



# Health Telematics Unit Telehealth and e-Health Program [www.ucalgary.ca/telehealth](http://www.ucalgary.ca/telehealth)



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## **Identifying Telehealth / e-Health Socio-Economic Indicators for Priority Health Areas Meeting the needs of science and policy**

# The Team

## Principal Investigator:

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## Co-Investigators:

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- Dr. Arto Ohinmaa
- Dr. Richard E. Scott
- Dr. Roger Thomas
- Carol Anderson

## Advisors:

- Dr. Tom Noseworthy
- Dr. Steve Edworthy
- Dr. David Topps
- Dr. Barbara Young
- Diane Lorenzetti
- Janice Hopkins
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- Mr. Steven Lewis
- Dr. Robert Hayward

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**Assistants:** Julianne Sanguins, Research Assistant, Susan Brownell, Project Assistant



# Overview



1. Introduction & Purpose
2. Methodology
3. Results
4. Implications & Conclusions
5. Summary

# Purpose

To:

1. Outline the study methodology (research questions & protocols)
2. Detail preliminary results (Science; Policy)
3. Provide concrete examples of findings per priority area
4. Pose implementations for policy & future research

# Methodology

## Questions

How does telehealth (e-Health)...

- modify the Social Determinants of Health?
- impact the socio-economic performance of a community?

What are the optimal socio-economic indicators and proxy indicators for the assessment of the impact of telehealth (e-health) that will provide the called for evidence regarding social and economic impact?

# Methodology cont'd

## Search, Retrieval, & Critique Strategy

- Quantitative articles – Review guidelines –  
Cochrane Reviewers, Annals of Internal Medicine Systematic Review Series, Navarro-Rubio 9 point rating scale
- Qualitative articles – Mayan 2001
- Economic assessments – Drummond et al, 1997
- Policy – appropriate protocols, plus a column for Policy implications



## Methodology cont'd

# Identification of priority areas



## Health Renewal & Reform Reports

### Examples:

Mazankowski Report;

Romanow Commission;

Fyke Report;

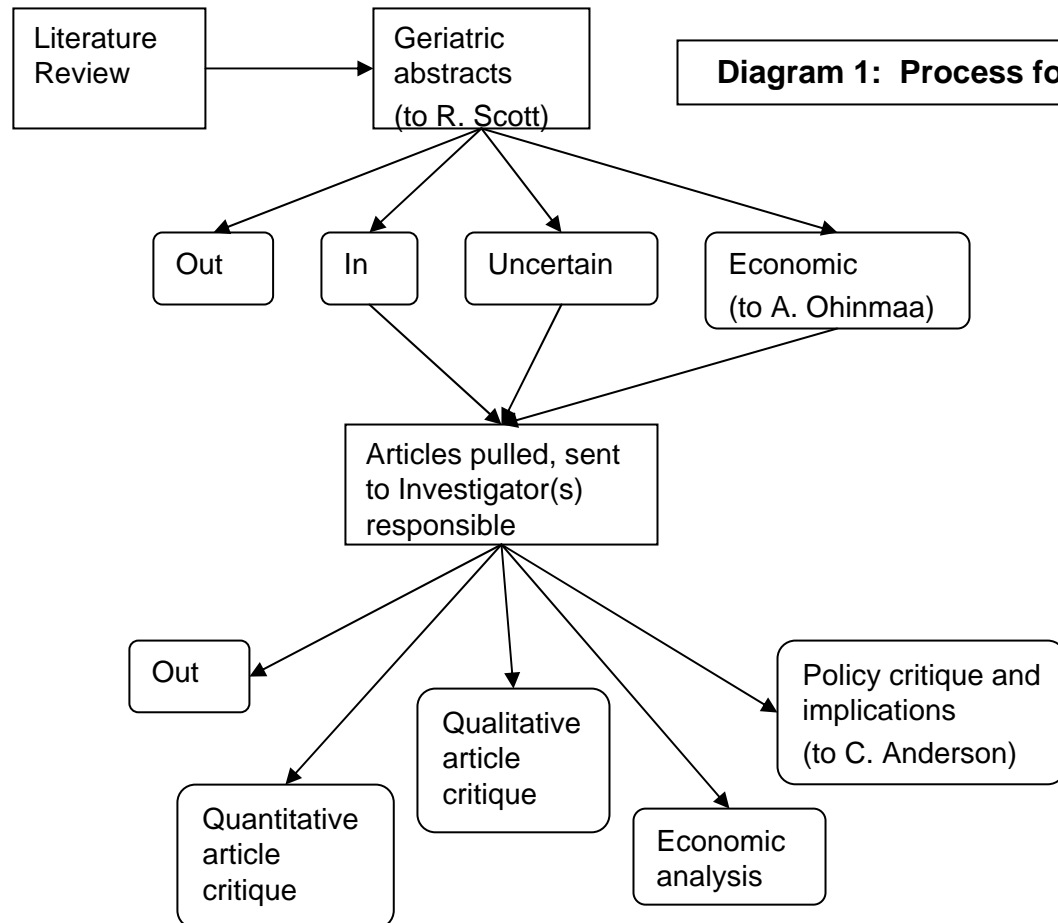
Clair Report;

National & global initiatives, activities, Frameworks;

Canada Health Act

# Methodology cont'd

## Priority Areas







## Methodology cont'd

# Policy strategy (Study & External)



- Awareness
- Engagement

# RESULTS

## Priority Areas

- Pediatrics (27)
- Mental Health (21)
- Radiology & Ultrasound (30)
- Economic Assessment (In Progress)
- First Nations (8)
- Systematic Reviews (29)
- Geriatrics (57)
- Rehabilitation (37)
- Home care (In Progress)
- Renal (In Progress)
- Rural and Remote (In Progress)
- Policy (66)



# Results cont'd

## General



- Socio-Policy investigation & indicators are scarce
  - Very few deployed programs
- Economic/outcome investigations/indicators – available

# Results cont'd

## Science

- Systematic reviews
  - Individual articles
- } evidence-based on the quality of the study
- Gaps – future research i.e. methodologies, questions, analysis, designs



# Results cont'd

## Policy



- What is known
- Identified gaps
- What might be done about the gaps
- Actionable items (Strength of evidence)
- Priority areas



# Results

## Pediatrics

### Social Determinants of Health



- **Management of asthma** Reasonable evidence: improved quality of health care in a rural adolescent population.
- **Immunisation rates** Good evidence: telephone reminder messages increased quality of care and access to appropriate intervention in a rural US population.
- **Emergency room** Relatively poor evidence: telephone triage system for referrals to a US hospital improved quality and efficiency of health care.

# Results pediatrics

Policy recommendation	Applicability to Alberta
Interactive compressed video is an effective medium for teaching and improving metered-dose inhaler technique in adolescents with asthma.	Seems applicable, if a significant need exists
Telephone triage program in a pediatric emergency department can be an efficient gatekeeper for health care resources.	Unclear; would need to consider current practice

# Results

## radiology/ultrasound

Policy recommendation	Applicability to Alberta
Interim data suggests that video-consultation may have a favourable impact on emergency neurosurgical consultations.	Video and teleradiology applicable and have been used; this study does not offer anything new and is of poor quality.
Telephone follow-up for children who had had chest radiography was feasible and produced valid and generalizable results at low cost.	Probably limited applicability in Alberta setting, though telephone follow up might be considered for some remote communities if not already in place.



# Areas of benefits from teleradiology studies

Area	Number of studies*
Indications of cost savings	15**
Approaches to calculation of savings	3
Reduction in transfer of patients	10
Improved quality of care	3
Influence on treatment planning	2
Reduction in adverse effects	1
Reduced travel distance for patients	1

\* Some studies considered more than one of these areas

\*\* One study found that teleradiology was not cost saving

# Results

## Systematic Reviews And Policy Studies

General assumption: current face-to-face clinical care is the gold standard.

- High quality comparative studies needed to determine
  - when telehealth can improve on conventional practice,
  - when it is inferior in terms of clinical effectiveness, economic efficiency and social impact.

Different definitions for telehealth, telemedicine, etc. in different studies / programs

- Common definitions would facilitate research and policy setting.
- Comparison difficult because the nature and context of the interventions also differ between studies.

Quality of studies is low due to methodology.

- Find ways to ensure that learning's from past studies are shared and applied to new research.

Policy makers: Synthesize findings to-date, weigh the information and apply it to their local situation



# Implications



- Definitions
- Need to make use of what we do know & respond to the gaps
- Work on the Social impact of telehealth – very limited
- Public Preferences
- Need for quality studies
- Barriers to Implementation
- Information sharing



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## Policy Teams

Local Study Policy Consultants

External Consulting Groups

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Alberta Heritage Foundation for Medical Research

The Keston Group



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