coordination with existing health services that are external to RTVS. Facilitators of RTVS include leveraging the reputation the collaborative partnership has built as health system innovator.

All RTVS partners state that culturally safe care was valued in their staffing materials and over 74% of all RTVS virtual physicians who were active in FY22/23 were retained for at least a year. The FNvDOD pathway had full (100%) retention of all 29 physicians who have been staffing the program from the previous fiscal year. FNHA-led pathways were also exemplary in their ability to recruit and retain Indigenous healthcare providers: 33% of all FNvDOD and 8% of all FNvSUPS self-identified as being Indigenous and 100% were retained for at least a year.

Interviews with patients and caregivers who have experience with HEiDi suggest that the client-facing service reduces stress and anxiety by meeting their informational needs. Interviewees note that the service may also contribute positively to cultural safety in healthcare by eliminating some of the visual bias patients may experience with in-person care. Areas for improvement include accurate communications to patients about wait times and leveraging the potential to coordinate with in-person services.

Collectively, RTVS acts as a positive enabler of access to physician services and health systems innovation. This has been exemplified by the ability to prevent ED closures, accelerate high-priority health concerns such as ED arrivals through pre-hospital triage, and access to life-saving treatments through eligibility risk selection such as the CATe process for delivering medicine to high-priority groups and the creation of virtual hubs connecting patients to specialists and specialty providers. These enablers are linked to economies of scale through resource and knowledge sharing offered by the RTVS partnership with relationships as its foundation. Ongoing evaluation of the quality and reciprocity of RTVS relationships is recommended along with gaining a deeper understanding of the barriers, facilitators, and community surrounding RTVS use and expansion.

Health Data Platform BC Disclaimer

Regarding findings derived from the HDPBC environment, all inferences, opinions, and conclusions drawn in this publication are those of the author(s), and do not necessarily reflect the opinions or policies of the data stewards. This work was enabled by the British Columbia Ministry of Health with data access provided by the Health Data Platform BC (DARs 20-190 and 21-117).

PEER-TO-PEER PATHWAYS

Pathway	Findings	Progress towards outcomes and objectives	Recommendations for RUDi, MaBAL, CHARLiE, RUDi MRP
RUDi (Rural Urgent Doctor in-aid)	• Increased call volumes by 22% and encounters by 25%; a total of 18,169 calls and 5,680 encounters in FY23/24. Fewer spillover calls since FY22/23. • Increased uptake in RRFNI communities, reaching 108 communities (including 43 First Nations). The number of RSA-A communities increased from 61 in FY21/22 to 81 in FY23/24. 25 communities (including 13 RSA-A) accessing the RUDi in FY22/23 did not use the service in FY23/24, with a net increase of seven new communities adopting RUDi in FY23/24. • The majority of encounters were initiated by nurses (76%), trending away from the majority of physician users in previous years. • The main reasons for the call were aimed at addressing the patient's musculoskeletal, gastroenterological, and cardiovascular concerns, a 2% decrease in substance-related encounters YOY. • Encounters lasted an average of 52 minutes, with 22% extending for over an hour. The majority of calls occurred via text messages. • Health care providers used RUDi to support care for patients who were on average 49 years old and predominantly female (57%). • YOY shifts towards younger demographics and more female patients. • 77 active physicians serving the peer pathways in FY23/24 were retained for at least a year; 25 (32%) have been retained for two years and 11 (14%) have been retained for at least three full years now. • RUDi shifted the distribution of access towards individuals with disadvantages across economic dependency and situational vulnerability CIMD domains compared to BC's overall population.	• Operational capacity and access have improved. • RUDi pathways increase healthcare access in rural and First Nations communities. • The service is flexible and responsive to community-specific needs. • Community engagement and adoption in new areas. • Culturally safe care practices have been implemented. • Increased accessibility for female and younger demographics. • Growth in usage suggests the service's value. • CIMD domains: This indicates progress towards increasing access to physician services.	**1. Continue to expand to other rural, remote and Indigenous communities. Prioritize communities based on need and readiness (e.g., RSA-A communities). Develop a phased implementation plan. Ensure necessary technical infrastructure and training.** Context: Recognizing the challenge and importance of integration, the focus should be on system and community integration by working closely with health authorities (HA) and Primary care Networks (PCNs) and enhancing awareness about RTVS pathways. Ensuring the integration of peer pathways into the health system with sustainable funding for quality improvement and sustainability planning is ideal. Technological barriers, such as unreliable internet connections and lack of necessary technology, must be addressed to ensure access to services. **2. Continue multi-method outreach activities and relationship building. Conduct interviews with communities that do not use RTVS to understand barriers (technological and social determinants, mixed method approach).** Context: Enhancing awareness and outreach to rural residency sites and supporting nurses and First Nations communities is essential. Including RTVS information in onboarding materials and using pathways created by First Nations ensures equitable access. Addressing technological and social determinants of health, such as community readiness, is important. Engaging with HA structures can improve outreach efforts. **3. Continue and expand culturally safe training. Measure the representativeness of healthcare providers. Update recruitment, onboarding and training materials regularly. Include feedback from RRFNI communities. Monitor and evaluate training effectiveness.** Context: Embedding cultural safety into practices, including mandatory cultural competency training, is vital. This approach

Pathway	Findings	Progress towards outcomes and objectives	Recommendations for RUDi, MaBAL, CHARLiE, RUDi MRP
RUDi-MRP (Rural Urgent Doctor in-aid Most Responsible Provider coverage)	• 1,070 calls and 269 encounters in FY23/24. • 1600 hours (about two months) of MRP services provided. • RCCbc leads the way in virtual nurse-physician collaborations to keep rural EDs open. • Main client concerns were musculoskeletal and gastroenterological. • Encounters lasted an average of 127 minutes, with 26% extending over 2 hours. • The patients were, on average, 44 years old, approximately evenly split by sex (53% female). • Supported 12 RRFNI communities, 11 of which were designated as RSA-A communities.	• Planned MRP support and coverage are effective. • Engagement in RSA-A communities. • Extended care needs addressed for high-priority communities.	ensures culturally safe and appropriate care. Mandating certain physician requirements and including cultural safety and humility in performance goals for all staff ensures the actions are measurable. 4. **Implement feedback mechanisms for continuous improvement.** Context: Implementing feedback mechanisms to ensure continuous improvement aligns with the emphasis on responsiveness and respectful service delivery. Continuous feedback helps in adapting services to meet community's needs.
MaBAL (Maternity and Babies Advice Line)	• MaBAL expanded in Northwest regions. • Data limitations limited the ability to comment on changes in encounter and call volumes. Apparent YOY calls were (1,365, -18%) and encounters (543, -10%) n FY23/24 compared to FY22/23. This was likely due to structural changes in RUDi with the addition of the Front Door, thus fewer calls were re-directed. • Expanded context to include sexual healthcare with embedded cultural safety practices, leading to expanded partnerships, addressing community needs, and trust-building. • Supported nurses (56%) and physicians (43%) in RRFNI communities, 11% increase in gynecological/ obstetrics concerns. • MaBAL shifted the distribution of access across economic dependency and situational vulnerability domains of the CIMD.	• Service scope has expanded, aligning with cultural safety and community needs. • Decrease in call and encounter volumes need investigation regarding impact of RUDi and Front Door changes. • Focus on community engagement and building relationships, which are important for culturally safe care and tailoring services based on community needs. • CIMD domain: improved access across economic dependency and situationally vulnerable domains of CIMD.	
CHARLiE (Child Health Advice in Real-time Electronically)	• Increased coverage in Northwest communities, increased calls (3,011, +24%) and encounters (1,366, +16%) in FY23/24 compared to FY22/23. • Used primarily by physicians (78%) in RRFNI communities needing pediatrician peer support. • Main concerns were respiratory, infectious/communicable, dermatology, musculoskeletal, and gastroenterology. there was a	• Increased access to pediatric care in rural and remote areas. • Significant increase in call and encounter volumes. • Support for physicians with pediatric care needs. High utilization by physicians	

Pathway	Findings	Progress towards outcomes and objectives	Recommendations for RUDi, MaBAL, CHARLiE, RUDi MRP
	5% decrease in calls regarding infectious/communicable diseases YOY. • Encounters lasted an average of 48 minutes, with 18% extending over an hour. There was a higher proportion of video calls. • The pediatric patients were, on average, 6 years old, evenly split by sex (53% male). • Supported patients from 92 RRFNI communities, predominantly RSA-A communities. • Increase in access from 63 rural CHSAs in FY21/22 to 115 CHSAs in FY22/23. • CHARLiE shifted the distribution of access for clients with relative disadvantages in CIMD's situational vulnerability domain.	indicates the importance of specialized consultations. • Increase in encounters suggests service is expanding. • CIMD domains improved access to physician services across situational vulnerability domains of CIMD.	

PATIENT-FACING PATHWAYS

Pathway	Findings	Progress towards outcomes and objectives	Recommendations for FNvDOD and FNvSUPS
FNvDOD (First Nations Virtual Doctor of the Day)	• Stable volumes and encounters, with 11,846 encounters in FY23/24, a 1% increase from the previous year. • Service staffed by 33 virtual physicians with 100% retention of providers from the previous fiscal year. • Encounters lasted an average of 29 minutes, with a mean of 2.8 encounters per client. • The majority of clients were female (64%) and aged 30-39 years (21%), consistent with previous fiscal years. • Predominantly served clients from the Interior, Northern, and Vancouver Island health regions (76%), trending increase in urban versus rural clients. • Emphasis on recruiting Indigenous healthcare providers, with 33% of the physician staff self-identifying as Indigenous. • FNvDOD shifted the distribution of access for clients with relative disadvantages in their situational	• FNvDOD provides equitable access to culturally safe primary care. • Stable usage and high retention of providers. • CIMD domains: increasing access to physician services across economic dependency and situational vulnerability CIMD domains.	**1. Continue to maintain standard excellence in cultural safety and humility and continue leading the way in documenting the representation of Indigenous healthcare providers and retaining them. Update training materials regularly and include feedback from communities. Monitor and evaluate training effectiveness regularly.** Context: Embedding cultural safety and humility into recruitment training and provider support ensures alignment with organizational values and effectiveness. Regular feedback from Indigenous communities is essential. **2. Engage with communities to understand barriers and facilitators of engagement and integration with in-person services.** Context: Strengthening community engagement involves understanding and addressing barriers. This may be obtained through interviews, needs assessments and relationship building. **3. Work closely with FNHA on data access to ensure data sovereignty and adherence to Ownership, Control, Access, and**

Pathway	Findings	Progress towards outcomes and objectives	Recommendations for FNvDOD and FNvSUPS
	vulnerability and economic dependency CIMD domains.		**Possession (OCAP) principles and respect Indigenous communities' data governance.** Context: Ensuring respectful and ethical use of data according to OCAP principles is vital for promoting health excellence and respecting community autonomy. Collaborative efforts with FNHA are essential for addressing what is feasible in terms of data sharing and governance.
FNvSUPS (First Nations Virtual Substance Use and Psychiatry Service)	• 13% increase in encounters, from 1,952 in FY22/23 to 2,207 in FY23/24. • Encounter lengths averaged 39 minutes, with 3.81 encounters per client. • The majority of clients were female (62%) and aged 20-49 years (80%). • Served clients across BC, with the highest percentage from the Northern health region (28%). • Higher percentage of non-Indigenous clients compared to FNvDOD. • 8% of all FNvSUPS providers self-identified as being Indigenous. • FNvSUPS shifted the distribution of access relative to BC's overall population across Residential instability and situational vulnerability domains of CIMD.	• FNvSUPS provides culturally safe virtual care for substance use and psychiatric services. • Increase in encounters and client engagement. • Focus on culturally safe care. • Increase in usage indicates importance and need. • CIMD domains: increasing access to physician services across residential instability and situational vulnerability CIMD domains.	

Pathway	Findings	Progress towards outcomes and objectives	Recommendations for HEiDi and CATe
HEiDi (HealthLink BC Emergency i-Doctor in Assistance)	• Supported 53,965 8-1-1 callers in FY23/24, an 18% increase from FY22/23. • Patients were, on average, 37 years old and predominantly female (61%). • The majority of patients were considered attached to a primary care physician using a past history of three same provider encounters and had at least one chronic disease. • Patient's report feeling reassured and less anxious after using HEiDi. Many cite it as a patient-centered alternative to attending ED. • There may be some advantages in cultural safety by avoiding biases against physical appearance that patients may experience with in-person care. • Trending upward rate of follow-up with a family physician; concordance with the discharge disposition: "See MD Now" is 78%, Go to ED Now and Schedule Appointment is 70%, and Home Treatment is 38%. • HEiDi shifts the distribution for clients with disadvantages in their residential instability and ethnocultural composition CIMD domains. There was a noticeable shift for pediatric clients with disadvantages in their ethnocultural composition CIMD domain. Older adults who used HEiDi had advantages measured by the ethnocultural composition CIMD domain.	• Supports high-urgency callers and diverts patients from emergency departments. • Increased usage, high patient satisfaction, and positive experiences indicate the service's value and effectiveness. • Focus on patient-centred care supports engagement and quality service delivery. • HEiDi shifts the distribution for clients with disadvantages in their residential instability and ethnocultural composition. More representation by pediatric-age clients with disadvantages in their ethnocultural composition domains is partially offset by representation of clients with advantages in their ethnocultural composition.	**1. Expand HEiDi and CATe Services, broaden regional access** Context: Expanding HEiDi services addresses the need for broader service access and improved coordination. This is important for both urban and rural areas, reflecting the observed increase in encounters and triaged patients in regions like Northern and Vancouver Island. The decrease in CATe service requests and encounters indicates a need for a strategic approach to expanding CATe services and a better understanding of any external policies or guidelines implemented. **2. Enhance efforts towards Culturally Safety and Humility Training and measure Indigenous representation and retention among healthcare providers. Maintain and expand any ongoing training programs. Regularly revise training content based on patient feedback to ensure relevance and effectiveness. Regularly evaluate the impact of training programs to ensure continuous improvement.** Context: Regular updates to training materials based on patient feedback are essential for maintaining effective provider training. The increased volume of encounters and high-urgency patients triaged by HEiDi underscore the necessity of continuous and thorough training for providers. **3. Strengthen Community Engagement. Enhance outreach initiatives to raise awareness, build relationships and engage communities. Understand community-specific barriers and facilitators. Undertake interviews with communities with low HEiDi/CATe use.**

Pathway	Findings	Progress towards outcomes and objectives	Recommendations for HEiDi and CATe
CATe (COVID Antiviral Treatment e-team)	• Decreased encounter volumes post-pandemic, with 7,935 clinical encounters in FY23/24, a 58% decrease from FY22/23. • Providers spent longer with patients, with shorter wait times. • 68% of patients were eligible (a significant YOY increase). 53% of all CATe patients received a Paxlovid prescription within 7 days, and 97% of eligible patients received a prescription. • On average, patients were 66 years old, predominantly female (59%), from urban areas (77%), and attached to a primary care physician (85%). • Most encounters are from urban CHSAs. Vancouver Island and rural Northern CHSAs have the most encounters by population. • Access by CATe clients was weighted towards individuals with relative disadvantages across the residential instability and economic dependency dimensions of CIMD relative to BC's overall population.	• Decreased encounter volumes post pandemic. • Provided antiviral treatments efficiently with reduced wait time. • Improved access to high-priority patient groups.	Context: Effective community engagement and addressing misconceptions are crucial for responsive service delivery. Understanding community needs and enhancing engagement through technology and direct interaction ensures that services are tailored and effective.

LIST OF ABBREVIATIONS

Abbreviation	Definition
ADHD	Attention Deficit Hyperactivity Disorder
BC	British Columbia
C2C	Consultation to Conversation
CATe	COVID Antiviral Treatment e-team
CHARLiE	Child Health Advice in Real-time Electronically
CHSA	Community Health Service Area
CIHR	Canadian Institutes of Health Research
CIMD	Canadian Index of Multiple Deprivation
COVID-19	Coronavirus Disease of 2019
CPS	Clinical Production Specialist
ED	Emergency Department
EMR	Electronic Medical Record
ER	Emergency Room
FNHA	First Nations Health Authority
FNvDOD	First Nations Virtual Doctor of the Day
FNvSUPS	First Nations Virtual Substance Use and Psychiatry Service
FP	Family Practice
FY	Fiscal Year
GDP	Gross Domestic Product
GP	General Practice (or Practitioner)
HDPBC	Health Data Platform BC
HEiDi	HealthLink BC Emergency iDoctor-in-Assistance
HLBC	HealthLink BC

KDR	Knowledge-base and Decision Record
KSD	Knowledge Sharing Day
LHS	Learning Health System
MaBAL	Maternity and Babies Advice Line
MD	Medical Doctor
MOCAP	Medical On-Call Availability Program
MOIS	Medical Office Information System
MRP	Most Responsible Provider
MSP	Medical Services Plan
PP+	Partnership Pentagram Plus
RCCbc	Rural Coordination Centre of BC
REEF	Rural Emergency Enhancement Fee
RRFNI	Rural, Remote, and First Nations and other Indigenous peoples and communities
RRP	Rural Retention Program
RSA	Rural Subsidiary Agreement
RSA-A	Rural Subsidiary Agreement "A" communities
RTVS	Real-Time Virtual Support
RUDi	Rural Urgent Doctor in-aid
SII	Slope Index of Inequality
UK	United Kingdom
VC	Virtual Clinic
VP	Virtual Provider
YOY	Year-over-year