Objectives

• Describe how SQUIRE 2.0 differs from SQUIRE
• Enumerate the key aspects of context
• Identify where context should be reported
Background

Why do we need SQUIRE? (after Davidoff)

✓ Done by busy “front line” professionals, more concerned with local change than generalizable truths
  • Lack of training and experience in research, publishing
  • Lack of academic incentives

✓ Editors, peer-reviewers unfamiliar, skeptical

✓ Writing about improvement work is hard

How does SQUIRE help?

✓ Offers guidance on reporting original studies of improvement
  • Acknowledges context-dependence, complexity, iterative nature of the work
  • Emphasizes the measuring of impact and discovery and also an explanation of mechanisms

✓ Supports planning as well as writing phases
The Path to SQUIRE 2.0

1. Evaluation of the initial SQUIRE guidelines (SQUIRE 1.0, 2008)
   - Assess usability and clarity
   - Semi-structured interviews / focus groups with 29 end users
   - Input from 18 experts (editors, researchers, improvers)

2. Early revisions of versions 1.2 and 1.4
   - Two consensus conferences (Nov 2013 and Nov 2014)

3. Pilot testing of version 1.6 with late revisions
   - 44 authors used interim draft to write sections of a manuscript
   - Provided feedback on usability and understandability of the draft guidelines
   - Semi-structured interviews with 11 journal editors
   - Version 1.8 sent to over 450 individuals around the world

4. Release of SQUIRE 2.0 September 15, 2015


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Major Changes to SQUIRE 2.0

1. Terminology & language
   - E.g., Healthcare improvement vs. quality improvement

2. Theory → Rationale
   - Why this approach was chosen, why it was thought it might work
   - Not the method used for the work (e.g., lean, exp. Based co-design)

3. Context
   - Where the work was done, what is important about the setting
   - Explicitly included in methods, results, discussion

4. Studying the intervention(s)
   - Reflecting upon the work that was done – e.g.,
     - Did things get better for the reasons you thought?
     - Were there unintended consequences?
     - What is the opportunity cost for the value gained from the work?

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What is context?

• Like “setting” in biomedical model - only much more
  – Called ‘thick description’ in social sciences

• ‘All the things that are not your intervention’ (Mollon / Ovretveit / Kaplan)

• All the things that affected your work
  – Made it succeed
  – Made it fail
<table>
<thead>
<tr>
<th>Brief description</th>
<th>Main conceptual divisions of context</th>
</tr>
</thead>
</table>
| **Bate, Paul**    | Highly readable essay on context—excellent for conceptual understanding | Environmental context  
 |                    | Organizational context               |
| **MUSIQ**         | Develops flow-diagram of QI process accounting for context within the Model of Understanding Success in Quality (MUSIQ) (Kaplan, et al) | External context  
 |                    | Organization  
 |                    | QI team  
 |                    | Microsystem |
| **CFIR**          | Maps major domains within a broader Consolidated Framework for Implementation Research (CFIR) (Damschroeder, et al.) | Outer setting  
 |                    | Inner setting  
 |                    | Individuals involved |
| **PARIHS**        | Presents primary elements of Evidence, Context, and Facilitation within the Promoting Action on Research Implementation in Health Services framework (PARIHS) (Rycroft – Malone, et al) | Culture  
 |                    | Leadership  
 |                    | Evaluation |

*Courtesy of Hilary Mosher, MD, MFA*
Models and Frameworks

• Context takes its definition in relationship to an intervention

• Models and frameworks, which explore how to do quality improvement work better, emphasize context


Courtesy of Hilary Mosher, MD, MFA
Where in the paper do you report context?

• **Methods:** contextual factors that authors considered important at the outset of the improvement initiative (a priori)

• **Results:** how contextual factors interacted with the interventions

• **Discussion:** Implications of findings regarding context both to success of intervention and to generalizability of intervention
Why should I bother reporting it?

• Because sometimes improvement efforts work and sometimes they don’t
  – Your context is probably at least partly why your work succeeded or failed
  – If you can *explain it to others*, you can help them be successful (or at least avoid your fate!)
  – You want people to know if it will work for them –
    – In their location, work flow, situation...

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How do I report my context?

• What we would like
  – Measures of context that could be captured and reported systematically

• What we have (and to some degree, always will)
  – A few surveys and instruments that can help quantify your context – e.g., safety culture survey
  – Your keen, careful, observant, critical assessments
  – Your honest, complete reporting, mostly descriptively

How will you get those data?

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Capturing data on Context

“Context is a habit of mind”
(from Hilary Mosher MD, MFA)

Why is it so wet?
Capturing data on context

• “Habit of mind”: documenting the *reflective process* of the improvement work (the social science equivalent is *field notes*)
  – The little victories and failures
  – The small tweaks along the way
  – Memorable events and conversations
  – Ah ha moments
  – The regular day to day events

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The challenge of context

• Often dynamic
• May be emergent
  – It may be a result of the work you do
  – It may be external events that occur during the work
  – It may only be recognized in retrospect or through comparison

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A tip on reporting context well

• Give a clear definition of what you mean when you identify a particular context element
  – A clear definitions has both properties and boundaries
    • Property = what is included in the term
    • Boundary = what is excluded

Example: “this project was successful because it had administrative support” What does admin support mean?
  – Property: hospital administration, including the president and the board.
  – Boundaries: not administrative support subordinate to the improvement team

• Use representative quotes and/or stories when possible to provide depth for the reader to understand the element
Context:
the things that affect your work and are about the world you are in

The qualities, events, forces, and structures that affect the validity, reliability, trustworthiness of your results.

Healthcare
The world in which this is happening

Problem
Intervention(s)
Outcomes

The qualities, events, forces, and structures that made you design the intervention(s) in this way

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Writing Exercise Format

1. individually draft at least one paragraph (20 minutes)
2. Divide into pairs and alternate as author and reviewer to discuss your drafts (20 minutes).
3. Entire Group Discussion (20 minutes)
Context: the things that affect your work and are about the world you are in

The qualities, events, forces, and structures that affect the validity, reliability, trustworthiness of your results.

Healthcare

The world in which this is happening

Problem → Intervention(s) → Outcomes

The qualities, events, forces, and structures that made you design the intervention(s) in this way

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Take Home Points about Context

• Context is a key aspect of good improvement reporting

• Context is generally not something you count
  ✓ experiences, phenomena, interactions, triggers to iterations

• The data often come from qualitative sources
  ✓ Field notes (reflections)
  ✓ Records – meetings, emails, decisions
  ✓ Observations, interviews / focus groups

• Define your context elements, support with examples

• Look to the social sciences to learn how to study your improvement work

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Addressing the sociotechnical drivers of quality improvement: a case study of post-operative DVT prophylaxis computerised decision support

Blake J Lesselroth,1 Jianji Yang,1,2 Judy McConnachie,2 Thomas Brenk,2 Lisa Winterbottom1

ABSTRACT
Background: Quality improvement (QI) initiatives characterised by iterative cycles of quantitative data analysis do not readily explain the organisational determinants of change. However, the integration of

BACKGROUND
In modern healthcare’s knowledge-intensive environment, information technology (IT)
They describe their sociotechnical outcomes — and give us context data!

<table>
<thead>
<tr>
<th>Table 1</th>
<th>Sociotechnical issues identified by the team during CDS implementation and interventions taken to improve performance. Findings are categorised using the FITT framework (adapted from Ammenwerth et al)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Actors in System</strong></td>
<td><strong>Issues or barriers to CDS success</strong></td>
</tr>
<tr>
<td></td>
<td>➤ Additional orders were needed to improve efficiency of order-entry time</td>
</tr>
<tr>
<td></td>
<td>➤ Heterogeneous cohort of surgical subspecialists</td>
</tr>
<tr>
<td></td>
<td>➤ Ordering providers rotate frequently</td>
</tr>
<tr>
<td><strong>Technology</strong></td>
<td>➤ Orders needed to be tracked automatically</td>
</tr>
<tr>
<td></td>
<td>➤ No way to automatically capture contraindications</td>
</tr>
<tr>
<td><strong>Interfaces</strong></td>
<td><strong>Task Technology</strong></td>
</tr>
<tr>
<td></td>
<td>➤ Surgeons used unexpected order menu pathways</td>
</tr>
<tr>
<td></td>
<td>➤ Orders embedded in deep in sets were overlooked</td>
</tr>
<tr>
<td></td>
<td><strong>User technology</strong></td>
</tr>
<tr>
<td></td>
<td>➤ Risk categories were difficult to apply to patients</td>
</tr>
<tr>
<td></td>
<td>➤ Decision support content difficult to interpret</td>
</tr>
<tr>
<td></td>
<td><strong>User task</strong></td>
</tr>
<tr>
<td></td>
<td>➤ Guidelines discordant with local practice</td>
</tr>
</tbody>
</table>
Discussion that emerged from the session – IHI 2015 Learning Lab

**Contextual Elements**

- Hospital Description
- Type of Unit - ICU
- People/Professionals - #, Training, Experience
- EHR
- Cultural Issues - Relationships between MD/RN
- Outpt Clinic
- Patients’ Knowledge of MD Med Use
  - Including other pharmacist in Outpt Clinic
- Patient Population
- Type of Training Program
- Connection between what happened before & what is occurring now
- Leadership, both name MD Org & Local Leadership on QI Team or Microsystem

**Questions**

- How much of context should I include?
- Who is the audience for my manuscript?
  - Readers of Journal, Individual Reader
- What is the story I’m trying to tell?
- How to describe the change in context during the QI Work?
- What is the “team” to describe: clinical care? QI Team?