Continuous Quality Improvement for Clinical Teams
A Systematic Review of Reviews

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The VA **Evidence Synthesis Program (ESP)**, established in 2007, helps VA fulfill its vision of functioning as a continuously learning health care system. We provide timely, targeted, independent syntheses of the medical literature for the VHA to translate into evidence-based clinical practice, policy, and research.

**Nimble**
We adapt traditional methods, timelines, and formats to meet our partners’ specific needs.

**Rigorous**
Rigor, transparency, and minimization of bias underlie all our products.

**Relevant**
Emphasis on Veteran population helps ensure our reviews are relevant to VA decision-makers’ needs.
What is the ESP?

- ESP reports are used to help:
  - Develop clinical policies informed by evidence
  - Implement effective services and support VA clinical practice guidelines and performance measures
  - Set the direction for future research to address gaps in clinical knowledge
- Four ESP Centers across the US
  - Directors are VA clinicians and recognized leaders in the field of evidence synthesis, and have close ties to the AHRQ Evidence-based Practice Center Program
- ESP Coordinating Center in Portland
  - Manages national program operations, ensures methodological consistency and quality of products, and interfaces with stakeholders
  - Produces rapid products to inform more urgent policy and program decisions
- To ensure responsiveness to the needs of decision-makers, the program is governed by a Steering Committee composed of health system leadership and researchers

The ESP accepts **topic nominations** throughout the year, and nominations are considered every 4 months.
Is one continuous quality improvement (CQI) framework more effective than others in healthcare settings? Are there factors that affect the success or failure of different frameworks?
What is CQI?

Many frameworks

LEAN METHODOLOGY

IDENTIFY VALUE
MAP VALUE STREAM
CREATE FLOW
CREATE FLOW
SEEK PERFECTION

SIX SIGMA METHODOLOGY

MEASURE M
DEFINE D
ANALYZE A
IMPROVE I
CONTROL C

Three essential features

Designing with local conditions in mind

Systematic data guided activities

Iterative development and testing

Rubenstein 2014 Intl J Qual Health Care
Our process

Search for reviews
Our process

1822 citations

288 abstracts

Search for reviews

Screened titles and abstracts

Inclusion criteria

✓ In any healthcare setting?

✓ Self-identified as CQI

✓ Self-identified as one of our prespecified frameworks

✓ Comprised of CQI 3 essential features

✗ Component of CQI or QI

✗ Not a systematic review

8122 citations

288 abstracts
Our process

1822 citations

288 abstracts

- Screened titles and abstracts
- Screen full text + data abstracted

- A MeaSurement Tool to Assess systematic Reviews (AMSTAR2 quality score, 12 points possible)
- CQI framework(s) included
- Outcomes described
- Setting(s) included
- Search dates
- Discussion of contextual factors (using CFIR to guide process)
- Main findings
Our process

- Search for reviews
- Screened titles and abstracts
- Screen full text + data abstracted
- Sorted and synthesized

1822 citations

288 abstracts

36 reviews included
Results: AMSTAR2 Scores

Not many high quality reviews
Results: number of included studies

Very large numbers of includes for a systematic review
Results: key questions

Is one continuous quality improvement (CQI) framework more effective than others in healthcare settings? Are there factors that affect the success or failure of different frameworks?
### Results: what we found

<table>
<thead>
<tr>
<th>Effectiveness</th>
<th>Multiple</th>
<th>Lean Six Sigma</th>
<th>Lean Only</th>
<th>Six Sigma Only</th>
<th>Other CQI Frameworks</th>
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</thead>
<tbody>
<tr>
<td>1</td>
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<td></td>
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<tr>
<td>Effectiveness</td>
<td></td>
<td>9</td>
<td>10</td>
<td>2</td>
<td>8</td>
</tr>
<tr>
<td>Success Factors</td>
<td></td>
<td>3</td>
<td>3</td>
<td>9</td>
<td></td>
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</tbody>
</table>
Results: head to head comparison

Included relevant CQI frameworks
From NHS Scotland

Low quality score (2)
Old (from 2008)

- 5 organizational-level approaches for quality improvement:
  1. Total Quality Management
  2. the CQI method
  3. Lean and Six Sigma
  4. business process reengineering
  5. the IHI’s rapid cycle change (Model for Improvement)
No evidence that any single CQI strategy was more effective than others.

Significant overlap in defining and implementing different approaches

Local context should guide which CQI framework is implemented.

Powell 2008

“Necessary, but not sufficient” conditions

1. provision of resources to enable CQI
2. active engagement of frontline
3. sustained managerial focus and attention
4. use of multi-faceted interventions
5. coordinated action at all levels of the system
6. substantial investment in training/development
7. robust and timely data in supported IT systems
## Results: healthcare settings

<table>
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### Notes
- Healthcare
- Specific healthcare setting
- Condition-specific
- Not Reported

*more detailed version in report*
<table>
<thead>
<tr>
<th>MANY REVIEWS</th>
<th>BUT…</th>
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</thead>
<tbody>
<tr>
<td>• Mostly focused on Lean/Six Sigma</td>
<td>• None of the 11 reviews that included more than 1 CQI strategy reached a strong conclusion that any strategy was superior to any other(s).</td>
</tr>
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<td>• CQI frameworks may be successfully implemented in a variety of clinical settings.</td>
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Results: key questions

Is one continuous quality improvement (CQI) framework more effective than others in healthcare settings? Are there factors that affect the success or failure of different frameworks?
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<th>MANY REVIEWS</th>
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<td>• 15 reviews with some info</td>
<td>• Very little information provided</td>
</tr>
<tr>
<td>• Addressed three CFIR domains</td>
<td>• Superficial discussion, not</td>
</tr>
<tr>
<td>• intervention characteristics (n=15)</td>
<td>enough to draw strong</td>
</tr>
<tr>
<td>• characteristics of individuals (n=6)</td>
<td>conclusions about how these</td>
</tr>
<tr>
<td>• inner setting (n=10)</td>
<td>relate to success or failure</td>
</tr>
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</table>

Results: other effectiveness reviews
Limitations

- Only covers what is included in identified reviews
- Evolving terminology/definitions $\rightarrow$ no reliable, standardized term for identifying relevant literature
- Likely publication bias

- Low quality reviews overall
- Comparative effectiveness relied on one older review
- Not sure what “it” is: lack of definitional clarity around frameworks
- Not sure how “it” is done: lack of implementation/contextual detail
No one right answer, overlap in use
Some CQI frameworks have different focus or more evidence with certain settings
Lean/Six Sigma may work best when outcomes are “repetitive and can be standardized”
Iterative, context-sensitive interventions that engage critical thinking
NO plug and play if done right

Local context should guide which CQI framework is implemented.
Lean is still going strong
• QUERI researchers
  • doing trainings
  • using rigorous and novel methods to study HOW and WHEN and WHY these interventions work
Acknowledgements

Our Team

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A Systematic Review of Reviews

Full-length report available here:
http://vaww.hsrdr.research.va.gov/publications/esp/reports.cfm

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