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."[1]**

[1]Klein & Sorra 1996

TREATMENTS FOR BREAST CANCER

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

BMI: Normal (18.5-24.9)

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

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

Clinical Axillary Node Status: Negative
Other nodes: None

PALPABLE LESION
Distance from Nipple: Peripheral

Clock Position: 9

PREOP TREATMENT
Preop Treatment: No

Tests Done: Bloodwork, CXR

METASTATIC WORKUP
Metastatic work up: Negative

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

BREAST SURGERY
Specify surgery: Unilateral
Specify side: Right
Current diagnosis: invasive
Nipple removed: No

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

Breast surgery performed: Breast Conservation
Indications: Primary excision
Specify breast: Right

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: Technetium
Sentinel nodes: Clinically negative
Node 1: Radioactive

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

	CCPP	SSRTP
Implementation team	4	3
Clinician users	5 *3 tertiary,* *2 community*	6 *4 tertiary,* *2 community*
Organization	5 *3 tertiary,* *2 community*	7 *6 tertiary,* *1 community*
System	5	5
	19	*21*

Data analysis

1. Case history/description
2. Separate analysis for each case
   a) Thematic analysis[4]
   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 problem is we have got a hybrid care system that is not totally clear on who does what and how. From my perspective, … that becomes problematic because you don't know who owns it and who really wants it. There is no trouble finding people who support it, [CCF's trouble is finding the group that owns it." [SSRTP, Team member #1]

"The problem is question of governance. As a system that never actively we introduced this tool to support cancer screening … it puts us in a difficult position because we really have no business being in the business, on the service delivery, right?" [CCF, Team member #2]

Information technology

- **Legacy of IT infrastructure was a challenge to implementation**

"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].**

"To 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]**

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 health care because there are so many players, so many organizations." [SSRTP Organizational member #3]

"Technology is not the barrier, umm, there are, it is organizational and the history of, of you know, the system itself and the players and so on." [CCPP, Team 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**

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Extra slides

	NSBSP	CCPP	SSRTP
Stakeholder involvement[a]	+/-	-	+
Managing the change process[a]	-	-	+
Champions & respected colleagues[b]	+/-	+	+
Administrative & managerial support[b,c]	+/-	+/-	+
Innovation attributes[d]	+/-	+/-	+/-
Implementation approach[a]		+	+/-
Project management[a]		-	
Resources[b]	-		-
Culture[b]	+		
Leadership[b]	+		
Monitoring & feedback[b]	+		
Socio-political context[c]		-	-

[a] Interpersonal level; [b] Organizational level; [c] System level; [d] Innovation level