



Evaluation of Real Time Virtual Support for Rural Emergency Care

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Objectives

1. Pilot real-time, on-demand virtual care
2. Facilitate timely access to high-quality, coordinated team-based care
3. Evaluate impact of virtual care on:
 - Health outcomes
 - Patient/provider experience of care
 - Costs
4. Evaluate process of introducing virtual care into routine usage



Background: Robson Valley

- Pilot sites in McBride and Valemount
- Five general practitioners (GPs) in call group
- 90 km between communities
- Emergency room in both communities



- Referral site: Prince George emergency department

Challenges

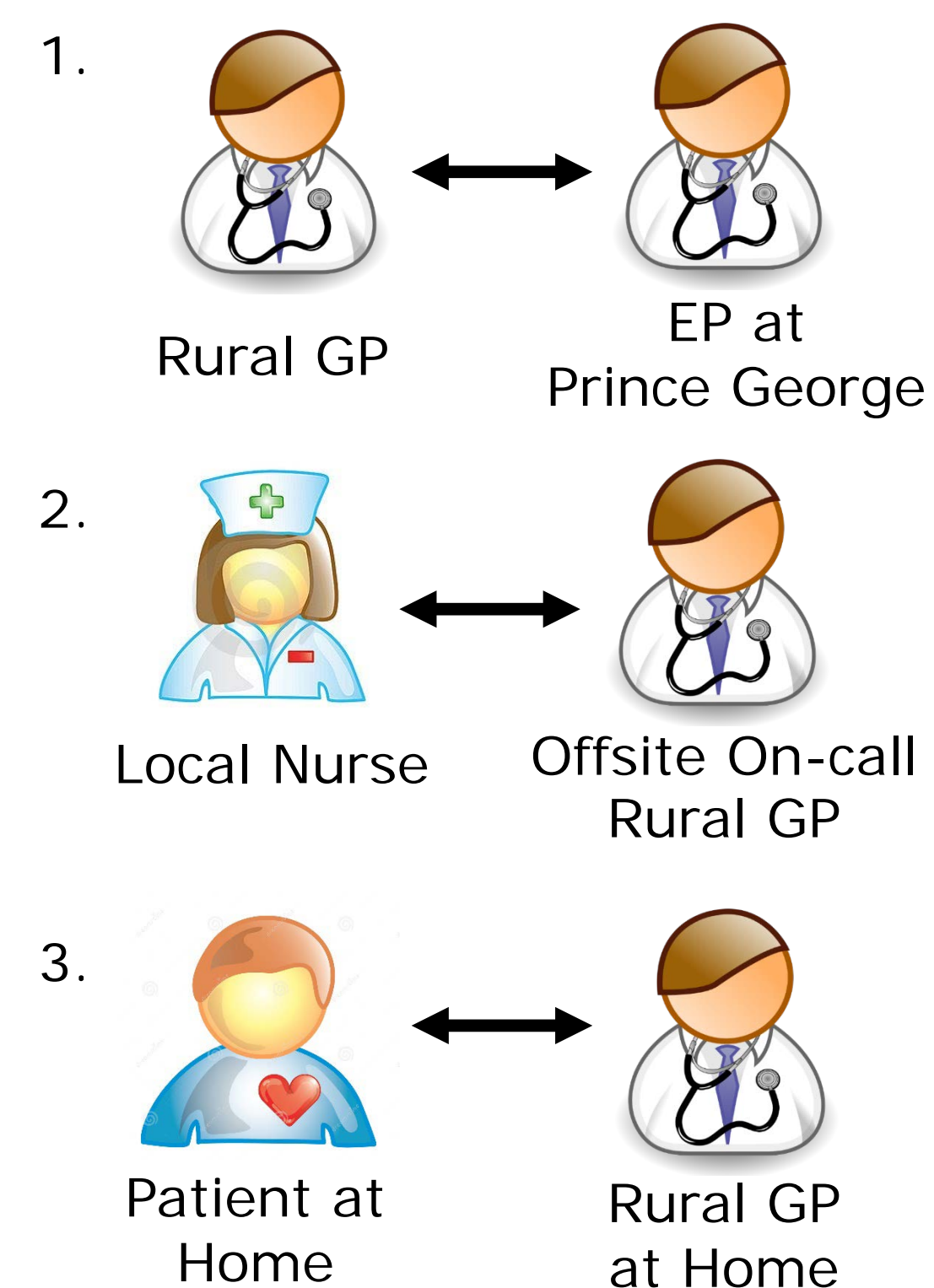
- After hours, both communities covered by 1 alternating GP on-call
- Long travel distances for patients seeking medical care
 - Patients frequently transferred to Prince George
 - Costly to health system and patients
 - Presents risk, especially in winter driving conditions
- Two recent deaths on the road travelling to medical appointments

Design and Measures

Virtual Care

1. Bedside cart videoconference (VC)
2. Desktop videoconference
3. Secure text messaging

Consults between

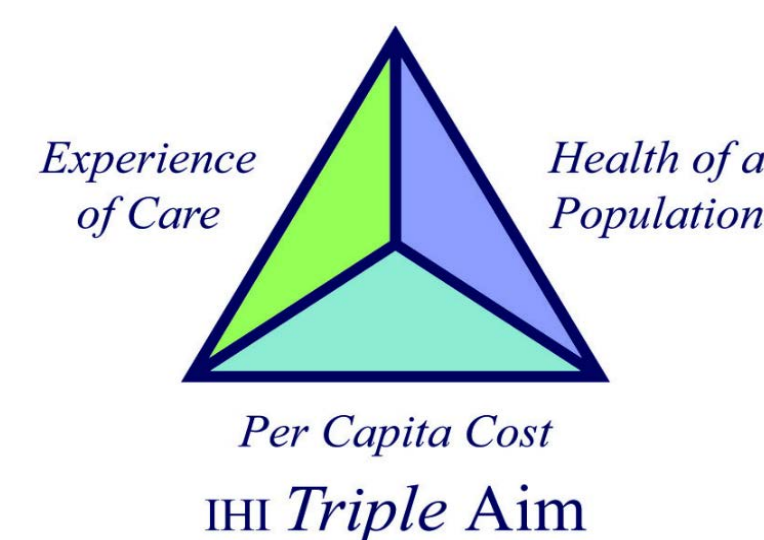


Participants

- Patients
- Rural GPs, Nurses
- Emergency physicians (EPs) at regional site (Prince George)

Evaluation Framework assessed:

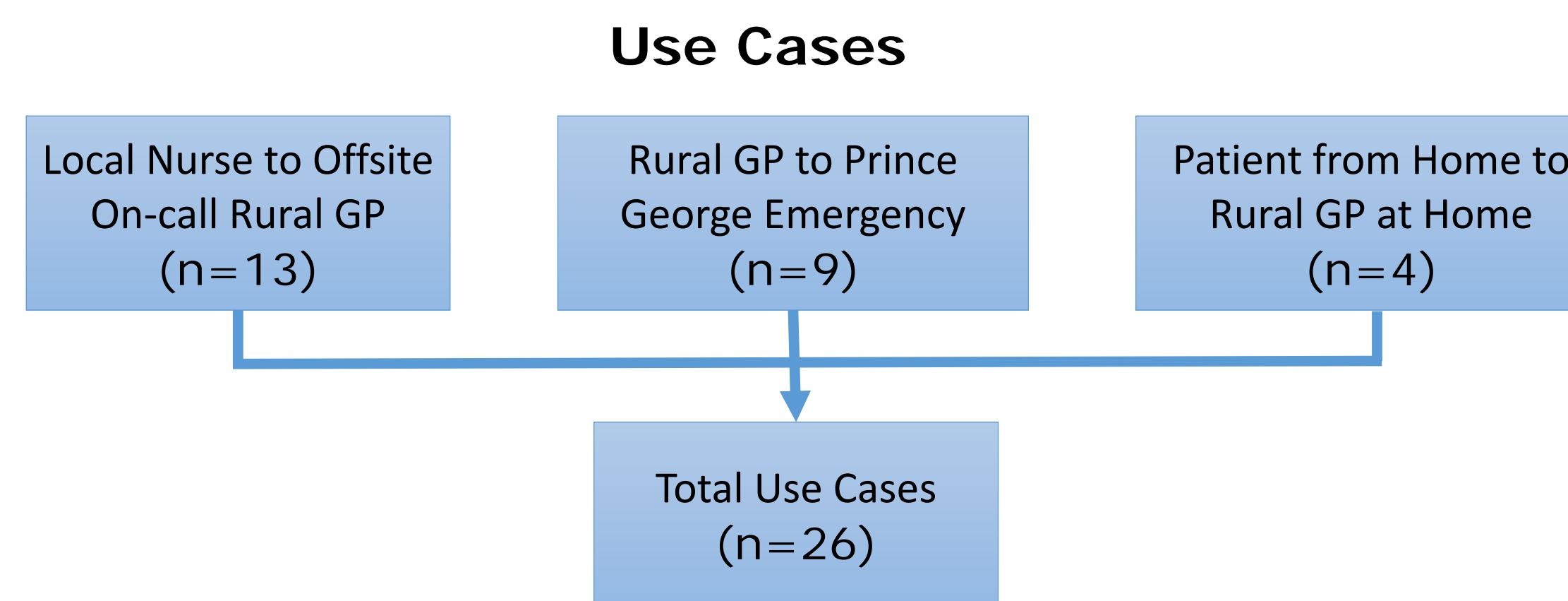
1. Patient health outcomes
2. Patient and health professional experience
3. Cost of health care delivery
4. Process of introducing virtual care into routine usage



Mixed Methods

- Interviews
- Focus groups
- Record review, e.g., technology usage statistics

Results



Health Outcomes – Benefits to Patient Care

- Patients receive medical services not previously available
- Increased provider confidence in the diagnosis
- Reduced patient transfers to Prince George
- Patients being transferred to Prince George are better stabilized

Across virtual cases conducted, 95% of family physicians and nurses (n= 34 completed logs across use cases) agreed or strongly agreed that using virtual care improved safety for their patient.

Patient Experience

- Patients were satisfied with care received
- Physicians noted VC disrupted usual power differentials, thus patients were more comfortable asking questions
- Visual presence of GP via VC reassured patients in their diagnosis
- Most patients who saw GPs via VC would also have a face-to-face follow-up in the following week

Provider Experience

General Practitioners	Emergency Physicians
<ul style="list-style-type: none"> • Increased confidence in medical decisions and diagnoses. 	<ul style="list-style-type: none"> • Improved communication and understanding between EPs and rural GPs.
<ul style="list-style-type: none"> • Reduced feelings of isolation, anxiety, and stress for GPs in rural communities. 	<ul style="list-style-type: none"> • Knowledge sharing and mutual learning opportunities between EPs and rural GPs.
<ul style="list-style-type: none"> • Pro-D for building capacity and physicians' skills to treat patients with complicated or unusual medical cases. 	<ul style="list-style-type: none"> • Workflow challenges for EPs at the referral site. Virtual care not integrated into the emergency triage process.

"The knowledge I shared wasn't what I expected to share. The value was in discovering what it was about the other sites - what constraints they have, what was available..."
– Emergency Physician



"[Virtual care] decreased anxiety and fear in handling these cases where time is crucial for saving the patient."
– Rural GP

Cost Implications

Patients and Families	Health System
<ul style="list-style-type: none"> • Reduced: transportation costs, lost days of work, strain on family. 	<ul style="list-style-type: none"> • Reduced costs from transfers via ambulance.
<ul style="list-style-type: none"> • Increased efficiency in diagnosis and treatment lowers wait times and time spent in hospital. 	<ul style="list-style-type: none"> • Improved efficiency as non-emergency patient consultations take less time.
<ul style="list-style-type: none"> • Patients with accessibility difficulties (e.g., palliative patient) can visit GP from home. 	<ul style="list-style-type: none"> • Virtual care can be used to quickly determine if a patient does <u>not</u> need emergency care and reduce system overload.

Discussion/Impact

Benefits - Physicians	Benefits - Patients
Timely access to advice and support (GP)	Expressed confidence in physicians and system
Increased understanding of rural practice context (EP)	Avoided transfer and associated costs

Over time there was a gradual transition from scheduled to on-demand real-time virtual care

"This was a difficult case, but it was really made easy because there was somebody that could give us those tips along the way. Without the telemedicine...it would've taken us a lot longer to get this patient intubated. Time was the critical factor here and it would've taken us time to find the literature on which drug to use, what kind of dosages because this patient had so many comorbidities. So it saved a lot of time."
– Rural GP

Virtual Care Use Cases

- ✓ Diabetic ketoacidosis/ intubation
- ✓ Intubation (presented w/ COPD, renal failure, heart failure)
- ✓ Chest pain (brought in by RCMP)
- ✓ Elective cardioversion with conscious sedation
- ✓ Cardioversion

Recommendations

1. **Technology Related**
 - Use ongoing evaluation/quality improvement to solve "on the ground" technological issues, and work out emergency usability issues collaboratively with tech partners.
2. **Capacity Building**
 - Provide ongoing training to physicians, nurses, and others using the virtual care equipment.
 - Build comfort through using equipment for educational, administrative, and quality improvement purposes.
 - Leverage virtual care as a feature to recruit and retain rural doctors.
3. **Workflow**
 - Current implementation has increased workload and complicated the emergency triage process at consultant site. Explore process and system changes to mitigate increased stress for emergency physicians.
4. **Clinical**
 - Explore expansion to other clinical areas and contexts, building on documented use cases and findings.
5. **Health System**
 - Explore systems issues of remuneration through the context of use cases, and stakeholder discussion/consultation.
6. **Partnerships and Collaboration**
 - Work on expanding partnerships and collaboration to build virtual team-based care model.

Looking Ahead



- Building momentum for expansion, sustainability, and transferability
- Exploring physician incentives for sustaining virtual care
 - Which virtual care services are currently remunerated and which services are not well supported?
- Gathering stakeholder feedback and input
- Implementing and evaluating for ongoing quality improvement

Acknowledgements

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