Using Lean 5S to Optimize MLS Laboratory Work Space

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Introduction

The Medical Laboratory Science Work Room had over time collected obsolete and broken equipment, outdated reagents, and other items that were no longer being used. The general mentality of saving things for future MLS labs created a cluttered environment and limited the amount of useful work space for instructors and teaching assistants. In order to create an OSHA compliant, efficient, and pleasant work space, a LEAN 5S was performed.

Methods & Results

The purpose of using LEAN methodology was to identify waste and non-value added activities. The 5S included:

• Sorting (removing non-value added items)
• Setting in order (arranging items so they are easy to access)
• Shining (cleaning)
• Standardizing (how the work is done)
• Sustaining (to prevent the work area from deterioration back to its previous condition)

*One additional S: Safety. Removing hazardous materials

The 5S required establishing a cross functional team which comprised the Champion (CHS Dean), the Key Stakeholders (the MLS Faculty and the Director of Laboratory Resources), and two Graduate students providing outsiders’ vantage point of the process.

In the Kaizen spirit (cheerfulness, go see, and getting your hands dirty) the team worked together to identify the different types of waste which included:

• Waste of space:
  • Counter & shelf space - storage of defective and/or obsolete equipment
  • Refrigerator and freezer - for saved expired reagents
• Waste of inventory:
  • Related to keeping unnecessary materials and equipment parts
• Waste of motion:
  • Faculty & Teaching Assistants having to search for lab materials and equipment
  • Resulting from poor ergonomics due to creating work-arounds in the cluttered area
• Waste of energy:
  • 2 extra refrigerators and one extra freezer were used to store the excess inventory

Using colored dots and tape to indicate what was to be kept (green), what was to be discarded (red) and what was to be held for consideration (yellow) the team looked at all the items in the room, including inside and behind the refrigerators and freezers, inside each drawer, on top and under the counters. All items deemed non-value added were discarded.

Challenges

Getting buy in with the faculty was one of the greatest challenges. The saying, One man’s trash is another man’s treasure was never more true. Good communication and creating a common goal of having a better organized, more efficient work room was key.

Conclusion

The Faculty each took responsibility for their reagents and equipment: green dots to keep, red dots to discard, yellow dots to be decided. In the end, an ancient acid cabinet (containing ancient acid), two refrigerators and one freezer were discarded. Boxes of old pathology slides, garbage cans of expired reagents, obsolete glassware, and broken equipment were thrown away. The outcome of the 5S project resulted in a safer, more efficient, and productive laboratory work room with an added benefit of creating 35% more usable work space.

To sustain the 5S gains, an audit checklist was created and authority was given to the Director of Laboratory Resources to enforce. Each faculty member who uses the work space is responsible for keeping the space clean and returning it to it’s original 5S state at the end of the semester.

Reference

Dennis, Pascal. Lean Production Simplified. 3rd Edition, CRC Press, Boca Raton, FL