

Lean Six Sigma Implementation for the Advancement and Innovation of Bio-Repository Operations



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Introduction

The Cooperative Human Tissue Network Western Division at Vanderbilt University Medical Center (CHTN-VUMC) is a federally funded service oriented grant that provides high quality human specimens to researchers to accelerate the advancement of discoveries in cancer diagnosis and treatment. CHTN-VUMC executed Lean Six Sigma (LSS) as a set of methodology to promote efficiency and innovation. LSS aims to reduce waste, minimize downtime, reduce defects and errors, improve productivity, and increase customer satisfaction. Borrowing the LSS business philosophies and methodologies, CHTN-VUMC has succeeded in the LSS approach by identifying and prioritizing quality improvement initiatives.

Materials and Methods

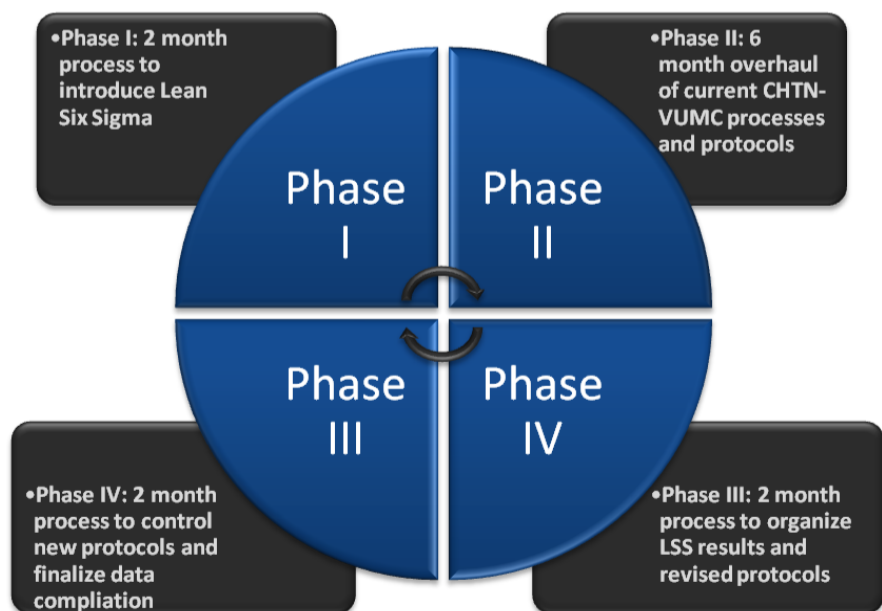
CHTN-VUMC implemented the five steps of LSS (define measure, evaluate/analyze, improve and control) using Microsoft Office Word and Projects. The four phases are as follows:

Phase I: Overview is given and staff is asked to define one key function to improve through LSS. Five assignments were given over the course of two months.

Phase II: Implementation begins in all defined areas and workbooks are designed to aid staff through all steps. Implementation lasted six months.

Phase III: Completed workbooks and processes are analyzed and reorganized to create a larger LSS manual. All protocols are comprised and arranged with a new LSS compliant method. Phase III lasted two months.

Phase IV: Control of new functions, identification of issues and compilation of data is complete. A report outlining changes of implementation is outlined. Phase IV lasted two months.



Literature Cited:

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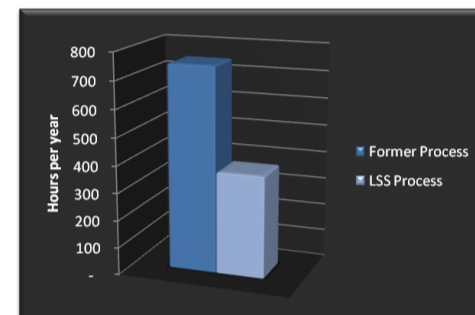
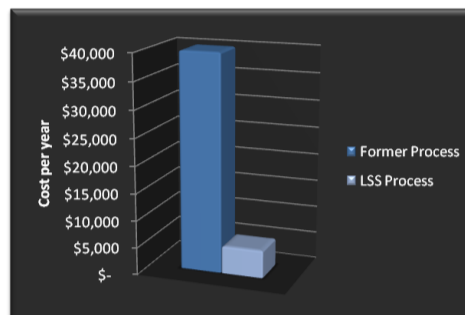
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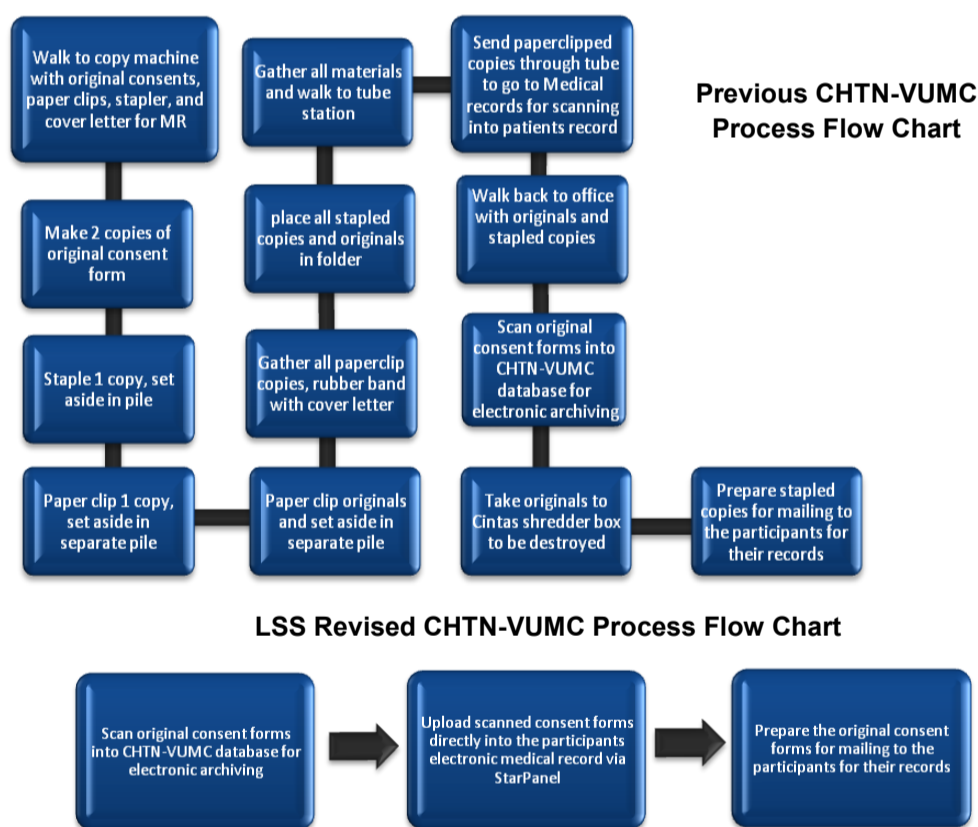
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Results

Monetary Improvement: Looking at the current procedure for collecting tissue specimens from the Operating Room, CHTN-VUMC found that a more proactive approach could be taken in retrieving the samples at an earlier time point thus allowing more opportunity for collecting tissue specimens, procuring specimens, and shipping specimens. Using Lean Six Sigma process improvement principles, CHTN-VUMC changed the protocol for retrieving specimens from the OR. Now CHTN-VUMC retrieves specimens directly from the OR instead of waiting for the specimens to arrive from surgical pathology.



Operational Improvement: Looking at the current process for archiving and storing participant enrollment information along with mailing consent information to the participant, CHTN-VUMC found a way to electronically streamline the process and cut waste. The current protocol leaves much room for human error and takes a multitude of steps to complete. By streamlining the process into fewer steps using electronic means, we have been able to reduce the process into a very streamlined and waste reducing procedure.



Conclusion

Lean Six Sigma principles, when applied to bio-banking, have shown at CHTN-VUMC to enhance protocols by streamlining processes into faster, more efficient, and greener steps. By eliminating steps we have been able to remove waste and cut costs by using resources and materials more efficiently.

Discussion

1. How can we begin to move Lean Six Sigma over to a more appropriate form of process improvement for bio-banking?
2. What other areas can be improved in the bio-banking community using the principles of Lean Six Sigma?

Acknowledgements

We thank the CHTN-VUMC staff for their efforts and support: Erik Brooks, Sarah Feyas, Ellen Heimann-Nichols, Dana Reeves, Marie Jacobovitz, Chelsea Taylor, Irieon Walker, Jennifer Earheart, Anwesa Chakrabarti, and Emily Sharp. This project is supported by NCI/NIH 2U01CA091664-08

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