



## Implementing Lean Tools in the Laboratory

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**Principal Consultant & Co-Founder of Labtopia, Inc.**

- 30+ years' experience in laboratory & manufacturing environments
- Positions held
  - *Consultant and Assessor since 2006*
  - *Quality Systems Manager, Manufacturing (Chemical, GMP and ISO)*
  - *Analytical Chemist, R&D Chemist, QC Chemist, LIMS Chemist*
- Multiple industry experience: Petrochemical, specialty chemical, pharmaceutical, semi-conductor, food, environmental, medical device
- Certified Lead ISO 9001 Auditor, A2LA Lead Assessor (ISO 17025), ASQ Auditor
- Certifications (ASQ-CHA and ASQ-CQA), NELAP Lead Assessor
- EPA Drinking Water Certification Officer Training (Inorganic, Organic, Microbiology)
- ASQ-CSQE – Certified Software Quality Engineer
- B.S. Chemistry
- Implemented over ten (10) different LIMS solutions

### Overview

- Introduction
  - Why the drive for efficiency?
    - *Internal and External Customer Expectations of the Laboratory*
  - Lean in the Laboratory
    - *What is Lean?*
    - *Tools of Lean Manufacturing*
    - *Application of Tools to the Laboratory*

### Internal and External Expectations

- Accurate
- Reproducible
- Consistent
- Low Overhead/Cost (internal)
- Environmentally and Safety Oriented

### Common Laboratory Issues -

Internal laboratories (hospital, plant, or other) are sometimes sheltered from the impact of cost and service availability that impacts the commercial/medical laboratory. However, the basic rules for cost reduction, speed and accuracy are inherent for all.

### LEAN in the Laboratory -

*What is Lean Manufacturing?*

Lean manufacturing is the production of goods using less of everything compared to mass production: less human effort, less manufacturing space, less investment in tools, and less engineering time to develop a new product. (WIKIPEDIA)

Lean Manufacturing has been expanding from the assembly line to the Manufacturing Plant.

## **LEAN in the Laboratory**

- Maintenance Shop
- Transportation Department
- Hospital
- Office
- Sales/Customer Service Area

## **LEAN Principles**

- Lean has defined waste as:
  - Defects
  - Over production
  - Waiting/Delays
  - Non-value added activities
  - Transportation
  - Inventory
  - Motion
  - Employee underutilization

## **LEAN Tools**

- Cell/Standard Work
- Pull/Kanban Set-up Reduction
- Kaizen Events
- TPM (Total Production Maintenance) Value Stream Mapping
- 5S

## **5S**

- Sort
- Set in order
- Shine
- Standardize
- Sustain

## **5S Philosophy -**

Focuses on effective workplace organization and standardized work procedures.

## **5S and the Laboratory -**

5S can be a simple tool to help find the ways to increase space, increase morale, improve safety, and increase efficiency.

Starting a 5S program requires everyone in the area to be “on board”.

# The Perfect Lab Starts Here