

# TiP-TV™ Training in Partnership Program Supplement and Test for Healthcare Professionals

## Leadership Education

## Lean Six Sigma in Healthcare: A Strategic Imperative

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1.5 ASRT-approved Category A CE Credits

2.4 Contact Hours – Provider Approved by the California Board of Registered Nursing, Provider Number 12057



imagination at work

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## Program Summary

This page provides an overview of the program content and learning objectives. Please refer to the Program Outline for a detailed list of the topics covered. We encourage you to file a copy of this Program Summary and the Program Outline with your continuing education certificate. We also recommend that you provide a copy of this information to your manager as a record of your educational achievement.

## Program Description

This program illustrates how Lean thinking – through its original concepts, to its initial impact on manufacturing, and now to delivery of healthcare – can dramatically affect quality of service. Lean implies developing value through the identification of process problems and the elimination of waste by creating value streams that identify unnecessary complexity and time-intensive processes. Additionally, many other Lean tools can contribute to delighted customers and improved organizational efficiency. Veterans of Lean implementation and several case studies augment this program.

## Program Objectives

By the end of this program, the viewer should be able to:

1. Describe the Toyota Production System (TPS), and its role in creating challenging environments to engage people to think and grow in their work.
2. Recognize how Lean methods build quality into any process by eliminating waste.
3. Define the importance and role of value stream mapping.
4. Evaluate Lean methods as applied in healthcare to include why and how they work.
5. Use Lean six sigma techniques to form the basis for ongoing continuous improvement.

## Target Audience

Course objectives for this program specifically target radiology administrators and other healthcare managers.

**NOTE:** While the technical content is most effective for the target audience, other healthcare professionals may also benefit from viewing this course. Regardless of your specialty, you may apply for continuing education credit. Refer to the Continuing Education Credit page for additional information.

## Continuing Education Credit

1.5 ASRT-approved Category A CE Credits

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## Continuing Education Credit and Video File Download

### Online Process for CE Credit ([hls.gehealthcare.com](http://hls.gehealthcare.com))

In order to receive continuing education credit, you must log into the GE Healthcare Learning System (HLS) and complete all of the required steps. Please refer to the online TiP-TV Quick Start User Guide (click the User Guides link on the HLS Welcome page) for additional information on how to use the GE HLS as needed.

1. **View the entire program video** online or download the video file for later viewing (refer to the process below). This supplement is *not* intended to replace watching the video.
2. Go to the GE HLS web site at [hls.gehealthcare.com](http://hls.gehealthcare.com) and complete the **feedback form**.
  - ◆ NOTE: The Feedback Form link is not activated until the View Video Now module has been completed.
  - ◆ This provides valuable information regarding your thoughts on the program's quality and effectiveness.
3. Complete the **program post-test** without aids or assistance of any kind; this is an *individual effort*.
  - ◆ You have up to three attempts to successfully complete the test with a minimum passing score of 75% (ASRT and CBRN approved programs) or 80% (SNM-approved programs).
  - ◆ The post-test measures knowledge gained and/or provides a self-assessment on a specific topic.
4. Upon successful completion of the online CE information, you can instantly print a **certificate**.

### Video Download Process

For programs with an original start date of September 1, 2008 or later, the GE HLS includes an option to download the TiP-TV program video file. You can then watch the program on your personal computer or transfer the video file to your portable video player for viewing.

**NOTE:** Please refer to the **TiP-TV Video Download Quick Start Guide** for complete details (click the User Guides link on the GE HLS Welcome page).

1. With the desired program in your GE HLS Learning Plan, launch the program content to view the Online Content Structure. In the Video Download (Optional) area, click the Download Video to View Later link.
2. Save the video file on your personal computer, using your existing video download software.
3. View the program on your personal computer or transfer it to your portable video player for later viewing.
4. After viewing the entire program, log into the HLS and complete the CE activities as noted above.

### Continuing Education Credit Eligibility – Important Notice!

A GE Healthcare TiP-TV course may be available in several different formats, such as an online web course or CD/DVD. You may be able to receive CE credit only once for a particular course, regardless of the format in which it was viewed. If you have already received credit for a course, you are encouraged to contact your organization requiring continuing education to determine if you can repeat this course for CE credit.

Thank you for choosing GE Healthcare as your continuing education partner. We hope you will join us for other TiP-TV programs in the future. For more details and program schedule information, please visit our education web site ([www.gehealthcare.com/education](http://www.gehealthcare.com/education)).

Please forward any questions or comments to: [geeducation@ge.com](mailto:geeducation@ge.com)

## Presenters

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## Program Outline

- I. What Is Lean Six Sigma?
  - A. Origins
  - B. The Toyota Production System (TPS)
    - 1. "Respect for humanity" system
    - 2. Creation of challenging environments
    - 3. Value generation for the customer, society, and the economy
  - C. Lean Objectives/Outcomes
  - D. Transition to Healthcare
  - E. Discussion
- II. Recommendations for Action
  - A. Culture
  - B. Philosophy
    - 1. Leadership involvement
    - 2. Wing-to-wing
    - 3. Long-term vs. short-term goals
  - C. Preparation
    - 1. DMAIC – Define, Measure, Analyze, Improve, Control
    - 2. Problem extent and nature
    - 3. Identification of true causes
    - 4. Solutions linked to causes
    - 5. Establishment of procedures to maintain solutions
    - 6. Workout and CAP (Change Acceleration Process)
  - D. Principles
    - 1. Value definition by the customer
    - 2. Establishing flow
    - 3. Worker participation with management
    - 4. Value add vs. non-value add
    - 5. Focus on process
    - 6. Building quality into the process
    - 7. Action and speed

- E. Cross-Functional Integration
    - 1. Teamwork
  - F. Tools
    - 1. Form and function
    - 2. Value stream mapping
    - 3. The five Why's
    - 4. The five S's
    - 5. Supermarket/Kanban
    - 6. The seven types of waste
  - G. Change (Kaizen Events)
  - H. Discussion
- III. Lean in Healthcare
- A. Why do it? Does it work?
    - 1. Value enhancement
    - 2. Meeting customer needs
  - B. How Difficult is the Transition?
  - C. Experiences
  - D. Cases
  - E. Outcomes
    - 1. Organizational improvement
    - 2. Reduced costs
  - F. Discussion
- IV. Conclusion
- A. Going Forward
  - B. Plan, Do, Check, Act (PDCA)
  - C. Trystorm (try, observe, improve, repeat)
  - D. Continuous Improvement

## Appendix A: Resources

### References

Liker, Jeffrey K., *The Toyota Way*, McGraw-Hill: New York, New York, 2004.

Liker, Jeffrey K., Meier, David, *The Toyota Way Fieldbook*, McGraw-Hill: New York, New York 2006.

Womack, James P., Jones, Daniel T, *Lean Thinking*, Free Press: New York, New York, 2004.

George, Michael L., Rowlands, David, and Kastle, William, *What Is Lean Six Sigma?*, McGraw-Hill: New York, New York, 2004.

George, Michael L., et al, *The Lean Six Sigma Pocket Toolbook*, McGraw-Hill: New York, New York. 2005.

Balle, Freddy, Balle, Michael, *The Goldmine – A Novel of Lean Turnaround*, Lean Enterprise Institute: Brookline, Massachusetts, 2005.

### Electronic Resources

Lean Enterprise Institute: <http://www.lean.org/>

GE Healthcare: <http://www.gehealthcare.com>

**NOTE:** The Internet is an ever-evolving environment and links are subject to change without notice.

## Appendix B: Post-Test

LMS Course Number: 3126

To be eligible for CE credit, you MUST view the video presentation first. Then complete the post-test on the GE Healthcare Learning System ([hls.gehealthcare.com](https://hls.gehealthcare.com)) by the due date listed online.

1. Lean methodology is based upon the cultural principles of the \_\_\_\_\_.
  - a. *Harvard Review*
  - b. Toyota Production System
  - c. Ford Motor Company
  - d. United States
2. Lean is essentially the pursuit of eliminating \_\_\_\_\_ to achieve perfection.
  - a. overhead
  - b. employees
  - c. waste
  - d. analog methodology
3. In the Lean process, where does the identification of value come from?
  - a. Textbooks
  - b. Management teams
  - c. Employees
  - d. The customer
4. A compilation of value and non-value add components is indicated on a \_\_\_\_\_.
  - a. value stream map
  - b. flowchart
  - c. fishbone diagram
  - d. Pareto chart
5. The entire concept of Lean should be regarded as a \_\_\_\_\_.
  - a. quality improvement program
  - b. personal development tool
  - c. core business strategy
  - d. employee reduction technique
6. In Lean thinking, the term for waste is \_\_\_\_\_.
  - a. gemba
  - b. kanban
  - c. muda
  - d. heijunka
7. The act of observing work in order to directly assess processes is called \_\_\_\_\_.
  - a. kanban
  - b. muda
  - c. jidoka
  - d. gemba

8. The term wing-to-wing implies that evaluation of processes should be \_\_\_\_\_.
  - a. cross-functional
  - b. focused on a single entity
  - c. applicable to all businesses
  - d. very rapid
9. In Lean, the act of refining and changing processes for the better is called \_\_\_\_\_.
  - a. gemba
  - b. jidoka
  - c. kaizen
  - d. muda
10. Quality improvement tools that have been previously learned can easily be assimilated into Lean.
  - a. True
  - b. False
11. Every process contains \_\_\_\_\_ and \_\_\_\_\_.
  - a. sustainability; completion
  - b. accuracy; characterization
  - c. difficulty; defects
  - d. waste; variation
12. The Change Acceleration Process, or CAP, is very effective for gaining acceptance to change and reducing \_\_\_\_\_.
  - a. cost
  - b. liability
  - c. employees
  - d. resistance
13. In Lean, when processes are collapsed and reduced in number, the opportunity for \_\_\_\_\_ is greatly enhanced.
  - a. flow
  - b. revenue
  - c. staff reduction
  - d. downtime
14. The \_\_\_\_\_ is a highly visual diagnostic tool used to identify waste and ineffective processes.
  - a. Jidoka
  - b. value stream map
  - c. Kaizen
  - d. fishbone diagram
15. A verbal Lean technique used to drill down and focus on process specifics is called the \_\_\_\_\_.
  - a. five S's
  - b. five Why's
  - c. Likert scale
  - d. interrogation
16. Standardization is useful in improving quality, but it is also very helpful when you are trying to define \_\_\_\_\_.
  - a. needs
  - b. staffing requirements
  - c. work hours
  - d. variation

17. The attempt to initiate revisions and plans for improved performance immediately is called \_\_\_\_\_.  
a. brainstorming  
b. trystorming  
c. workout  
d. Change Acceleration Process (CAP)
18. The control of pull, or material flow, is accomplished by the use of a technique called \_\_\_\_\_.  
a. cycle time  
b. kaizen  
c. kanban  
d. takt time
19. Lean is a great process for reducing the size of the workforce.  
a. True  
b. False
20. Lean is largely dependent upon the \_\_\_\_\_ staff to work properly.  
a. front-line  
b. supervisory  
c. information technology  
d. medical