**Appendix:**

*Key Search Terms:*

Quality improvement or patient safety study that must include the use of at least one Lean Thinking process:

* A3 Project Management
* Work Flow or Process Mapping (aka Value Stream Mapping)
* Formal root cause analysis process (e.g. 5 Why’s, Fishbone/Ishikawa diagram, Pareto analysis)
* Plan-Do-Study/Check-Act cycle(s)
* Gemba
* Pull system
* Continuous Improvement
* Andon
* Kaizen
* Standardize Work
* Seven Wastes
* Visual Control or Visual Management
* Lead Time,
* Just in Time
* Non-value added work
* Kanban
* Takt Time
* Total Productive Maintenance
* Total Quality Management

The quality improvement or patient safety study must also include the use of at least one Implementation Science determinants checklist to guide implementation based on understanding barriers and facilitators:

* Technology Acceptance Model. (28) (**Journal of biomedical informatics,** v. 43, n. 1, p. 159, 07/15 2010)
* Theoretical Domains Framework (29) (**Quality and Safety in Health Care,** v. 14, n. 1, p. 26, 2005)
* Consolidated Framework for Implementation Research (30) (**Implementation Science,** v. 4, n. 1, p. 50, 2009/08/07 2009)
* Tailored Implementation for Chronic Disease (21) (**Implement Sci,** v. 8, p. 35, Mar 23 2013)

*Database Search Terms*

Embase – 20180928 – 1 citation (update from 20180829)

(“lean methodology” OR “lean methodologies” OR “lean method” or “lean methods” OR OR “total quality management” OR “six sigma” OR “lean intervention” OR “lean interventions” OR “lean implementation” OR “lean implementations” OR "systems engineering" OR a3 OR “process mapping” OR “value stream mapping” OR “formal root cause analysis” OR “pareto analysis” OR “fishbone diagram” OR “ishikawa diagram” OR gemba OR “pull system” OR andon OR kaizen OR “continuous improvement” OR “seven wastes” OR “visual control” OR “visual management” OR “non-value added work” OR Kanban OR “takt time” OR “total productive maintenance” OR “total quality management” OR “lead time” OR lean):ab,ti OR (lean AND “just in time”):ab,ti OR (lean AND redesign\*):ab,ti

(“consolidated framework for implementation research” OR “implementation science” OR “implementation sciences” OR “theoretical domains framework” OR "knowledge translation" OR “technology acceptance model”):ab,ti OR (tailored AND implementation):ab,ti

Scopus – 20180928 – no update with PUBDATETXT August 2018 or September 2018

TITLE-ABS((“lean methodology” OR “lean methodologies” OR “lean method” or “lean methods” OR “total quality management” OR “six sigma” OR “lean intervention” OR “lean interventions” OR “lean implementation” OR “lean implementations” OR "systems engineering" OR a3 OR “process mapping” OR “value stream mapping” OR “formal root cause analysis” OR “pareto analysis” OR “fishbone diagram” OR “ishikawa diagram” OR gemba OR “pull system” OR andon OR kaizen OR “continuous improvement” OR “seven wastes” OR “visual control” OR “visual management” OR “non-value added work” OR Kanban OR “takt time” OR “total productive maintenance” OR “total quality management” OR “lead time” OR lean) OR (lean AND “just in time”) OR (lean AND redesign\*))

AND

TITLE-ABS(health OR "primary care" OR medic\* OR hospital\* OR pharmac\* OR nurs\* OR clinic\* OR health\*)

AND

TITLE-ABS ("consolidated framework for implementation research" OR "implementation science" OR "implementation sciences" OR "theoretical domains framework" OR "knowledge translation" OR "technology acceptance model" ) OR ( tailored AND implementation )

PubMed – 20180928 – 5 references from 20180628

Journals: (implementation science [jour] OR bmj quality and safety [jour])

Implementation science: “consolidated framework for implementation research” [tw] OR “implementation science” [tw] OR “implementation sciences” [tw] OR “theoretical domains framework” [tw] OR (tailored [tiab] AND implementation [tiab]) OR "knowledge translation" [tw]

OR “technology acceptance model” [tiab]

Lean: “lean methodology” [tiab] OR “lean methodologies” [tiab] OR “lean method” [tiab] or “lean methods” [tiab] OR (quality improvement [mh] AND lean [tiab]) OR total quality management [mh] OR “six sigma” [tiab] OR “lean intervention” [tiab] OR “lean interventions” [tiab] OR “lean implementation” [tiab] OR “lean implementations” [tiab] OR (lean [tiab] AND (redesign OR redesigns [tiab])) OR "systems engineering" [tiab] OR a3 [tiab] OR “process mapping” [tiab] OR “value stream mapping” [tiab] OR “formal root cause analysis” [tiab] OR “pareto analysis” [tiab] OR “fishbone diagram” [tiab] OR “ishikawa diagram” [tiab] OR gemba [tiab] OR “pull system” [tiab] OR andon [tiab] OR kaizen [tiab] OR “continuous improvement” [tiab] OR “seven wastes” [tiab] OR “visual control” [tiab] OR “visual management” [tiab] OR “non-value added work” [tiab] OR Kanban [tiab] OR “takt time” [tiab] OR “total productive maintenance” [tiab] OR “total quality management” [tiab] OR “lead time” [tiab] OR (lean [tiab] AND “just in time” [tiab]) OR lean [tw]

Notes: did not include “tailored implementation for chronic disease”, “work flow mapping” or “standardize work” – no matches in PubMed