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ACTION for health

Applied Communication Technology: Information . Organizations . Networks

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Constructing Technology-in-use Practices: EPR-adaptation in Canada and Norway

Prepared for The Centre for Clinical Epidemiology & Evaluation. Vancouver General Hospital.

September 17, 2007

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Document Status:

☐	Published Paper	☐	Practitioner's Pointers
☐	Working Paper	☐	Briefing Note
☐	Report	☐	Research Tool
☐	Draft	☐	Overview
☒	Presentation	☐	Other

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Constructing Technology-in-use Practices: *EPR-adaptation in Canada and Norway*

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Nina Boulus & Pernille Bjørn

Vancouver Coastal Health Research Institute
Healthier lives through discovery

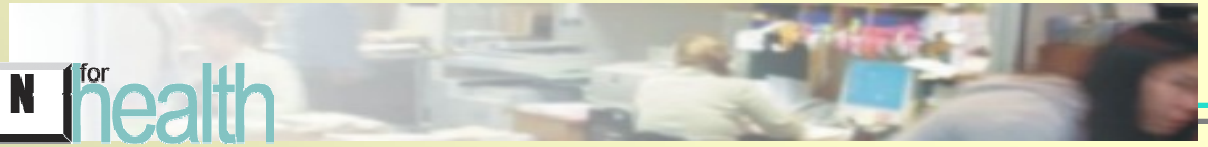
Social Sciences and Humanities Research Council of Canada | Conseil de recherches en sciences humaines du Canada

Simon Fraser University

Reference:

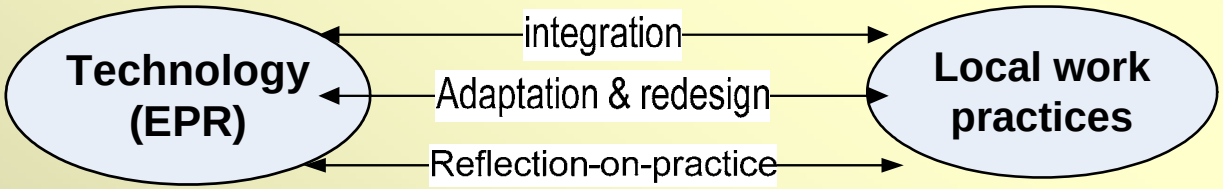
Nina Boulus and Pernille Bjørn (2007): Constructing Technology-in-use Practices: EPR-adaptation in Canada and Norway. Proceedings of the 3rd International Conference Information Technology in Health Care: Socio-technical approaches. In J. I. Westbrook, E. W. Coiera, J. L. Callen, J. Aarts (Eds.), *Information Technology in Health Care* (pp. 143-155). IOS Press

(This paper was also selected to be included in a special ITHC2007 issue of the *International Journal of Medical Informatics*)



1. Introduction

- Electronic Patient Records (EPRs):
  - Introduced in the 60s-70s
  - 'Magic silver bullets' → solve financial problems
  - Funded through national or provincial initiatives
  - $ + Expectations → High
    - Despite that, many goals have not been met yet
    - Therefore, research grounded in real case studies is highly important and can access the construction of alternative approaches



2. Setting the stage: Case studies

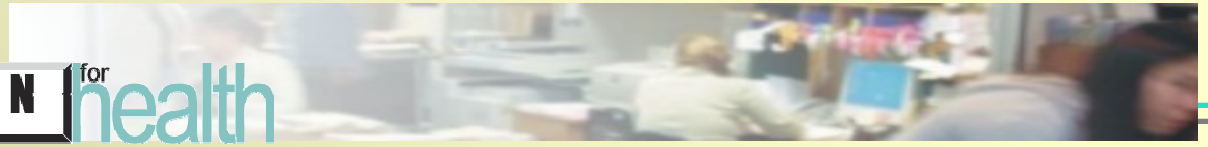
Case A: Norway

Case B: Canada

Hospital

Community health centre

Aim of study: Investigate the driving forces that promoted the adaptation processes



2. Setting the Stage

- Similarities:

Supporting artifacts

Paper-based infrastructure

Infrastructure pre-EMR

Work practices

Technical infrastructure

Binders

Folders

Notebooks

Paper charts

IS

Excel sheets

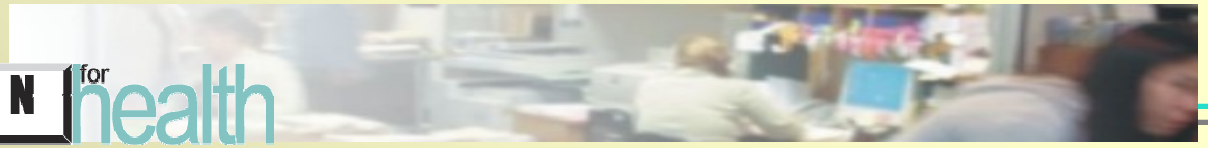
PAS

Labs

2. Setting the Stage

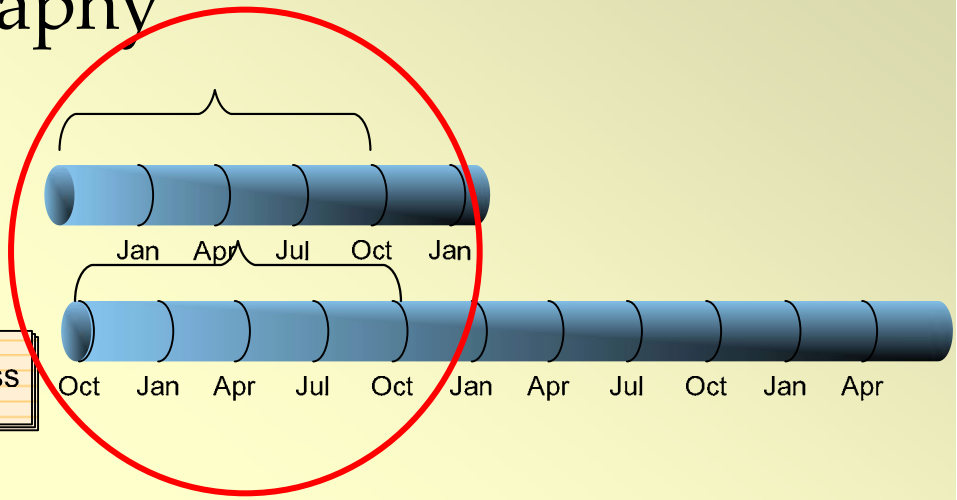
- Differences:
  - Institutional structures, organizational size, and technical architecture of the EPR system

- But:
  - Comparing the adaptation process in these 2 different settings, we have the opportunity to provide insights into the way in which technology-in-use practices develop and evolve over time



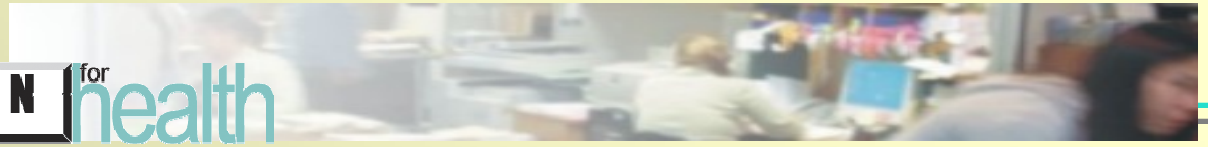
3. Research Methods

- Longitudinal ethnography
- Fieldwork:
  - **Case A:** Oct 2002- 2003
  - **Case B:** Oct 2004- Still in progress



Data collection techniques:

- Interviews (Case A: 19; Case B: 14)
- Observations (Case A: 14, 39 h; Case B: 10, 29 h)
- Formal & informal meetings
- Collection of various documents
- Training sessions (Case A: 5, 18h; Case B: 3, 4.5 h)



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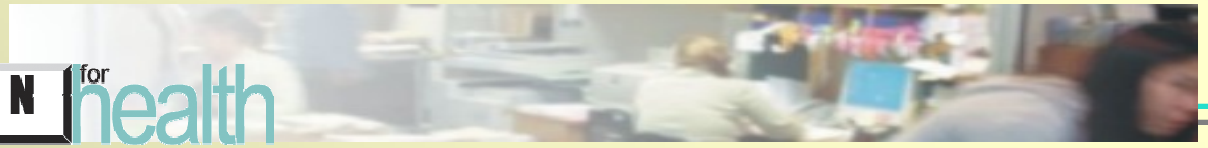
3. Research Methods

- Cross-case analysis:
  - Identify diversities and similarities between the management, execution, and impact of the reflective spaces
  - Identify technology-in-use practices
- Findings:
  - Meetings had different degrees of impact on the adaptation process in the 2 cases
  - Continuous reflection-on-practice activities



4. Case A: Technology-in-use practices:

- 1 day training

- Adaptation process: led by the IT department
- The same 'go-live' date for: physicians & secretaries
- Introductory meetings: conducted by the IT department

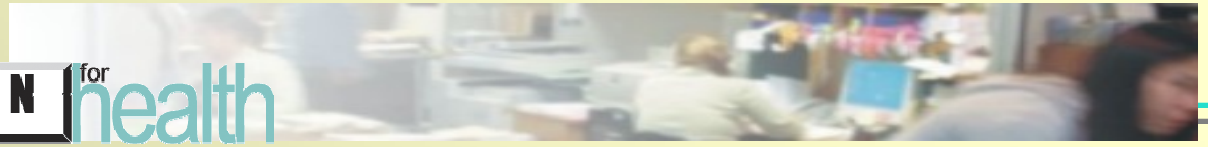
4. Case A: Technology-in-use practices:

Initial Technology-in-use practices:

Physicians:	Secretaries:
Validating & signing notes	Transcribing & correcting notes

Emergent Technology-in-use practices:

Physicians:	Secretaries:
Transcribing & correcting notes Partial use of prescriptions Partial use of doctor's notes Retrieving information Internal electronic referrals	Creating templates Piloting scanning



4. Case B: Technology-in-use practices:

- 1 day training

- Adaptation process: led by the EMR committee:
  - Representatives from each professional group
  - Weekly meetings
  - Aim: discuss challenges, evaluate the transition process, and define new goals

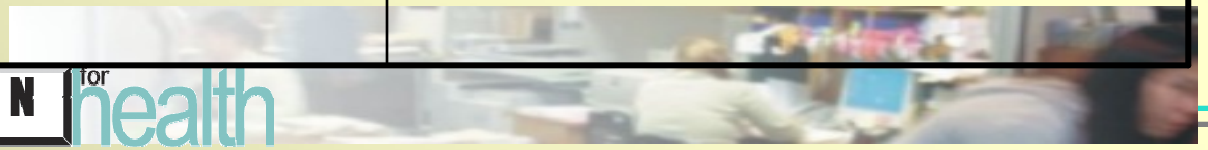
4. Case B: Technology-in-use practices:

Initial Technology-in-use practices:

Physicians:	Secretaries:
Entering medical notes Prescriptions Search function	Scheduling Billing Scanning

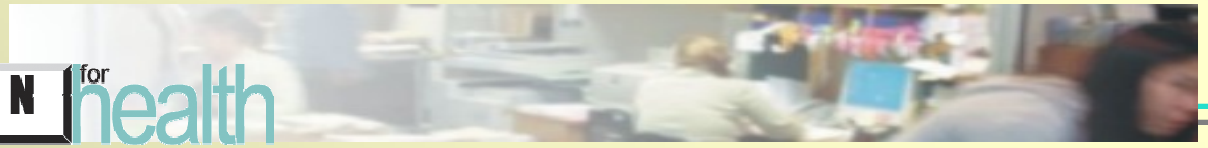
Emergent Technology-in-use practices:

Physicians:	Secretaries:
Entering medical notes Retrieving information Prescriptions Search function Billing Referrals Creating templates Visual graphs & diagrams Scanning	Grooming & updating the *EPR* Scanning



4. Cross-case analysis

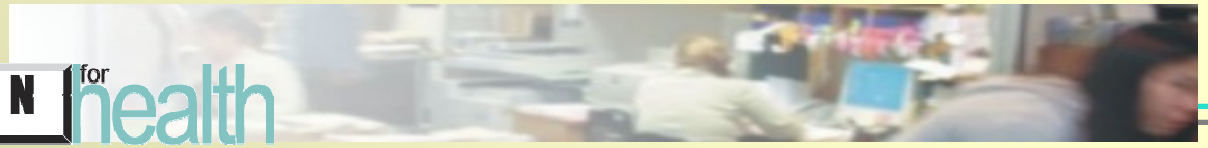
- Technology practices evolved in both cases
- But the extent to which the work practices changed was different
  - **Case A:** Developed technology-in-use practices over time
  - **Case B:** Developed greater amount of changes and increased use of EPR



4. Cross-case analysis

- What are the **factors** promoting the adaptation process?

- One of the major driving forces in **Case B** was the establishment of the ***EPR committee*** and their ***meetings***



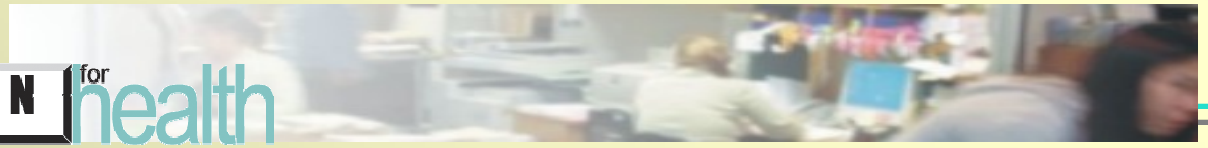
5. Discussion

	Case A	Case B
EPR meetings:	IT department	EPR committee
Decisions:	Challenging	Continuous discussions & negotiations
New function:	Struggle with workload	- Comments - Pilot testing new work practice - Feedback & evaluation
Source of change: Approach:	External (IT department) 'Top-down'	Internal (health care personnel) 'Bottom-up'
Participants:	Randomly chosen	Self-selected
Frequency of EPR-meetings:	At the beginning	Weekly basis (then biweekly & monthly meetings)

5. Discussion

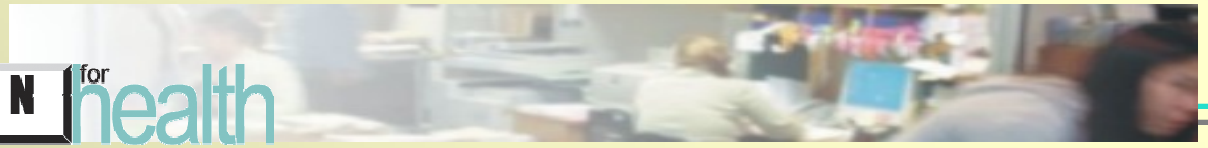
Case B:

- Content of meetings:
  - Continuous reflection-on-action activities
  - Technology-in-use practices emerged from situated actions
  - Space to engage in critical debates and question existing rigid routines.



5. Discussion

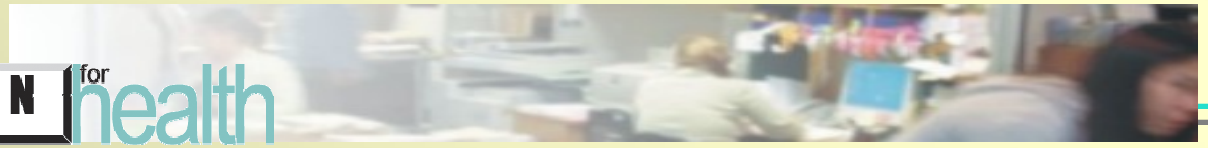
- Introduction of new functions:
  - **Case A:** Discussed in isolation
  - **Case B:** Evaluated in context
- View of the technology:
  - **Case A:** Time-demanding & disrupting
  - **Case B:** Embedded in the medical practice and enhances quality of care

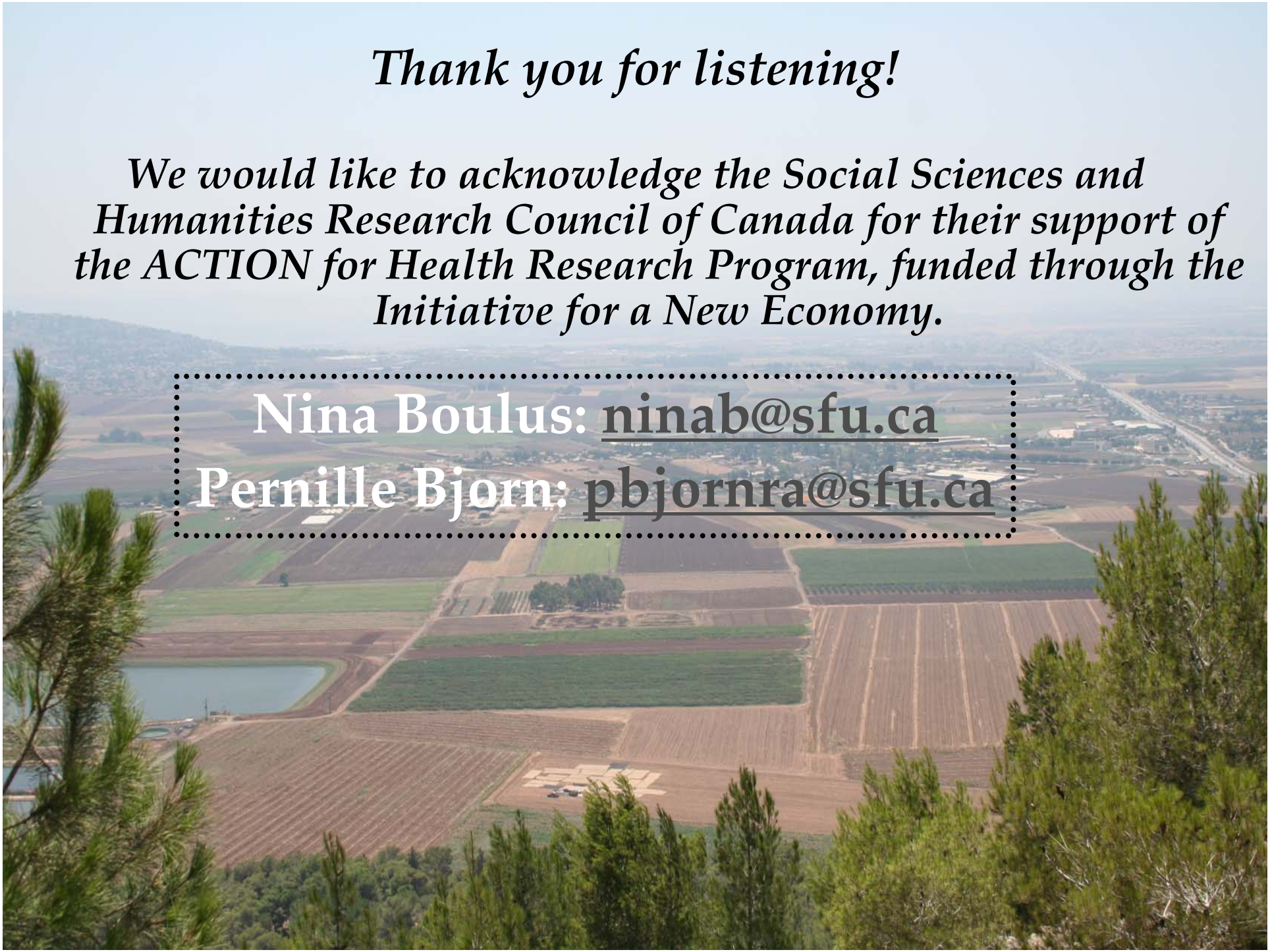


6. Concluding Remarks

Our findings lead to the following recommendations:

- Change should be internally initiated
- Space for reflection-on-practice





Thank you for listening!

We would like to acknowledge the Social Sciences and Humanities Research Council of Canada for their support of the ACTION for Health Research Program, funded through the Initiative for a New Economy.

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