

Frequently Asked Questions About Lean Healthcare

1. What is lean healthcare?

Lean healthcare is a systematic approach to aligning work at each level and step of the healthcare organization or patient experience so that the skill, knowledge, experience, materials and information necessary for quality outcomes is provided.

2. What are some examples of how lean healthcare has been executed successfully in the healthcare market?

- Patient flow: Admission and discharge process, emergency department admission, same day surgery admissions, operating room turnover process, and on time starts in the surgical suite.
- Patient scheduling
- Inventory management
- Medication administration process
- Medication reconciliation process
- Laboratory results turnaround time
- Radiology results turnaround time
- Accuracy of billing and turnaround times
- Core measure compliance
- Accuracy in attending physician assignment
- Time to elective admission
- Information systems selection
- Standardization of surgical instrumentation

3. What are some of the tools that have been used to eliminate waste and streamline efficient services in healthcare?

- Process maps
- Value stream maps
- 5S methods/Visual Controls
- Kaizen Activities – Rapid cycle
- Mistake proofing
- Standardized work
- Quick Hand-off/Changeover
- Cellular Layout (Batch sizing and facility layout)
- Kanban

4. What courses are available in lean healthcare?

- **Lean 100 Healthcare with Pharmacy Simulation-** This 4 hour course is designed for employees at all levels to introduce and demonstrate lean tools applied in a healthcare process using medication administration and dosage-based simulation.
 - **Organizational Strategy for Lean Healthcare Deployment-**This 4 to 8 hour offering is designed for senior executives to set the vision and cultural change requirements for the organization. Included offerings are:
 - Executive Overview 501: (Session 1) this 4 hour offering describes what is lean, how lean initiatives have been successfully executed in healthcare organizations, and the role of senior leaders.

- Executive Overview 502: (Session 2) This 4 hour offering enables leaders to create the list of their strategic priorities and align them with potential projects for implementation in their organization.
- **Lean Office-** A 2 day course to teach participants how to apply lean tools in an office environment. Perfect for administrative processes in healthcare, such as billing, purchasing, training, hiring, etc.
- **A3 Problem Solving for Healthcare-** This 6 hour offering targeting executives, management staff and lean champions, will discuss the use of an A3, the different types of A3's, when they are used, how they are used and will include hands on practice for their creation.
- **Value Stream Mapping-**The VSM course is a 4 to 8 hour offering using a hands-on approach that demonstrates the value of mapping information flow, step by step task progression, cycle times, and the functional needs of a healthcare-based process. Participants may vary based on the type of process being studied and mapped.
- **5S/Visual Controls-**This course teaches the 5S principles – sort, set-in order, shine, standardize and sustain. When used effectively in a healthcare setting, these principles will help to gain efficiency in your processes. Visual controls enable immediate recognition of how areas/processes are running. This course will help recognize the value of efficiency within your areas of influence. The primary audience targets front line employees who will redesign their work area and processes; however, all levels of employees are welcome to attend. The first session will last 4 hours including classroom content, discussion and exercises, while the second 4 hour session will have the option of auditing a specific healthcare work area and initiating a kick off redesign using 5 S and visual controls.
- **Standardized Work/One Point Lessons-**This course teaches the importance of having standard work-- a breakdown of what you do, when it should be completed, and how long it should take. It standardizes a process for consistency to ensure repeatable quality and safety. This offering may last 4 to 8 hours depending on needs of the organization and targets front line leaders and management staff.
- **Kanban/Pull System-**This 4 to 8 hour course teaches what a kanban/pull system is, how it works and where it best fits into a process. This tool helps to minimize inventory and costs. Employees who manage medical and surgical inventory, supply management and distribution systems are best suited for this offering.
- **Problem Solving for Healthcare-**This 4 hour course teaches simple tools such as Pareto charts, fishbone diagrams, and the five why's to multidisciplinary personnel to enable quick visualization of potential root cause, and allows a final solution for the problem without causing further negative impact either up or downstream in healthcare environments. Small groups will complete a lean problem solving tool specific to their organizational issue and present their findings to the large group for additional input and discovery.
- **Kaizen Lab-**Two to five day kaizen activities. Kaizen is an intense, focused improvement in a very specific area of a process or healthcare facility. This lab is designed to teach the ten points of kaizen methodology in a very hands-on, adult learning environment and will be applicable to all multidisciplinary teams and individuals who touch the process.
- **Shingo plant tours-**Let participants see inside of industries that are successfully implementing lean. A separate session for healthcare affiliates has been scheduled to include a networking and problem solving lunch. This focused healthcare discussion group is co-sponsored by the North Carolina Hospital Association's Center for Hospital Quality and Patient Safety.

5. Why should healthcare organizations implement lean healthcare methods and cultural change?

The time is now to create healthcare systems that are no longer broken; for nurses, doctors, technicians and all healthcare employees to regain their trust and promote an error-free work environment. The [Institute of Medicine Report](#) dating back to 1998 highlights **preventable** errors that have occurred in the workplace, resulting in patient death. We believe that human beings make errors because of systems that are broken in their workplace. Lean healthcare is a systematic methodology used to redesign point of service operations and patient care. In order to be effective, an organization-wide strategy must be deployed to enable cultural change.

6. When and how can we implement lean methodologies in our organization?

As soon as possible, and in consideration of other valuable methods currently in operation in your organization. Our recommended process is:

- a. Contact your local [IES account manager](#)
- b. Schedule an on-site review and discussion of your organizational needs and lean healthcare methodology
- c. Identify strategic priorities for your organization and select target projects
- d. Schedule partnership initiatives for lean healthcare
- e. Negotiate a service agreement with an account manager
- f. Begin your lean journey and cultural transformation utilizing our resources as coaches.

7. Why is IES at NC State University providing lean healthcare?

IES has been partnering with the NC State College of Textiles to deliver Six Sigma for healthcare for many years. We have documented amazing results with some very distinguished healthcare facilities. Lean has always been integral to successful Six Sigma implementation strategies, particularly in healthcare. Since the demand for lean in healthcare is growing at such a fast pace, IES has developed a targeted industry offering to meet demand. It is our goal to partner with healthcare organizations to reduce costs and improve quality and efficiency. Healthcare is a valuable commodity in North Carolina and in the nation, and it is our goal to meet the demand for lean and quality controls as our healthcare partners face intensifying cost, quality and legal pressures, increased outpatient services, and an expanding number of uninsured patients.

8. Can NC State offer on site process improvement support?

Absolutely! On-site projects traditionally have been implemented using faculty and extension faculty resources of NC State University. Experienced healthcare resources are partnering with IES to deliver these valuable services. [IES account managers](#) are available across the state to discuss options; or you can contact [Annah Poteat](#) or visit the [website](#) for more information.

9. How does NC State address the clinical issues that healthcare organizations have?

All healthcare organizations have experts in their field that will be part of the lean healthcare project teams. While NC State maintains faculty with healthcare experience and expertise, and may use healthcare faculty to assist with lean healthcare courses, we do not believe that lean healthcare course facilitation requires a healthcare expert. The underlying premise of becoming a lean facilitator is to know and understand the tools, the questions to ask, and the methods used to create high performing teams and team members who will ultimately use their knowledge, skills and abilities to redesign their

work processes and their workplace. Empowerment of the employee at the point of service is a core value of the lean journey.

10. What experience has NCSU had with Lean Healthcare?

In the last year alone, North Carolina State University has initiated lean healthcare offerings in more than ten healthcare organizations demonstrating significant results in patient flow improvement, inventory management/expense reduction, medication reconciliation, and substantially reducing turnaround times in patient processing, insurance eligibility, laboratory results, radiology results and in-patient bed status processing. The types of projects have been specific to organizational needs and have enabled not only cost avoidance, but revenue enhancement for each client.

11. What is the difference between lean healthcare and lean Six Sigma?

Lean methods have been used to eliminate waste and errors in the production cycle of industries since Toyota's introduction of the Toyota Production System in the mid 1980s. Lean tools such as value stream maps, 5S, and kanban systems have been used to successfully redesign the work at the point of service or product level for many years. Lean tools traditionally have been part of the Six Sigma toolbox, used primarily in the Define and Measure phase to highlight the current state process and systematic waste. Lean Healthcare support will be offered to institutions who are interested in providing a culture of efficient and effective operations at the point of service who will be interested in focused, and intense rapid cycle improvements. Six Sigma statistical tools and analytical methods will be recommended for additional study of defect variation, multivariate analysis of root cause, innovative problem solving and solution generation, and statistical process control methods. Traditionally, lean methods are applied first as the organizational foundation and Six Sigma tools are then implemented for breakthrough improvement.

12. What are national lean healthcare success stories?

- [Operating Room Turnover Efficiency Improves 46%](#)
- [Med/Surge Shift Change Process Initially Decreased 36%](#)
- [Nursing Work Station Team eliminates overstocking.](#)
- [Centralized Scheduling Efficiency Improves 56%](#)
- [Medical Records Department posts dramatic reductions in processing time, delinquency rate.](#)
- [Same-Day Surgery Cuts Payroll Costs by \\$75K, Reduces Patient Wait Times](#)
- [Labor and Delivery Realize Annualized Savings of \\$94,000 and Increases Bedside Time by 33%](#)
- [Emergency Department Cuts Costs by \\$230K, Reduces Wait Time 59%](#)
- [Model OR . . . Proves Continuous Improvement Never Stops](#)
- [Lean Healthcare & Six Sigma Combine to Improve Performance](#)
- [Nursing Team Redesigns Floor & Removes Waste](#)

13. How much does it cost?

The answer for this question will always be... It depends.

NC State is a not-for-profit land grant institution, accountable to the state of North Carolina for business development and economic growth. Because of this mission, NC State prices will be fair and equitable to the clients that they serve. The Lean 100 healthcare course will be offered without cost for the client through March 2008 as a way to pilot the various lean healthcare courses and promote continuous improvement of course content and training methods specific to the voice of our customers.

Myth Busting

Is lean just another way to cut the budget?

No, lean healthcare will promote a cultural transformation that enables employees, at the point of service, to use problem-solving methods to improve patient care and service. The cost of poor quality specific to eight different types of “waste” will be eliminated. If anything, lean methods will eliminate non-value added work processes so that employees can do the work that they were hired to do.

Is lean just a quick fix?

No. While lean methodology and tools can be implemented and executed within rapid cycle activities, the process is focused, intense, highly analytical, and promotes critical thinking skills of your organizational employees and your clinical and systems experts. Control measures are put into place to sustain the gains made by the team.