Health system-level factors influence the implementation of complex innovations in cancer care

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Objective

We have studied synoptic reporting tool (SRT) implementation in 3 cases of cancer care in Nova Scotia

Today’s objective: To present the system-level factors important to SRT implementation in 2 of those cases

“The transition period during which targeted organizational members ideally become increasingly skilled, consistent, and committed in their use of an innovation.”

1Klein & Sorra 1996
TREATMENTS FOR BREAST CANCER

Was surgery delayed for any reason:
No delay (<30 days)

PREOPERATIVE ASSESSMENT
Current pregnancy: No
Past Personal History: None
Genetic Testing: None
Contraindications to radiotherapy: No
Patient candidate for breast conservation: Yes

BMI: Normal (18.5-24.9)

Size of breast: Medium (B)
Method of detection: Patient/family
Palpable: Yes
Can be seen on: Mammogram, U/S, MRI
Preop Biopsy: Core Mamnotome

Clinical Axillary Node Status: Negative
Other nodes: None
Clock Position: 9

Tests Done: Bloodwork, CXR

Invasive TNM: Unifocal
Size of Tumor: 2.0-2.9
Clinical Stage: IIA

Skin excision with specimen: Yes
Depth of resection: To fascia
Margins checked by pathologist: gross assessment
If checked: negative
Centimeters clinically negative margin: 0.5-1

Needle localization: No
Clips in segmental site: No

LYMPH NODE SURGERY
Unilateral lymph node surgery: right breast
Lymph node surgery: axillary node & sentinel node dissection
Preop lymphoscintigraphy: Yes
Number of nodes seen: 1
Site of nodes: Axilla
Localization Technique used: Technecium
Sentinel nodes: Clinically negative
Node 1: Radioactive
Counts: 598

Axillary dissection performed using: Same incision as breast surgery
Axillary vein seen: Yes
Latissmus dorsi identified: Yes
Latissmus cleared: Yes

Medial limits of axillary dissection identified:
Lateral border of pectoralis minor (level 1), medial border of pectoralis minor (level 2)
Serratus anterior identified: Yes
Serratus anterior cleared: Cleared
Study design

• Case study methodology$^2,3$

• Explanatory
  – Focus on ‘how’ and ‘why’

• Multiple cases
  1. Synoptic reporting in the Colon Cancer Prevention Program (CCPP)
  2. Surgical Synoptic Reporting Tools Project (SSRTP)

$^2$Yin 2009  
$^3$Stake 2006
Cases

Colon Cancer Prevention Program
1 SRT*
2009-2010
Rapid expansion
All using for screening *(policy)*

Surgical Synoptic Reporting Tools Project
1 SRT*
2010-2011
Pilot project, 2 tertiary & 1 community hospitals
Voluntary use

* Both cases worked to integrate their SRT with existing IT systems

Nova Scotia healthcare system
Data sources

• In-depth interviews with 40 key informants

• Documents
  – Project plans, project evaluations, communication materials
  – Legislation, health system/service evaluations

• Non-participant observation
  – 6 training sessions (SSRTP case only)

• Physical artifacts
# Key informants

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<thead>
<tr>
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<th>CCPP</th>
<th>SSRTP</th>
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<tr>
<td>Implementation team</td>
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<td>3</td>
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<tr>
<td>Clinician users</td>
<td>5</td>
<td>6</td>
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<td>3 tertiary, 2 community</td>
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<td>3 tertiary, 2 community</td>
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<td>System</td>
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Data analysis

1. Case history/description

2. Separate analysis for each case
   a) Thematic analysis
   b) Explanation building
      - Iterative, flexible process of moving between prior and case-specific knowledge
   c) Presentation of findings

3. Cross-case analysis

\(^4\)Braun & Clarke 2006
Results

• Structural, infrastructural, policy, and socio-historical components of the health system influenced SRT implementation

• Navigating and managing these components required +++ time and additional resources
Care delivery & support structure

- Created +++ challenges re: governance, role clarity, and sharing of patient information across organizations

“...The biggest questions we have of our current hybrid cancer system that is not topology aligned. We have introduced a tool to support screening, and that becomes problematic. Can you tell us who really has your ball in this testing? There is a problem of finding who supports it.” [SSRT, Team member #1]
Information technology

• Legacy of IT infrastructure was a challenge to implementation

“The have [CORI] sit on top of different business processes, different information systems, different staff structures in terms of where their IT person sits, is a challenge. And then to have your work interface in this one system, then sit amongst a whole host of priorities at a provincial level, is another layer of complexity. For me, that has been the biggest challenge.” [CCPP, Team member #2]

“[We have] 3 different hospital systems, you know, the IWK has their own Meditech Magic, then there is Meditech out in the districts, and then Capital [Health] has the best of breed, a combination of a whole bunch of things. The lab systems are not all the same, the operating room systems are not all the same, nothing is the same. So it is a huge challenge, particularly as we seek to share information … and it takes an enormous amount of resources” [SSRTP, System member #2].
Policy environment

• Legislative and regulatory environment, as it pertained to privacy, viewed as especially prohibitive in the CCPP case

“There is a wall there and nobody is really willing to ask ‘why is that wall there and does that wall really need to apply in this case?’ You know, the wall might be there for a very good reason. But, you know, should we put a door in for these guys? Maybe yes, maybe no, but I don’t think those risk assessments are really ever done. It is the ‘just talk to the hand.’ It is a no.” [CCPP, Team member #4]
Inter-organizational relationships

• Historical relationships/interactions were major barriers to implementation

“Organizational interactions are absolutely the number one [factor], especially in healthcare because there are so many players, so many organizations.” [SSRTP, Organizational member #3]

CCPP: widespread resistance across programs and organizations to work together

SSRTP: ++ time building new relationships and leveraging existing (positive) ones
By end of data collection

• Both SRTs up and running

• CCPP: achieved IT integration in 1 of 9 health districts
  – “Workaround solutions” in other districts
  – Most not using for diagnostic colonoscopies

• SSRTP: achieved IT integration in all hospitals
Relationships

• Inter-organizational interactions and relationships had incredibly impeding or enabling influences
  – CCPP: negatively affected ability to achieve effective implementation
  – SSRTP: allowed team to implement as planned

• Implementation is a social process where people and their (inter)actions matter
Summary

• Certain features of the larger healthcare system were problematic in the context of SRT implementation

• Recognizing their potential influence is important when designing interventions

• High-quality relationships can counter-balance many negative contextual factors
Acknowledgments

• Study participants

• Margaret Jorgensen, Cynthia Kendell

• CIHR/CCNS Team in Access to Colorectal Cancer Services in Nova Scotia

• Nova Scotia Health Research Foundation
Extra slides
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<td>Managing the change process(^a)</td>
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<td>Champions &amp; respected colleagues(^b)</td>
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- Interpersonal level;  
- Organizational level;  
- System level;  
- Innovation level

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