

LEAN healthcare can improve length of stay and wait times in outpatient care

Tlapa D, Zepeda-Lugo CA, Tortorella GL, Baez-Lopez YA, Limon-Romero J, Alvarado-Iniesta A, et al. [Effects of LEAN healthcare on patient flow: A systematic review](#). Value in Health. 2020;23(2):260–73.

What is the context of this review?

- Outpatient care (also called ‘ambulatory care’) refers to medical services performed without admission to a hospital, which include emergency and clinical visits, imaging and other diagnostic services, laboratory tests and outpatient surgery.
- Indicators of patient flow in outpatient care include waiting times and length of stay.
- LEAN healthcare is a strategy which aims to reduce or eliminate waste and activities that do not add value to healthcare processes.
- While some studies found potential benefits of LEAN healthcare on process outcomes, it is unclear whether it has an impact on patient flow in outpatient care.

Box 1: Coverage of OHT building blocks

This review addresses [OHT building block #1](#):

- 1) defined patient population (**domain 3 – patient-access targets**)
- 2) in-scope services
- 3) patient partnership and community engagement
- 4) patient care and experience
- 5) digital health
- 6) leadership, accountability and governance
- 7) funding and incentive structure
- 8) performance measurement, quality improvement, and continuous learning

What question is being addressed?

- What is known about the effectiveness of LEAN healthcare on patient flow outcomes within outpatient care (for example, length of stay and waiting times)?

How was the review done?

- A detailed search of several electronic databases was conducted between July 2018 and February 2019 for studies published in English.
- Studies that focused on LEAN healthcare within outpatient care and on patient flow were included.
- A total of 5,627 studies were identified in searches and 40 were included in the review after assessments for eligibility.
- No sources of funding were disclosed by the authors.

How up to date is this review?

- The authors searched for studies published between January 2002 and December 2018.

What are the main results of the review?

- The majority of studies (30 out of 40 studies) focused on LEAN interventions only, a minority examined LEAN combined with Six Sigma methodology (6 out of 40 studies), and the remaining examined LEAN combined with other strategies (4 out of 40 studies).
- All studies explored LEAN healthcare interventions in a specific department or process, as opposed to an entire organization.
- Most studies reported improvements regarding shorter length of stay and shorter wait times after implementing a LEAN healthcare intervention.
- Interventions combining LEAN and Six Sigma revealed mixed results.
- Most of the studies that involve professionals from different areas of the LEAN healthcare team reported better performance in patient flow. This finding reflects the importance of getting buy-in from all stakeholders involved (and that they must act with the same levels of understanding and support for the method).
- Evidence of the impact of LEAN healthcare on patient satisfaction, staff satisfaction and cost savings remain limited.

How confident are we in the results?

- This is a recent and high-quality systematic review with a AMSTAR rating of 9/10.
- As mentioned by the authors, it is important to remain cautious when generalizing the findings due to relatively weak study designs, limited follow-up to evaluate the impacts and sustainability of LEAN healthcare interventions, some risk of bias, and the multiple components of LEAN healthcare processes and contexts.

RISE prepares both its own resources (like this plain-language summary) that can support rapid learning and improvement, as well as provides a structured 'way in' to resources prepared by other partners and by the ministry ([access all resources here](#)). The plain-language summaries produced by RISE are funded through a grant from the Ontario SPOR SUPPORT Unit (OSSU) to the McMaster Health Forum. RISE is also supported by a grant from the

Ontario Ministry of Health to the McMaster Health Forum. The opinions, results, and conclusions are those of RISE and are independent of those from its sponsors. No endorsement by the sponsors is intended or should be inferred.