

Lean Management and Integrated Care in Europe: An Effective Mix for a Health System

Livio Garattini^{1,*}, Marco Badinella Martini¹

¹Department of Health Policy, Istituto di Ricerche Farmacologiche Mario Negri IRCCS, Milan, Italy

*Correspondence: livio.garattini@marionegri.it (Livio Garattini)

Abstract

A rational organization of health care services has become a major problem for European countries. Here, we summarize the concepts of lean management (LM) and integrated care (IC) and discuss the major issues to be resolved to make them effective. LM is a systematic approach for reducing waste in a procedure by considering any type of work to be the sum of several processes. The strength of LM lies in involving all employees into a problem-solving approach. IC implies a positive approach against the fragmentation of service provision in order to undermine the silos generated within health services. The success of LM and IC depends on how three major problems will be faced: their holistic application, some baseline training on management and organization provided to health professionals, and the full support of health managers. Future analysis on the organization of health systems should focus on how to improve healthcare services by a full collaboration between health workers.

Key words: health professionals; holistic approach; integrated care; lean management; health-care organization

Submitted: 7 January 2025 Revised: 25 February 2025 Accepted: 3 March 2025

Introduction

The long-term trend of ageing people requiring more and more health care has put under pressure many European health systems. As a consequence, a rational management of health care services from an organizational point of view has become a major problem.

If one accepts that public health systems should be preferred to the private ones for both funding and provision since health is a ‘merit good’ (Garattini and Badinella Martini, 2023), a managerial culture based on collaborative teamwork should be more indicated than a culture inspired by competition. Therefore, the next step should be to implement the suitable strategies to make more efficient public health care services and thus eliminate the majority of wastes.

In this editorial we summarize the key concepts of lean management (LM) and integrated care (IC), which could significantly improve the organization of health services if systematically implemented. Finally, we discuss the major issues to resolve in order to make LM and IC concretely effective within the public health systems.

How to cite this article:

Garattini L, Badinella Martini M. Lean Management and Integrated Care in Europe: An Effective Mix for a Health System. *Br J Hosp Med*. 2025. <https://doi.org/10.12968/hmed.2025.0019>

Copyright: © 2025 The Author(s).

Lean Management (LM)

Starting from the end of the last century the Japanese Toyota car company began testing LM in order to limit the production defects of its cars, which were progressively increasing and thus were undermining its market share ([Akmal et al, 2020](#)). Later extended to health care at the beginning of the new century ([Zdeba-Mozola et al, 2023](#)), LM is a managerial concept which can be applied to any organization in order to improve operational processes ([Prado-Prado et al, 2020](#)).

LM is a systematic approach that considers any type of work to be the sum of several processes ([Smith et al, 2020](#)). Even though the organization of health services is expected to be quite complex compared to that of a lot of different industries ([Akmal et al, 2020](#)), nevertheless many problems are common, and positive lessons are likely to be drawn from other sectors too ([Macrae and Stewart, 2019](#)). The major aim of LM is to enhance the quality of services delivered in health care by doing more and using less in the shortest time ([Prado-Prado et al, 2020](#)).

In practice, LM is a managerial system that implies the development of an organizational culture aimed at fully involving employees in the discovery and elimination of all types of unintentionally generated wastes. The LM overarching goal is to increase the overall performance of healthcare services so as to create more value for patients ([Amati et al, 2022](#)). All care provided to patients has to be seen as a logical sequence of activities delivered by professionals ([Vijverberg et al, 2023](#)). For example, if a patient needs a consultation (e.g., in neurology) in a short time following the results of a specific test, the treating consultant (e.g., a geriatrician) could refer the patient directly to the neurologist, without requiring an additional hospital visit. Ultimately, the potential strength of LM lies in fully involving all employees into a problem-solving approach.

Integrated Care (IC)

Following the launch in 2000 of the first international journal that included the term IC in its name, the key concept of IC is nowadays widely used in the international literature. IC implies a positive attitude towards addressing fragmentation of services delivered within health care systems ([Garattini et al, 2022](#)). Striving for combining parts to form a whole, IC has certainly positive purposes because its overarching goal is to improve care and treatments provided to patients. Recently, even the European Office of the World Health Organization (WHO) issued a working document to support IC ([Garattini et al, 2022](#)). Overall, the quadruple aim of IC is to improve people health, enhance patient experience, boost the efficiency of health care services, and improve the work life of health professionals ([Baxter et al, 2018](#)).

In healthcare, like in every supply chain, integration can be pursued both vertically and horizontally. Vertical integration brings together services delivered at different stages (for instance, general practitioner (GP) practices in primary care and hospital departments in secondary and tertiary care), whereas horizontal integration helps optimize the delivery of services at the same stage (for instance, hospital services). Thanks to the adoption of a holistic approach, IC aims to eliminate

the borders among healthcare services and encourage the communication inside the three levels of care vertically and at the same stage horizontally. This approach should help to undermine the silos generated within health services in the different levels of care. IC initiatives might also highlight ‘unmet needs’ within and beyond health care, especially for complex and multi-morbid patients ([Baxter et al, 2018](#)). This could eventually lead to further costs rather than savings in the future. The increasing need of IC mirrors the growing demand for social and health services generated by aging multi-morbid patients living in the community with physical and cognitive impairments ([Garattini et al, 2022](#)), which nowadays represents the major challenge for welfare systems in high-income countries.

Crucial Issues

Once agreed that public health services require a climate of seamless collaboration between health professionals so as to optimize their performances, LM and IC can be considered two useful concepts for their planning and management. In practice, their successful adoption will strongly depend on how three major problems will be faced.

Firstly, LM and IC have to be applied holistically in health systems, from micro (operational) to macro (policy) level, so as to avoid achieving only partial objectives. Paradoxically, local results could also induce negative effects elsewhere owing to the huge volume of interdependent procedures existing within health services ([Mahmoud et al, 2021](#)). Health organizations (typically hospitals) often try to maximize their specialties without taking into account the whole interests of the health system, generating many silos in the long run. Notably, the goals of the broad health systems hardly coincide with those of the specific services, and the vast majority of health care professionals are not trained to fully understand how the systems must be designed to function effectively as a whole ([Amati et al, 2022](#)). Ultimately, striving for optimizing the medical pathways of patients through a seamless flow process, the holistic approach is the most effective strategy to eliminate departmental silos and increase both vertical and horizontal integration in the long term ([Akmal et al, 2020](#); [Vijverberg et al, 2023](#)).

Secondly, some basic training on management and organization provided to all health care professionals should be a useful tool to make them aware that scientifically rigorous evidence is not necessary to demonstrate the practical efficiency of LM and IC initiatives. The outcome measures and the final results of organizational studies are hard to compare objectively because usual care may vary widely at local level inside the same health care system too ([Garattini et al, 2022](#)). This makes the design of any organizational study prone to the subjective discretion of single researchers so their empirical results are hardly extendable to other contexts. Moreover, the organizational approach based on scientific proofs mainly tends to focus on specific tools in limited areas rather than health care systems as a whole ([Akmal et al, 2020](#)). Since the educational training received by health professionals mainly taught them to rely on evidence-based clinical trials, health care managers must make physicians and nurses aware of the major limits of organizational studies.

Thirdly, LM and IC initiatives need the full support of health care managers to succeed (Amati et al, 2022). Indeed, the power structure of health care services is somehow inverted compared to the vast majority of the other fields, making them rather peculiar from an organizational viewpoint. In fact, the health professionals hierarchically placed at bottom levels can affect the daily decision-making processes much more than their colleagues at top levels (Garattini et al, 2022). As a consequence, changes in medical practice are much easier to be accepted through shared managerial strategies based on bottom-up incremental steps rather than top-down organizational rules. Therefore, the main barriers against the positive adoption of LM and IC initiatives might be raised by the reluctance of health professionals to accept them, starting from nursing and medical staff working directly with patients (Zdeba-Mozola et al, 2023). Accordingly, the most appropriate role of health managers is to discover the existing problems and drive the solving procedures rather than trying to sort out them on their own (Winner et al, 2022).

Conclusion

Raising awareness on the huge benefits of cooperation among all employees should contribute to spread a fully shared culture of teamwork, hopefully eliminating the vast majority of wastes within public health systems in a positive perspective of patient-centered care. Because full staff involvement is a crucial factor of success for disseminating best practices, job rotation of health professionals between health care services should be enhanced to encourage both teamwork and benchmarking within health care systems. This organizational approach should also contribute to limit professional burnout and discomfort, which are dramatically increasing among health professionals everywhere.

Once put aside forever the completely unjustified myth of competition in health-care, which is not supported by economic theory, future analysis on the organization of public health systems should concentrate exclusively on how to systematically boost the quality of healthcare services delivered by adopting a positive attitude of full collaboration between health workers.

Key Points

- A rational management of health care services from an organizational viewpoint has become a crucial issue in our continent.
- An organizational culture rooted in collaborative teamwork should fit much better in health care than a competitive one.
- LM implies a systematic improvement approach, which phases any work as a sum of processes that can be continuously monitored to eliminate any kind of waste.
- The primary purpose of IC is to span the borders and to improve the communication within healthcare services at the same stage of care horizontally and among the three levels of care vertically.
- IC and LM must be applied holistically in health care services and the support of health care management is fundamental for their successful implementation.
- Raising awareness on the benefits of cooperation among all employees (for themselves too) should generate a culture of teamwork and help delete all useless barriers and wastes within public health systems.

Availability of Data and Materials

All the data of this study are included in the article.

Author Contributions

LG and MBM designed the editorial. LG drafted the manuscript. Both authors contributed to the important editorial changes in the manuscript. Both authors read and approved the final manuscript. Both authors have participated sufficiently in the work and agreed to be accountable for all aspects of the work.

Ethics Approval and Consent to Participate

Not applicable.

Acknowledgement

The authors would like to thank their colleague Teuna Kaapmeiners for her technical help.

Funding

This research received no external funding.

Conflict of Interest

Livio Garattini is serving as one of the Editorial Board Members of this journal. We declare that Livio Garattini had no involvement in the review of this article and has no access to information regarding its review. Marco Badinella Martini declared no conflict of interest.

References

- Akmal A, Greatbanks R, Foote J. Lean thinking in healthcare - Findings from a systematic literature network and bibliometric analysis. *Health Policy*. 2020; 124: 615–627. <https://doi.org/10.1016/j.healthpol.2020.04.008>
- Amati M, Valnegri A, Bressan A, La Regina D, Tassone C, Lo Piccolo A, et al. Reducing Changeover Time Between Surgeries Through Lean Thinking: An Action Research Project. *Frontiers in Medicine*. 2022; 9: 822964. <https://doi.org/10.3389/fmed.2022.822964>
- Baxter S, Johnson M, Chambers D, Sutton A, Goyder E, Booth A. The effects of integrated care: a systematic review of UK and international evidence. *BMC Health Services Research*. 2018; 18: 350. <https://doi.org/10.1186/s12913-018-3161-3>
- Garattini L, Badinella Martini M, Mannucci PM. Integrated care: easy in theory, harder in practice? *Internal and Emergency Medicine*. 2022; 17: 3–6. <https://doi.org/10.1007/s11739-021-02830-9>
- Garattini L, Badinella Martini M. Modeling European health systems: a theoretical exercise. *The European Journal of Health Economics: HEPAC: Health Economics in Prevention and Care*. 2023; 24: 1249–1252. <https://doi.org/10.1007/s10198-023-01628-0>
- Macrae C, Stewart K. Can we import improvements from industry to healthcare? *BMJ (Clinical Research Ed.)*. 2019; 364: 11039. <https://doi.org/10.1136/bmj.11039>
- Mahmoud Z, Angelé-Halgand N, Churrua K, Ellis LA, Braithwaite J. The impact of lean management on frontline healthcare professionals: a scoping review of the literature. *BMC Health Services Research*. 2021; 21: 383. <https://doi.org/10.1186/s12913-021-06344-0>
- Prado-Prado JC, García-Arca J, Fernández-González AJ, Mosteiro-Añón M. Increasing Competitiveness through the Implementation of Lean Management in Healthcare. *International Journal of Environmental Research and Public Health*. 2020; 17: 4981. <https://doi.org/10.3390/ijerph17144981>
- Smith I, Hicks C, McGovern T. Adapting Lean methods to facilitate stakeholder engagement and co-design in healthcare. *BMJ (Clinical Research Ed.)*. 2020; 368: m35. <https://doi.org/10.1136/bmj.m35>
- Vijverberg JRG, Rouppe van der Voort MBV, van der Nat PB, Mosselman MJ, Rigter S, Biesma DH, et al. How to Use Lean Thinking for the Optimization of Clinical Pathways: A Systematic Review and a Proposed Framework to Analyze Pathways on a System Level. *Healthcare*. 2023; 11: 2488. <https://doi.org/10.3390/healthcare11182488>
- Winner LE, Reinhardt E, Benishek L, Marsteller JA. Lean Management Systems in Health Care: A Review of the Literature. *Quality Management in Health Care*. 2022; 31: 221–230. <https://doi.org/10.1097/QMH.0000000000000353>
- Zdęba-Mozoła A, Kozłowski R, Rybarczyk-Szwajkowska A, Czapla T, Marczak M. Implementation of Lean Management Tools Using an Example of Analysis of Prolonged Stays of Patients in a Multi-Specialist Hospital in Poland. *International Journal of Environmental Research and Public Health*. 2023; 20: 1067. <https://doi.org/10.3390/ijerph20021067>