Introducing CFIR 2.0 Updates
The Team

- Laura J. Damschroder
- Caitlin Reardon
- Julie Lowery
- Marilla Widerquist
- CFIR Users
  - Survey Respondents
  - Authors of published articles

Funding

- U.S. Department of Veterans Affairs
  - Veterans Health Administration
  - Quality Enhancement Research Initiative
Fostering implementation of health services research findings into practice: a consolidated framework for advancing implementation science

Laura J Damschroder*1, David C Aron2, Rosalind E Keith1, Susan R Kirsh2, Jeffery A Alexander3 and Julie C Lowery1
Generalized Implementation Theory

Evidence-based Innovation

Implementation PROCESS

Implementation Outcomes

Innovation Outcomes

Individuals

Inner Setting

Outer Setting

CONTEXT
Conceptualizing outcomes for use with the Consolidated Framework for Implementation Research (CFIR): the CFIR Outcomes Addendum

Laura J. Damschroder, Caitlin M. Reardon, Marilla A. Opra Widerquist and Julie Lowery
CFIR Outcomes Addendum

CFIR Implementation Determinants

Implementation Outcomes

Anticipated Implementation Outcomes
Indicators of anticipated implementation success or failure

Actual Implementation Outcomes
Indicators of actual implementation success or failure

Innovation Determinants

Innovation Outcomes

Indicators of innovation success or failure:
innovation impact on key constituents

Equitable Population Impact

Key Decision-Makers

Innovation Deliverers

Innovation Recipients

CFIR Implementation Determinants
Power of Theory

✓ Provides organizing lens/framework for research

✓ Provides common terms & definitions

✓ Systematically and efficiently build collective knowledge

✓ CFIR Framework
  o Understand context → mechanisms of action
  o Generalize through use of CFIR
  o Enable syntheses
Context Assessment using the CFIR

**Perceptions** of the degree to which [insert construct definition] and how it may influence implementation success or failure

- Qualitative Assessments
- Quantitative Assessments

E.g., “Relative Priority” within the Inner Setting: Perceptions of the degree to which [the innovation] is important to implement compared to other initiatives and how it may influence implementation success or failure
Literature Review

Objective: Identify articles with “Meaningful use”

Searched articles with “CFIR” in Title or Abstract
• 2009 through January 7, 2020

Records after duplicates removed
n=2686

Full-text articles assessed for feedback & recommendations
n=376

Articles with recommendations
n=59
### Survey of Authors

**CFIR Users Surveyed**
- **n=334**

**Response**
- **n=128 (38%)**

#### CFIR Ratings
- **✓** Easy to use (researchers)
- **✓** Easy to use (non-researchers)
- **✓** Applicable across Innovations
- **✓** Applicable across Settings
- **✓** Useful for reporting determinants
- **✓** Useful for designing strategies
- **✓** Help compare findings
- **✓** Logical
- **✓** Help advance theory
- **✓** Useful for reporting determinants

#### Recommendations

<table>
<thead>
<tr>
<th>Feature</th>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>Applicable across Innovations</td>
<td>81</td>
<td>19</td>
</tr>
<tr>
<td>Easy to understand</td>
<td>77</td>
<td>23</td>
</tr>
<tr>
<td>Useful for reporting determinants</td>
<td>77</td>
<td>23</td>
</tr>
<tr>
<td>Applicable across Settings</td>
<td>67</td>
<td>33</td>
</tr>
<tr>
<td>Useful for designing strategies</td>
<td>65</td>
<td>35</td>
</tr>
<tr>
<td>Help compare findings</td>
<td>59</td>
<td>41</td>
</tr>
<tr>
<td>Logical</td>
<td>57</td>
<td>43</td>
</tr>
<tr>
<td>Help advance theory</td>
<td>52</td>
<td>48</td>
</tr>
<tr>
<td>Easy to use (researchers)</td>
<td>50</td>
<td>50</td>
</tr>
<tr>
<td>Easy to use (non-researchers)</td>
<td>16</td>
<td>84</td>
</tr>
</tbody>
</table>
CFIR is far too complicated and difficult to use. I have been learning about and trying to use CFIR for more than 5 years and the more I use it the more difficult and uninterpretable I find it to be.

Implementation research is challenging in itself and I see that the complexity of CFIR gets blamed for the broader challenges.
Innovation Characteristics

“Clarify that these constructs exist independent of context …and are specific to the innovation not the implementation process”
**DEFINE your Domains**

<table>
<thead>
<tr>
<th>DOMAIN</th>
<th>Definition/Guidance</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>INNOVATION</strong></td>
<td>Describe the [Innovation] including e.g., type, components, ideally using a standard reporting guideline.</td>
</tr>
<tr>
<td><strong>OUTER SETTING</strong></td>
<td>Key attributes of [Outer Setting(s)] including e.g., boundaries, type, and nature.</td>
</tr>
<tr>
<td><strong>INNER SETTING</strong></td>
<td>Key attributes of [Inner Setting(s)] e.g., function, location, size, age, boundaries.</td>
</tr>
<tr>
<td><strong>INDIVIDUALS</strong></td>
<td>Identify key roles&lt;br&gt;Capture characteristics</td>
</tr>
<tr>
<td><strong>PROCESS</strong></td>
<td>Describe the overarching framework being used to guide the implementation process (i.e., “process framework”), if applicable (Nilsen2015)</td>
</tr>
</tbody>
</table>
**Innovation Characteristics**

This domain captures *perceptions* of constructs specific to [innovation] being implemented.

<table>
<thead>
<tr>
<th>Innovation Definition</th>
<th>Describe the [Innovation] including e.g., type, components, ideally using a standard reporting guideline.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Innovation Source</td>
<td>The group that developed and/or visibly sponsored use of [the innovation] is reputable, credible, and/or trustable</td>
</tr>
<tr>
<td>Innovation Evidence</td>
<td>[the innovation] has robust evidence supporting its effectiveness</td>
</tr>
<tr>
<td>Strength &amp; Quality</td>
<td></td>
</tr>
<tr>
<td>Innovation Relative</td>
<td>[the innovation] is better or worse than other innovations or current practice.</td>
</tr>
<tr>
<td>Advantage</td>
<td></td>
</tr>
<tr>
<td>Innovation Adaptability</td>
<td>[the innovation] can be modified, tailored, or refined to fit local context or needs.</td>
</tr>
<tr>
<td>Innovation Trialability</td>
<td>[the innovation] can be tested or piloted on a small scale.</td>
</tr>
<tr>
<td>Innovation Complexity</td>
<td>[the innovation] is complicated, which may be reflected by its scope and/or the nature and number of connections and steps.</td>
</tr>
<tr>
<td>Innovation Design</td>
<td>[the innovation] is well designed and packaged, including how it is assembled, bundled, and presented.</td>
</tr>
<tr>
<td>Quality &amp; Packaging</td>
<td></td>
</tr>
<tr>
<td>Innovation Cost</td>
<td>[the innovation] purchase and operating costs are expensive</td>
</tr>
</tbody>
</table>

“…I find this one particularly confusing and not sure exactly why important [sic].”
## Innovation Characteristics

This domain captures perceptions of constructs specific to innovation being implemented.

<table>
<thead>
<tr>
<th>Innovation Definition</th>
<th>Describe the innovation including e.g., type, components, ideally using a standard reporting guideline.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Innovation Source</td>
<td>The group that developed and/or visibly sponsored use of the innovation is reputable, credible, and/or trustable.</td>
</tr>
<tr>
<td>Innovation Evidence</td>
<td>[the innovation] has robust evidence supporting its effectiveness.</td>
</tr>
<tr>
<td>Strength &amp; Quality</td>
<td></td>
</tr>
<tr>
<td>Innovation Relative</td>
<td>[the innovation] is better or worse than other innovations or current practice.</td>
</tr>
<tr>
<td>Advantage</td>
<td></td>
</tr>
<tr>
<td>Innovation Adaptability</td>
<td>[the innovation] can be modified, tailored, or refined to fit local context or needs.</td>
</tr>
<tr>
<td>Innovation Trialability</td>
<td>[the innovation] can be tested or piloted on a small scale and undone.</td>
</tr>
<tr>
<td>Innovation Complexity</td>
<td>[the innovation] is complicated, which may be reflected by its scope and/or the nature and number of connections and steps.</td>
</tr>
<tr>
<td>Innovation Design</td>
<td>[the innovation] is well designed and packaged, including how it is assembled, bundled, and presented.</td>
</tr>
<tr>
<td>Quality &amp; Packaging</td>
<td></td>
</tr>
<tr>
<td>Innovation Cost</td>
<td>[the innovation] purchase and operating costs are expensive.</td>
</tr>
</tbody>
</table>

---

**Whose VOICE?**

Individuals with influence or authority related to implementation:
- Leaders
- Facilitators
- Implementation Leads
- Implementation Team
- Other Support
- Deliverers
Voice of the Patient

“Not all receivers are called patients, some are clients, consumers, community, educators, learners”

Whose VOICE?

Individuals with influence or authority related to implementation:
✓ Leaders
✓ Facilitators
✓ Implementation Leads
✓ Implementation Team
✓ Other Support
✓ Deliverers
Voice of the Recipient

Across Domains

- **INDIVIDUALS**
  - ✓ Members of the Implementation Team

- **OUTER SETTING**
  - ✓ Recipient Characteristics
  - ✓ Socioecological Characteristics (e.g., community)

- **INNER SETTING**
  - ✓ Recipient-centered Culture
  - ✓ Equity Culture

- **PROCESS**
  - ✓ Engaging: Reach
  - ✓ Assessing Need

Whose VOICE?

Individuals with influence or authority related to implementation:
- ✓ Leaders
- ✓ Facilitators
- ✓ Implementation Leads
- ✓ Implementation Team
- ✓ Other Support
- ✓ Deliverers
Individuals

Deliverers & Recipients

E.g.,
- Providers who refer
- Clinicians who treat
- Teachers who educate

E.g.,
- Patients
- Children in schoolroom
- Community health worker
- Peer coach
This domain needs “…to be “focused more on who the individuals are and their underlying characteristics…”

Deliverers & Recipients
Individuals

Roles

- Leaders
  - High-level (executive, VP)
  - Mid-level (managers, supervisors)
- Opinion Leaders
- Facilitators
- Implementation Leads
- Implementation Team Members
- Other Implementation Support
- Deliverers

Specify:
[Inner Setting]
[Outer Setting]
Individuals

• Characteristics

Deliverers & Recipients

Figure 1 The COM-B system - a framework for understanding behaviour.

Michie et al 2011. DOI: 10.1186/1748-5908-6-42
**Characteristics**

- **Capability**
  *Individual has the necessary intrapersonal competence, knowledge, and skills to fulfill the role.*

- **Opportunity**
  *Availability of individual(s), allocation of time, assignment of authority and other factors conferred to the [Role], needed to fulfill the [Role]*

- **Motivation**
  *Individual is committed to fulfilling role.*
Inner Setting

Deliverers & Recipients
Inner Setting

- Structural Characteristics
  - Physical Infrastructure
  - Work Infrastructure
  - IT Infrastructure

“…more guidance needs to be provided”

“Create subcodes”
“I would separate this construct into two as it feels a bit double-barreled”

- Relational Connections
- Communications
Inner Setting

“Way too broad. Ends up becoming my ‘I don't know where else this fits’ bucket.”

- Culture
  - Recipient-centeredness
  - Deliverer-centeredness
  - Learning-centeredness
  - Human Equality-centeredness
Inner Setting

- Tension for Change
- Compatibility
- Relative Priority
- Incentive Systems
Inner Setting

“\(\text{This one is double barreled.}\)"
“\(\text{… local staff tend to mix this up with Reflecting & Evaluating}\)"

• Mission Alignment

Implementing and delivering [the innovation] is in line with the overarching commitment, purpose, or goals of [the Inner Setting].
Inner Setting

• Available Resources
  • Funding
  • Space
  • Materials & Equipment

“I break this out into subcodes.”
"I struggle with the nesting of the Implementation Climate and Readiness for Change constructs and sub-constructs."

CFIR Outcomes Addendum

CFIR Implementation Determinants

Antecedent Assessments
Acceptability, Appropriateness, Feasibility
Implementation Climate, Implementation Readiness

Implementation Outcomes

Anticipated Implementation Outcomes
Indicators of anticipated implementation success or failure

Actual Implementation Outcomes
Indicators of actual implementation success or failure

Innovation Determinants

Innovation Outcomes
Indicators of innovation success or failure: innovation impact on key constituents

Equitable Population Impact

Key Decision-Makers
Innovation Deliverers
Innovation Recipients
Outer Setting

Inner Setting

Deliverers & Recipients
Critical Incidents

* Salient large-scale, often unanticipated events, (e.g., pandemic, flood, mergers, buy-outs)*
“...it is very important to have a description of the community/state...Is it poor, predominantly minority, underserved, housing costs, etc.”

**Socioecological Characteristics**

- Economic (e.g., affluence), cultural (e.g., racism, ableism), and political (e.g., governance) beliefs, systems, and structures
Outer Setting

Inner Setting

Deliverers & Recipients

Recipient Characteristics
- was Patient Needs & Resources

Partnerships & Connections
- Was Cosmopolitanism

Market Forces
- was Peer Pressure

Names are “not intuitive” “hard to explain”
Outer Setting

“\textit{This is very broad and could be broken down further.}”

- Policies
- Performance Goals
- Financing
Process

This is the most difficult domain to code, as it seems to "intersect" with all of the other domains.

Deliverers & Recipients

Inner Setting

Dynamic interplay between Process (ACTION) and multi-level, ripple effects of CONTEXT.
“…there has been a lot of development of this domain since CFIR was published...”

The process domain could use additional fleshing out, particularly as it relates to being a non-linear process.
Process

Teaming

…join together, intentionally coordinating and collaborating on interdependent tasks
Process

- Assessing Needs
  - Deliverers
  - Recipients
- Context

NEW

Outer Setting
Inner Setting
Deliverers & Recipients

Reflecting & Evaluating
Planning
Doing
Engaging
\(+\) Adapting
Process

- Planning
  ...Choosing Strategies
  ...Setting Goals

planning/developing PDSA cycles, setting implementation goals (see OCM), planning pilots/incremental approaches
Implement in small phases, steps or cycles of change that cumulatively build, before scaling up more broadly with continued optimization until [Innovation] becomes routine.
The CFIR's constructs have been criticized for their wide-ranging and multi-faceted nature…This was particularly true for the Reflecting & Evaluating construct. When I present this project, I always talk about the time and effort it takes for leaders to allow staff and other reflect and evaluate what’s going on. I think there needs to be more emphasis on this construct.

- **Reflecting & Evaluating**
  - Implementation Progress
  - Innovation Progress
All other [Roles] moved to INDIVIDUALS

“Hard to know how to use these or operationalize them--some confusion with champion, implementation leaders, and opinion leaders, and [Inner Setting] leader engagement”
The degree to which [Roles]… join together, intentionally coordinating and collaborating on interdependent tasks.

EXAMPLE

Teaming

Consider using prescriptive frameworks… because CFIR is deterministic not prescriptive.
Key Themes

1. Increased Centering of Humans
2. More inclusive language
3. Equity & Teams
4. Codebook inclusion/exclusion guidance for qualitative data
5. Published OUTCOMES Addendum: Damschroder et al 2022
6. Guiding questions:
   a. What is the “thing” being implemented? What are perceptions about its properties?
   b. Where will implementation occur? From where will the Innovation be delivered?
   c. Who are the individuals most likely to influence or have authority over implementation? Who will deliver the Innovation?
   d. Where does the Outer Setting begin?
   e. To what extent do [Roles] do the actions necessary for sustained implementation?
Thank You