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tutorials
case studies

World-Class, Lean Performance Tutorials and Case Studies - Tutorial 15
DEPLOYING LEAN PRINCIPLES IN LABORATORIES

Let's recall the two main Lean targets:

- Maximisation of output ***value*** to the client
- While simultaneously reducing/eliminating any ***waste*** present/inherent in the process producing the output value

Does this apply to a Lab, ANY Lab?
Yes, of course it does.

Every Laboratory, be it a process/quality control lab, or a hospital lab, or a dental lab, or an optical lab, or whatever else, has clients, expecting maximum ***value***: 100% correctness of the output, in the due (minimal as possible) time, at the overall minimal cost.
Is ***waste*** present in a Laboratory type of Operations? Yes, it is.
There is visible and there is invisible waste lurking and hiding around in any Lab.

VISIBLE WASTE includes (but is not limited to): lab personnel (technicians, technologists, supervisors....) un-necessary idling, excessive walking, talking and redundant talking, moving, searching, handling, clarifying, instructing, supervising, duplication of work, pass-the-baton delays, un-timely production of output results... and lack of safety, accidents to personnel, hazards, damage to equipment, and the like.

INVISIBLE WASTE includes (but is not limited to): making errors and mistakes, fixing errors and mistakes, doing un-necessary paperwork, following/adhering to un-necessary/inadequate/outdated/redundant procedures, misunderstandings of any sort, wrong/un-necessary/redundant data entries, mis-filing, un-necessary filing.... and absenteeism, lost opportunities, wasted personnel talents... and dealing with clients' complaints, loss of image, loss of reputation... and the like.
The list could be extremely long.
Note: all INVISIBLE Waste, in time, becomes somehow visible and quantifiable.

VISIBLE AND INVISIBLE WASTE cost money, and impact (negatively) the primary Lean target: maximum output value to the client.

Is the above situation diffused in Labs around the world? Yes, with very few exceptions.

Attempts have been made to deploy Lean principles in many types of Labs, and the results are astonishing! Case studies show:

- Reduction in production time: 20% - 45% (depending on typology of lab)
- Increase in output capacity per unit of time: 25% - 50% (depending on typology of lab)
- Cost saving (overall): 15% - 35% (depending on typology of lab)
- Improved product and data quality: 20% - 50% and better (depending on typology of lab)
- Reduction of errors: 10% - 30% (depending on typology of lab)
- Improvement in safety: 20% - 60% (depending on typology of lab)
- Improvement in lab personnel and clients' satisfaction: 10% - 20%
- Improved compliance
- Improved collaboration and communication
- and many other remarkable benefits

How?
By launching a **Lean Project** Lab-wide and by deploying typical **Lean Tools and Techniques**.

LEAN PROJECT IN A LAB
Key issues:

- Lean Vision, diffused top-down
- A Lean Project Manager in charge of the Lean Project
- Lean Master Plan (short-medium-long term)
- Lean Improvement Team/s (everybody must be involved!)
- No missed deadline
- Continuous monitoring/review

LEAN TOOLS/TECHNIQUES IN A LAB - primarily:

- 5-S as a starting point
- Value Stream Mapping & Spaghetti Diagram
- Multi-skilling and re-skilling instead of single-skilling wherever feasible - which leads to: multi-function/multi-abilities instead of single-function/single ability
- Pull, Batch Reduction and One-Piece Flow principles as well as Cell Operation wherever possible
- Last Planner approach and 5Why Analysis
- Basic principles of Lean Maintenance and Lean Technology/Machinery Management
- Poka-Yoke for guaranteed Safety and mistake-proofing
- Lean Kaizen for Continuous, Systematic Improvement
- Lean HR Management for multi-skilling and personnel empowerment