Promising practices to support retention of the healthcare workforce in northern, rural and remote communities in Canada

If you are looking for promising practices used in northern, rural, and remote communities in Canada to improve access to safe, high-quality, team-based primary care, then this promising practice will be of interest to you.

Virtual Triage: An Approach to Supporting On-Call Community Health Nurses

What is the promising practice?

The virtual triage program was designed to provide respite for on-call community health nurses (CHNs).

Key messages and components of the promising practice

- To maintain 24/7 access to care in community health centres (CHCs), community health nurses are responsible for providing on-call services, which can be exhausting and stressful.
- The Department of Health developed the virtual triage program to provide respite for on-call CHNs.
- A team of virtual CHNs and nurse practitioners (NPs) who had previous experience working in Nunavut with Canadian Triage and Acuity Scale (CTAS) training (mandatory for CHNs and optional for NPs) were hired to support the community's on-call services. The virtual CHNs and NPs are currently covering two to three communities each night with an average of 10 to 15 calls per shift.
- The virtual CHNs and NPs providing this service either reside in territory or out-of-territory.
- The CHCs are eligible for virtual triage support (such as respite support for the CHNs) if they are in emergency services due to nursing staff shortages. Ad hoc requests for virtual triage support are also accepted based on increased patient volume and acuity.
- The results of a pilot study demonstrated that a significant number of after-hours calls could be ably managed by the virtual triage service. With regional and senior leadership support, funding was identified within the CHC budget to support this project as a sustainable program.
- Advanced care paramedics (ACPs) have been added to provide on-call services through the support of the virtual triage program.

Context

To maintain 24/7 access to care in CHCs, CHNs are responsible for providing on-call services. On-call services operate Monday to Friday from 17:00 to 08:30, along with Saturday and Sunday from 08:30 to 08:30. Covering on-call during the night can be exhausting to the nurse who experiences constant disruptions to their sleep. It can also be very stressful since any incoming call can be an emergency. The Department of Health sought to develop an intervention to support CHNs providing on-call services that would improve their sleep and overall well-being.

Approach

The Department of Health developed the virtual triage program, designed to provide respite for on-call CHNs. To begin the journey, a three-month pilot project (from January to March 2022) was designed and operated by the chief nurse office in collaboration with clinical operations and the innovation team. The early discussions on this project focused on understanding our main objectives, the scope of this service, developing policy and guidelines, mapping out the workflow, developing the evaluation, etc. On completion of the pilot project, an evaluation was presented to the regional leadership team, which were in favour of continuing the virtual triage service.

The next steps were to determine how we could leverage this virtual triage service beyond being a pilot and into a sustainable program to continue this support to our CHCs. A working group was established with key stakeholders and included the chief nursing officer team, assistant deputy minister of operations, regional directors and executive directors along with the CHC closure logistics team. The goal was to develop an implementation plan and work through each challenge or barrier. The team worked on a tight timeline to operationalize this service before the summer 2022 critical staffing period. We were able to meet this deadline and began using this service more broadly and in time for summer.

A team of virtual CHNs and NPs who had previous experience working in Nunavut with CTAS training (mandatory for CHNs and optional for NPs) were hired to support the community's on-call services. The virtual CHNs and NPs providing this service either reside in territory or out-of-territory. The on-call patient phone line is forwarded to the virtual CHN or NP from 20:30 to 08:30, who triages all incoming calls. The virtual CHN or NP will activate the CHC CHN to see the patient and confirm the patient has met a CTAS score of one to three (defined as resuscitative, emergent, or urgent) or met our "must-see criteria" (refer to Appendix A). About four or five CTAS presentations (defined as less urgent or non-urgent), non-clinical calls and miscellaneous calls (such as wrong numbers) are all deferred, to ensure the CHC CHN's sleep is not interrupted. Electronic telephone triage forms are completed on all triaged patients and emailed in real time to the CHC CHN on-call and CHC supervisor. The virtual CHN or NPs attend the CHC morning huddle for an update on the triaged clients.

Weekly updates on the virtual triage services are discussed at Territorial Health Centre Closure Task Force meetings. During implementation the allocation of the virtual service was prioritized to communities in need. Between May 1, to December 31, 2022, a total of 733 virtual triage shifts were covered to support the CHCs and front-line healthcare providers. We continue to grow our virtual CHN and NP team to meet the needs of our CHCs.

The CHCs are eligible for virtual triage support (such as respite support for the CHNs) if they are in emergency services due to nursing staff shortages. Ad hoc requests for virtual triage support are also accepted based on increased patient volume and acuity.

Challenges

- Although there was no designated funding for this program at the outset, through engagement with the regional leadership team, we were able to work through this barrier to financially support this program.
- There were no existing human resource (HR) pathways to employee remote CHNs out-of-territory. Through engagement with our Assistant Deputy Minister of Operations and HR we were able to work through this barrier and support virtual CHNs with out- of-territory employment.

Anticipated outcomes

Immediate outcome:

- Improved sleep and respite during the CHC CHN on-call shift because of the decreased number of phone calls waking the nurse up.
- Decreased stress and anxiety of the CHC CHN on-call as a result of knowing that incoming calls are first being triaged, including during emergencies when the virtual CHN or NP service takes care of the logistics and calls in available nurses when required.
- Improved patient care as a result of less phone call interruptions when the CHC CHN is assessing and treating a patient (for example no disruptions during a sterile procedure such as suturing).

Ultimate outcome:

- Improved retention, less burn-out and staff feeling supported.

Evaluation and outcomes

Three-month pilot project evaluation

A three-month pilot project was held January to March 2022. The results of the pilot study (see below) led to regional and senior leadership support and funding was identified within the CHC budget to support this project as a sustainable program.

Figure 1: Virtual triage data summary

Community	# of Nights of virtual triage	Total number of calls	Average # of calls per night	% of calls that needed to be seen by nurse on call (must see List, Canadian Triage and Acuity Scale 1-3)	% of calls not requiring nurse on call (AKA respite)
Igloolik	**6**	**23**	**3.8**	**35%**	**65%**
Sanikiluag	**15**	**27**	**1.8**	**52%**	**48%**
Baker Lake	**22**	**95**	**4.3**	**21%**	**79%**
Rankin Inlet	**7**	**30**	**4.3**	**43%**	**57%**
Kugluktuk	**46**	**152**	**3.3**	**41%**	**59%**
Cambridge Bay	**44**	**157**	**3.6**	**31%**	**69%**
Kugaaruk	**4**	**23**	**5.7**	**9%**	**91%**
Taloyoak	**43**	**179**	**4.2**	**30%**	**70%**

Figure 1 represents the total number of calls were recorded for all communities that participated in the three-month pilot project. These calls were divided into two categories: 1) Calls which led to the CHC CHN being activated to see the patient; and 2) calls that were deferred and allowed the CHC CHN to sleep. The percentage of calls were then calculated to illustrate the amount of respite for the CHC CHN.

Figure 2: Direct comparison of virtual triage vs CHC triage

Community	# of nights of measured	Total number of calls	Average # of calls per night	% of calls that needed to be seen by nurse on call (must see list, Canadian Triage and Acuity Scale 1-3)	% of calls note requiring nurse on call (AKA respite)
Kugluktuk* (Virtual Triage)	22	65	2.5	40%	60%
Kugluktuk** (Community Health Nurses Triaging)	31	49	1.6	73%	27%

* Data collected from January 1 to 31, 2022
**Data collected from December 1 to 31, 2021

Figure 1 represents a head-to-head comparison evaluation completed for one community. We were able to determine the efficiency of virtual triage compared to CHC triage. Figure 2 illustrates the percentage difference in respite between virtual triage and CHC CHN triage. This data not only shows deferred phone calls to the CHC CHN, but also a decrease in the number of patients that needed to be seen overnight.

Twelve-month evaluation

Quantitative and qualitative data was collected as part of a 12-month evaluation. The focus was to determine if the percentage of deferred phone calls waking up the CHC nurse on call were still being maintained, along with understanding satisfaction and impact on retention.

Figure 3: Virtual triage data summary (12-month post implementation)

Region	Total number of calls	Total number of calls not needing to be seen	Percentage of calls not needing to be seen
Qikiqtaaluk	330	162	49%
Kivalliq	25	11	44%
Kitikmeot	209	110	53%
Total	564	283	50%

Figure 3 represents the total number of calls recorded for all communities receiving this service over the December holiday critical staffing period. The data continues to illustrate the ongoing success of this service, which is demonstrated by the high percentage of deferred phone calls not needing to awaken the CHC CHN.

Table 1: Survey results

Questions	Strongly agree	Agree	Neutral	Disagree	Strongly disagree
During my on-call shift with virtual triage nurse, I was able to have better quality and long sleep.	48% (12)	48% (12)	4% (1)	0% (0)	0% (0)
My anxiety of being on-call decreased as a result of being supported by the virtual triage nurse.	36% (9)	44% (11)	20% (5)	0% (0)	0% (0)
I feel less burnt out and exhausted when being supported by the virtual triage nurse.	60% (15)	32% (8)	8% (2)	0% (0)	0% (0)
While being supported by the triage nurse, the patients that I saw overnight were appropriate and needed to be seen (such as quality triage).	52% (13)	36% (9)	8% (2)	4% (1)	4% (1)
I feel supported by my organization to provide me with this service.	64% (16)	28% (7)	8% (2)	0% (0)	0% (0)
This is an important service to continue in order to support and retain front line nurses.	68% (17)	20% (5)	8% (2)	0% (0)	0% (0)
How would you overall rate the virtual triage program?	9.04/10 (from 25 respondents)				

Table 1 captures the response from a survey targeted to first on call CHNs, NPs, and ACPs while being supported by the virtual triage program. All feedback was unanimously positive and highlights the importance of this service on retention. A few quotes provided are also captured below:

- “This service provided very appropriate triaging and avoided unnecessarily seeing patients that could wait until morning or next day. I feel this is an amazing service to continue to provide to decrease of stress and nursing burn-out.”
- “The virtual triage program has been integral in maintaining on call coverage and providing rest for CHN's during reduced staffing.”

- “The virtual CHNs and NPs were great with their communication. On one particularly hard shift we had three medevacs waiting to go out in the clinic with our two ACPs. One patient who was not deemed urgent called multiple times during the night, insisting on being seen now and our virtual nurse handled the caller professionally. They were asked to come first thing in the morning each time. This was a huge blessing for me, as I would have had to answer that call four or five times. We are already overworked and pulling overtime on our day shifts when staffing is short, so it means a lot to have this available during our nights.”

Key success factors (why is it working?)

Department of Health promoting innovative projects

- The Department of Health continues to be very supportive with exploring innovative ideas that improve patient care and to support our staff. The virtual triage pilot project and now program would not have succeeded without the support of regional and senior leadership. Significant challenges such as out-of-territory nursing employment and funding were resolved with their support.

High quality virtual CHN and NP employees

- All virtual CHNs and NPs have previous Nunavut rural and remote CHC experience and were CTAS trained. This allowed for quality triaging which led to appropriate care being provided and the best possible respite support for our CHC CHNs.

Dedicated project managers

- Behind the scenes of this successful program is a team of individuals working diligently to ensure every community is supported, even last-minute requests. Ongoing weekly meetings are arranged focusing on continuous quality improvement, employment, and onboarding virtual CHNs and NPs, developing policy and guidelines, project management, etc.

Flexible IT support

- Health IT manages numerous ongoing requests for call forwarding to the virtual CHN/NP and made themselves readily available after hours to often assist with last-minute requests. We have since transitioned to smart phones in the CHC where call forwarding can occur at the community level, however Health IT being supportive and flexible was instrumental.

Support from the CHC CHNs

- The success and growth of the virtual triage program can also be attributed to the overwhelming number of requests and the stated appreciation for this service. Within months we were doubling and tripling the number of communities we were supporting

daily. Requests for virtual support over the December 2022 holiday period even reached as high as 12 communities during one shift. The appreciation CHC CHNs have for this support will continue to drive expansion of the program.

Next Steps

With the success of the virtual triage program, we have been exploring additional pathways to have this program evolve to meet additional operational and clinical needs and most importantly, continue to pursue all efforts to support our front-line healthcare providers. Examples include:

- We have developed supports where a virtual NP can provide triage coverage for a community while an in-community ACP is on-call. If the NP activates the ACP to see the client and the presentation is lower in acuity, the NP then actively collaborates with the ACP providing care to that patient and assists with a diagnosis and treatment orders. This model has been shown to be successful and is available during CHC closures when no nursing staff are present.
- We have also developed a 24/7 virtual triage service during CHC closures. This is an essential component that enables safe healthcare services during CHC closures. Features of this pivotal service include:
    - In-community staffing by ACPs during a closure provides an additional avenue for patients to access care. It is out of the scope of practice of the ACPs to perform an initial triage. With the virtual triage provided by the 24/7 virtual CHN and NP triage service, we can appropriately staff CHC closures with paramedics.
    - Alleviating the triage burden of CHC staff during a CHC closure when CHNs are not available. The remaining CHC health are providers can prioritize their time to the hands-on patient care they are able to provide.
    - Arranging for the virtual CHNs and NPs to organize patient scheduling for acute episodic telehealth medical doctor and nurse practitioner (NP) clinics based on triaged calls.

Cost

We have not yet conducted a cost comparison analysis to examine the cost of scheduling a virtual CHN or NP versus the cost savings from all deferred CHC CHN overtime. However, there are several considerations that have let us believe it would roughly break even.

- The virtual CHNs and NPs are currently covering two to three communities each night with an average of 10 to 15 calls per shift. The triage pilot evaluation had an average deferred phone call rate at 67 percent. This directly leads to averted overtime phone calls that can be invoiced.
- Due to the quality of virtual triaging, we are also able to defer patients from being seen in the middle of the night leading to further averted overtime. Reflecting on Figure 2, 73

percent of CHC CHN triaged calls led to the patient being seen overnight, whereas 40 percent of virtual triaged calls led to the patient being seen overnight.

- Given that we are using this service as an adjunct to support CHCs in emergency services when short nursing staff, the cost of using this service would not exceed the CHC's budget as they are not paying the full complement of nurses.

Measuring progress (how do we know retention is improving)

Reports from staff suggest there is less burn-out, higher work satisfaction, a general feeling of support and improved retention from the integration of this program. The virtual triage service can be adapted universally to rural and remote communities across Canada by supporting frontline nurses on call.

For more information

To learn more about the Virtual Triage approach, contact Robert McMurdy, Nurse Practitioner Consultant, Department of Health, NU (RMcMurdy@gov.nu.ca).

Appendix A: Must see criteria

- All infants under the age of one.
- All clients whose condition is determined to:
    - require resuscitation
    - be emergent
    - be urgent
- All pregnant women.
- All women up to two (2) weeks postpartum.
- All clients aged 65 and older.
- All clients who were discharged in the last 48 hours from the hospital or care facility.
- All clients who had a surgical procedure under general anesthetic within the previous 10 days.
- All clients who had an endoscopic procedure (gastroscopy or colonoscopy) within the previous three (3) days.
- All clients with complex medical condition(s).
- All clients who had multiple visits or multiple calls to the health centre in the previous 72 hours with the same presenting complaint(s).
- All clients in custody of the RCMP when an officer contacts the health centre regarding a health concern of a detainee.