

First-order System Design Flaws That Challenge Acute Care Capacity Improvement

1. Lack of Customer Focus - failure to understand customer needs & designing services without a deep understanding of what the customer values.

2. Poor Workflow Design - unnecessary complexity, excessive steps, handoffs, create bottlenecks, increases cycle time, and lead to errors.

3. Inefficient Resource Allocation - improper allocation for tasks can result in inefficiencies, either in the form of wasted capacity or long customer wait times.

4. Ignoring Process Variability - Service processes are often subject to variability, failing to account for this leads to delays or inefficiencies.

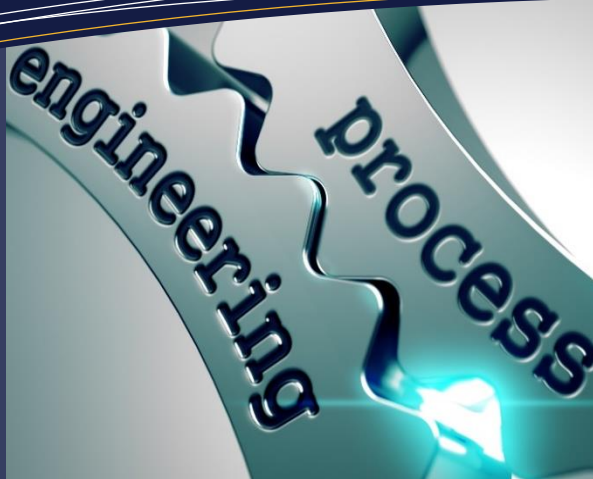
5. Lack of Feedback Mechanisms - Without real-time feedback, it is difficult to detect and correct problems quickly, leading to service degradation.

6. Inadequate Use of Technology - Designing a process around inefficient or legacy technology can create delays and errors in service delivery.

7. Poor Communication Channels - lack of transparency and fragmented communication can result in lost information, inconsistent messaging, and delays.

8. Ignoring Employee Capacity - Overloading employees with tasks or not allowing adequate time for them to perform their duties leads to burnout, mistakes, and a lower quality of service.

Understanding how these first-order design flaws exacerbate the causal factors identified in Part-1 of this series is an important prerequisite to creating a viable and sustainable solution



this issue

Understanding Why Continuous Improvement Efforts Applied To The Hospital Acute-Care Capacity Challenge Are Failing To Deliver Meaningful Results.

Unpacking the Acute Care Crisis: Exploring the Shortage of Hospital Beds and the Factors Fueling It in the U.S. Part-2 of 3

Introduction:

This is Part-2 of a three-part series exploring the shortage of acute-care hospital beds, the factors fueling it in the U.S., and proposing a process for creating a successful solution set.

Part-1 of this series <https://www.bradley-schultz.com/at-the-forefront> dove into the causal factors driving the shortage.

Understanding these drivers is critical in formulating a sustainable, root-cause, solution.

Part-2 will dive deeper into the ramifications of the issue, along with the unique challenges in creating a viable and sustainable solution set.

Many hospitals have tried employing continuous improvement techniques and length-of-stay reduction efforts to expand capacity, with marginal success. This article will explore why.

Important Definitions:

Part-3 of this series will propose an integrated solution based on a systems design approach vs continuous improvement. This article will

explore first-order system design flaws that exacerbate the causal factors identified in Part-1 and make continuous, incremental improvement efforts challenging, if not impossible, in this situation.

What is a system? Deming, defined a system as "a network of interdependent components that work together to try to accomplish the aim of the system." He emphasized that each component of a system must work, not in isolation, but in harmony with the others to achieve a shared goal. Further, healthcare is a complex, adaptive system; a dynamic network of interacting components that adapt to changes in the environment and to each other in unpredictable ways.



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At The Forefront



The Authors

Bradley (Brad) Schultz and Dr. Martin (Marty) Lucenti co-authored this series. Brad and Marty have been colleagues for over 15 years. Both have deep experience in complex adaptive systems. Together, they have redesigned the Emergency Departments of over thirty-five hospitals. They were creating in many of them wait-free performances.

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These systems are characterized by their ability to evolve, learn, and self-organize in response to internal and external stimuli. The complex-adaptive nature of healthcare will significantly challenge a continuous, incremental improvement approach to large-scale problems, like capacity management. A detailed comparison of complex-adaptive systems vs ordered systems may be found here: https://www.bradley-schultz.com/files/ugd/2b8e40_3946981c54604370a4fb9cd9da92a632.pdf

What are First-Order Design Flaws? First-order design flaws in service processes refer to fundamental mistakes or deficiencies in the way a service process is structured from the outset. These are often systemic issues that lead to inefficiencies, poor customer experience, or increased costs. A list of first-order design flaws that exacerbate the factors causing acute care capacity shortages are listed in the sidebar on page-1. Keep in mind, *it is impossible to build a high-reliability system on unreliable components!*

Lessons From The Pandemic & Moving Forward:

The COVID-19 pandemic exposed several first-order design flaws in healthcare's ability to effectively sync capacity and demand, revealing structural weaknesses in the system's adaptability and resilience. Many organizations attempted to "length-of-stay (LOS) reduce" their way into improved capacity, often using continuous improvement efforts. Figure-1 below illustrates post pandemic observed vs expected LOS and revealed that early efforts did not produce results, and more recent efforts have delivered limited results and not enough to address the capacity shortage.

An important first step in developing a viable and sustainable improvement, using a systems design approach, is to develop a deep understanding of the extent the enterprise is affected by the causal factors listed in Part-1 of this series. The next, is to understand the extent that they interact with first-order design flaws present within the enterprise. Part-3 will propose a systems design approach forward – *Stay Tuned!*

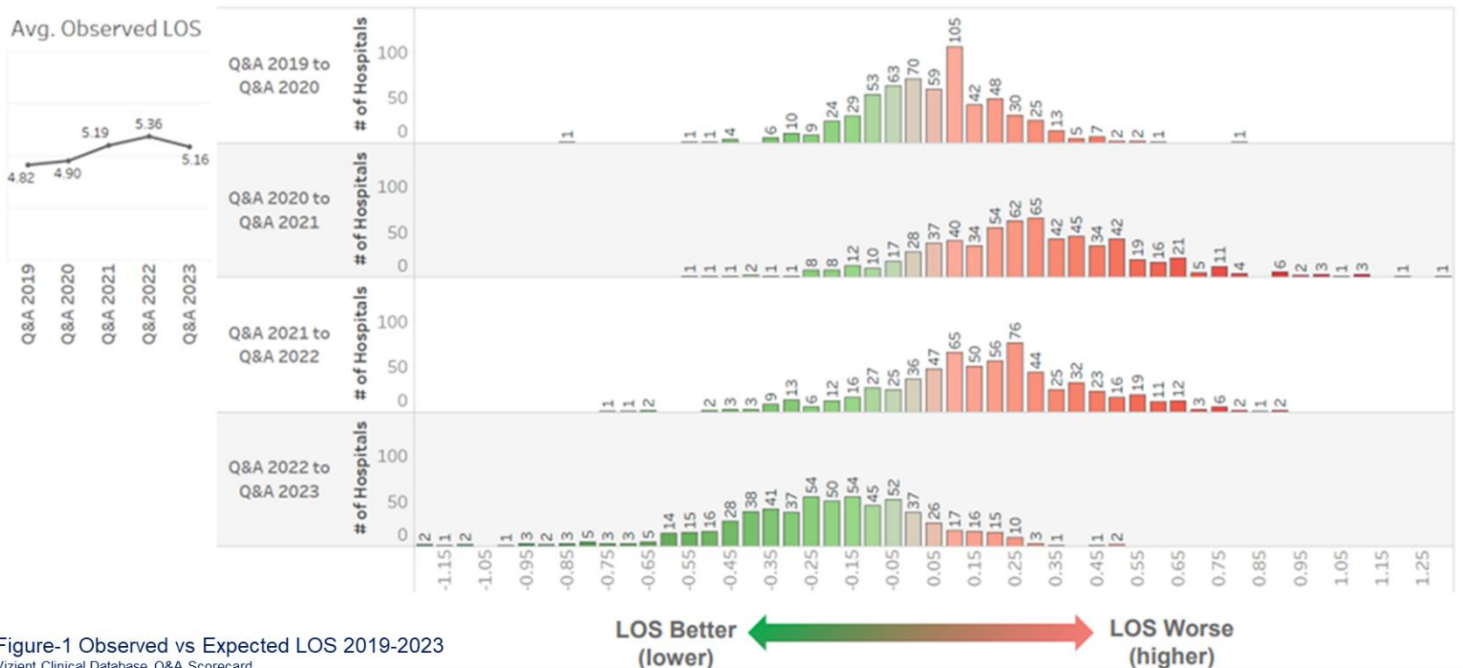


Figure-1 Observed vs Expected LOS 2019-2023
 Vizient Clinical Database Q&A Scorecard