



# Lean & Six Sigma

*Specialty Courses  
for Phlebotomists*



National Center for  
Competency Testing

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# Lean and Six Sigma for Phlebotomists

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NCCT is continually refining and creating professional development products for all certified allied health professionals. We are committed to your success. This mini course was designed to help health care professionals understand, empathize, and provide superior service to our aging population.

The course is divided into chapters. There is an open-book quiz at the end of every chapter to help you assess your understanding of that chapter's material. Upon completing all the chapters, you can access this mini-course's final examination online at NCCT's website, [www.ncctinc.com](http://www.ncctinc.com). Proceed to the *Testing* section, and choose the *CE Test Login* option and log in. Choose the *Lean and Six Sigma for Phlebotomists Final Exam*.

Seventy percent or better is considered a passing grade for this course. Upon passing the course's final exam, you will receive a Specialty Certificate and a sticker from NCCT signifying that you have successfully completed this course. This sticker should be placed in your NCCT *Professional Development Log Book*. You will also receive five clock hours of continuing education credit and the course title will be placed on your *NCCT Continuing Education Transcript*.

Acquiring new skills and pursuing additional knowledge in your career field have always been the hallmark of a true professional. Read, learn, and most importantly, enjoy your profession more. Your new knowledge will not only increase your competence and importance to your team, but also will increase your own self-assurance in your abilities and work.

# Efficient Operations for Phlebotomists

## Course Objectives

Upon completion of the Competence Certificate Course, the professional will be able to:

1. Define Lean and Six Sigma quality management theories.
2. Provide a brief history of the Lean and Six Sigma quality management theories.
3. List and define the steps of Lean process.
4. Outline and discuss Lean tools.
5. Discuss the DAIMC steps of Six Sigma.
6. Apply principles of Lean and Six Sigma to phlebotomy processes.
7. Discuss combination of Lean and Six Sigma processes to streamline phlebotomy processes.
8. Relate Lean and Six Sigma to improvement of phlebotomy and specimen processing procedures.
9. Briefly discuss additional quality management systems.

### *Disclaimer*

The writers for NCCT Competence Certificate Courses attempt to provide factual information based on literature review and current professional practice. However, NCCT does not guarantee that the information contained in these educational courses is free from all errors and omissions.

## Chapter 1 Introduction to Quality Management Processes

Quality is a buzzword in health care. Health care practitioners in all disciplines strive for "quality" practices and accurate, successful outcomes. Quality has been defined and reworked until health care practitioners have become "quality nauseous." As managed care and Medicare reimbursement continue to drive the financial end of health care, the day-to-day workings of "quality" continue to be squeezed. We are all asked to do more with less. In the case of "quality" health care, less is definitely NOT more.

To seasoned health care professionals, the concept of quality management processes is not new. "Health care veterans" have lived through quality circles, focus groups, total quality management (TQM) and a variety of other quality venues. In some cases, we have adopted pieces of the quality management system *du jour*. However, whole systems have either failed to correct systemic deficiencies and inefficiencies or have proven too burdensome to be completely adopted or maintained on a long-term basis.

Over the last decade, health care has increasingly turned to industry for applicable quality management systems or concepts. There are a variety of concepts that have been examined and applied to health care settings. The two that have held the most promise are Lean and Six Sigma.

Detailed descriptions and historical background of Lean and Six Sigma will be outlined in the following sections. Elements of the two systems, as they relate to the laboratory and specifically phlebotomy, will be provided. Specific application of each system and quality process management, in general, will also be discussed. Emphasis will be placed on error reduction, streamlining of work practices and financial savings related to appropriate examples. Administrative support, staff buy-in, and training all comprise vital components of any quality management program.

Health care has historically not considered itself as a business or industry. The need to shift the focus has become apparent in recent decades. Examination of quality systems with proven track records in business and industry has become central to the shift in focus for the health care industry. As this unit unfolds, the reader should not necessarily be prepared for a "buy in" to a whole system or concept, but rather may wish to pick and choose from a "smorgasbord" of items. These items may be used to create a narrower "menu" of steps and processes. The items on this list may then be applied to work practices to make these processes more efficient and cost effective.

This application of systems, methods and techniques to improve efficiency and decrease waste is not intended to remove the humanity from health care. Nor are these adjustments meant to take the people who work in health care and de-humanize them into robots or machines. Rather, the intention is to simplify the work, reduce errors and engage a more efficient process. It is not the people that require fixing or adjustment, but rather the system that is in grave need of repair. As health care workers, we have been asked to do MORE with LESS for as long as we can remember. The initiation of efficiency systems is to allow us to complete MORE TASKS (the goal of administration) with LESS STEPS (the goal for the workers). This IS doing MORE with LESS and hopefully loving ♥ it.

## Section A Historical Significance of Lean and Six Sigma

Formal introduction of Six Sigma occurred in the mid to late 1980's at Motorola. It was introduced as a tool to manage production variation. The underlying principle is rigorous statistical analysis. Main processes include "the need to master customer focus, to process definitions, and to engage in measurement system analysis, root-cause analysis and consistent process monitoring." <sup>(18)</sup>

Additional buy-in occurred after adoption by companies such as Allied Signal (Honeywell), General Electric, and Eastman Kodak. <sup>(21)</sup> These companies applied the principles to increase operational efficiency and effectiveness as well as a reduction in product and process defects. These applications achieved multi-million dollar gains for each company. Financial progress always attracts attention. Other industries began to sit up and take notice.

Lean is a term that was applied to a production system developed by the Toyota Motor Corporation. The philosophy applied to this production company was generically labeled "lean." This was not a new term when employed by Toyota. Womack, Jones and Roos coined the term in their book "The Machine that Changed the World." <sup>(17)</sup> Lean was a descriptive term that was applicable to the type of system that Toyota hoped to accomplish.

As employed by Toyota, Lean was a management system and philosophy that focused on "workforce engagement, creation of a continuous improvement culture, problem solving and improving activities and processes in the system as a whole rather than cutting people or assets." <sup>(20)</sup> The principles of Lean are designed to evaluate a process by performing a root cause analysis and using that analysis to eliminate waste. <sup>(20)</sup> The principles of Lean are designed to benefit a customer-focused culture. The benefits include "improving speed of delivery, increased quality, and flexibility in meeting ever-changing demands while removing "wasteful" activities." <sup>(20)</sup>

Lean principles "employ education, workplace organization, standardization, and practical problem solving." <sup>(6)</sup> The goal of these steps is to decrease variances in process and sustain improvements once they have been achieved. While Lean is NOT based solely on statistical analysis like Six Sigma, data is used for decision-making and process management. The collection and application of data incorporates accountability into the Lean equation. As a summary statement, Six Sigma asks "How Many" while Lean asks "How?"

As with Six Sigma, successful implementation of Lean principles at Toyota encouraged other manufacturing and production industries to apply these principles with success. Lean principles were put into practice by the United States postal service, Federal Express, Southwest Airlines, Alcoa, and Vanguard Insurance.

As health care corporations and administrators have taken time to review historical perspectives and compare our INDUSTRY, to manufacturing and production industries, similarities and applications for quality management systems such as Lean and Six Sigma to be successfully applied in many facets of health care. The laboratory and phlebotomy departments are no exception.



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