

Introduction

- ❖ Rapid diagnostics in infectious disease testing are becoming more prevalent in hospital microbiology laboratories (1). These tests play a major role in rapid detection of pathogens, disease surveillance, and more recently allowing for de-escalation of empiric antibiotic therapy where appropriate.
- ❖ At Vidant Medical Center, as part of this health care delivery system, the microbiology laboratory, in partnership with the infectious disease service and pharmacy, acquired the Nanosphere Verigene® Blood Culture Nucleic Acid Testing System to facilitate earlier targeted antibiotic use and improved patient care (2,3).
- ❖ Space is limited in our laboratory and it was necessary to improve the specimen processing workflow. By monitoring workflow, appropriate use of the test and laboratory staff feedback, we intended to use this opportunity to promote a change in culture toward quality improvement.

Methods

- ❖ Utilized Dartmouth Microsystems Framework (2014), PDSA QI Cycles, Tools (Flowcharts, Fishbone).
- ❖ Applied LEAN Spaghetti diagramming
- ❖ Conducted Initial training of technologists to perform testing for the system was performed in September, October and November of 2016. All staff reviewed a copy of the testing procedures.
- ❖ 1st PDSA Cycle: Verigene blood culture identification system went live on December 5th, 2016.
 - ❖ During this cycle, each technologist performed testing on their own with the assistance of a laminated procedure card for easy reference.
 - ❖ 4- weeks after going live, an anonymous survey was submitted to the staff to determine their baseline comfort level of performing the test, and determine any challenges they faced.
- ❖ 2nd PDSA Cycle: Survey summary led to the 2nd PDSA cycle. Technologist who had not performed patient testing, after their initial training, would now have a senior technologist present with them on first full day of patient testing. LEAN spaghetti diagram to determine the # of steps walked to process one patient sample.
- ❖ 3rd PDSA Cycle: Labeled physical locations for the Verigene® testing apparatus were determined. Included labeled buckets and colored markers to allow for quick visualization of testing materials on the bench top. Another staff satisfaction survey was submitted 1 month after changes were made.

Discussion

- ❖ Acquiring this new test system gave the laboratory the opportunity to re-evaluate its current system processes and workflow. After the first PDSA cycle, many areas of improvement were identified and we decided to proceed by addressing each individually -in its own PDSA cycle.
- ❖ It was also determined that, on busy days, when many samples were being processed, having visual aids or color coding would assist in differentiating different sample types.
- ❖ Laboratory technologists are now actively a part of this system process change – resulting in TEAMWORK.
- ❖ Currently in PDSA Cycle 3 and considering ways in which we can move parts of the process around to reduce the number of steps. The current specimen workflow needs to be standardized and made more efficient.
- ❖ LEAN team has been assigned (Spring) to determine additional areas of improvement, be more efficient in our system processes and eliminate waste of time and resources.

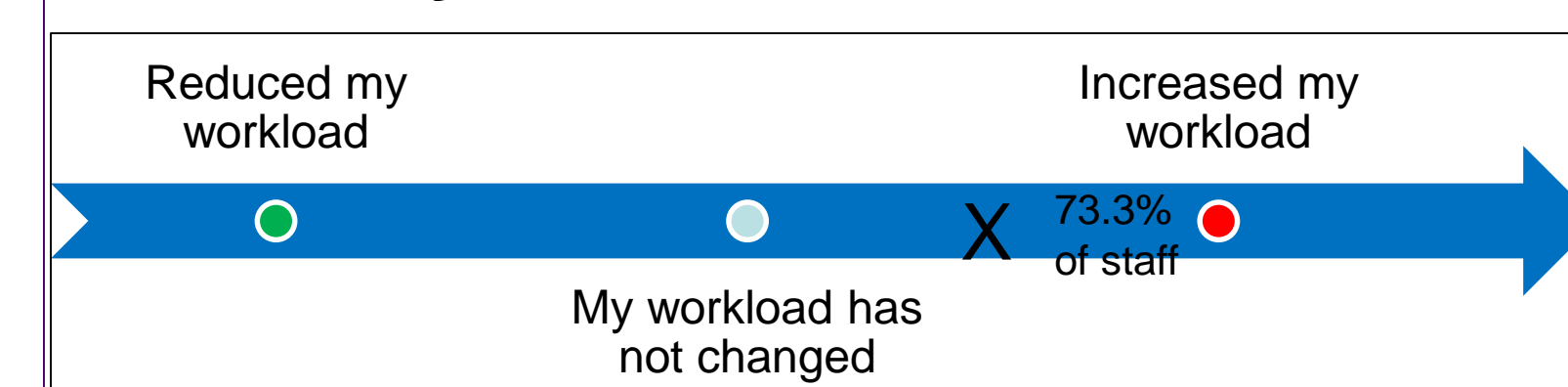
Aim Statement

Specific Aim:

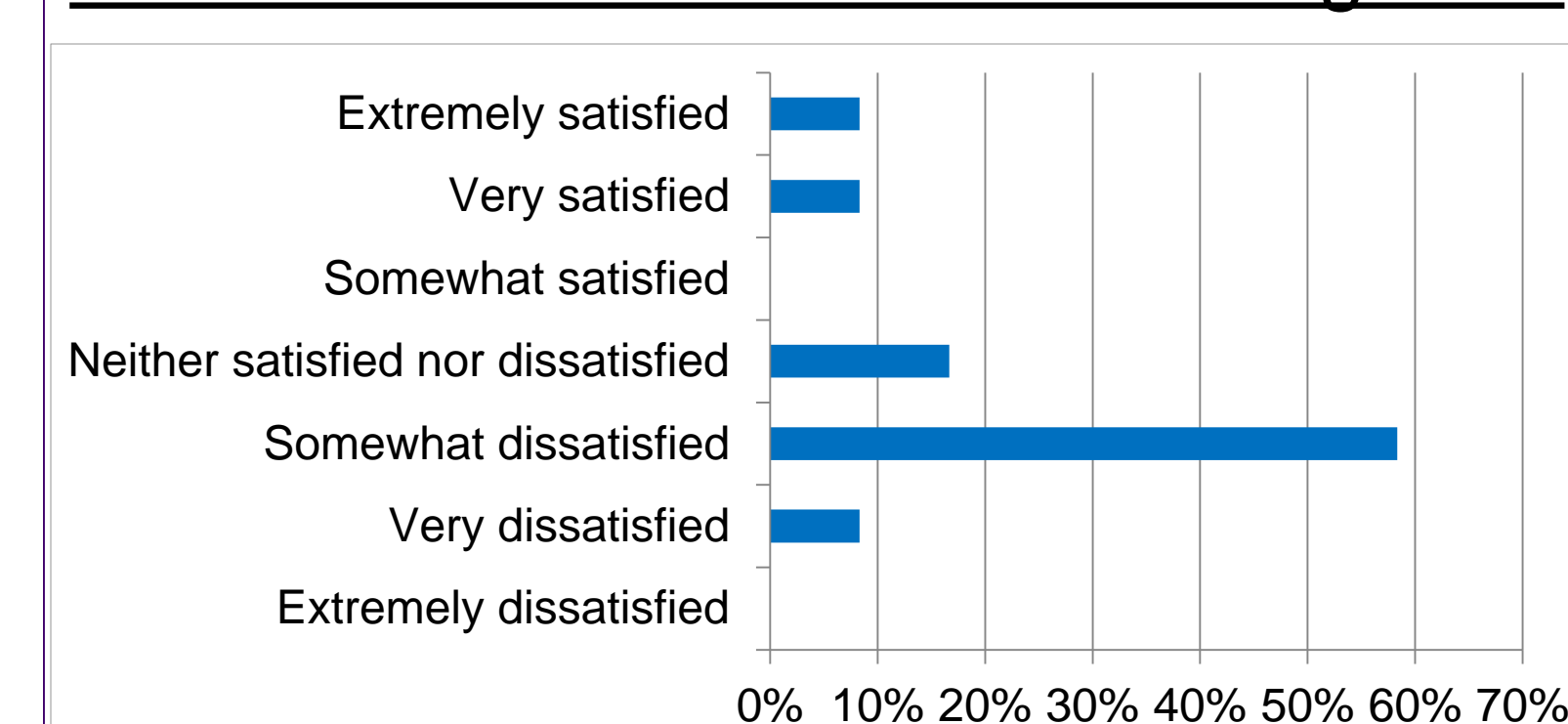
Improve the microbiology laboratory workflow and staff morale by reducing the number of steps required to process a specimen on the Nanosphere Verigene® Blood Culture Nucleic Acid Testing System by 10% and 30% respectively by June 30th, 2017.

Results

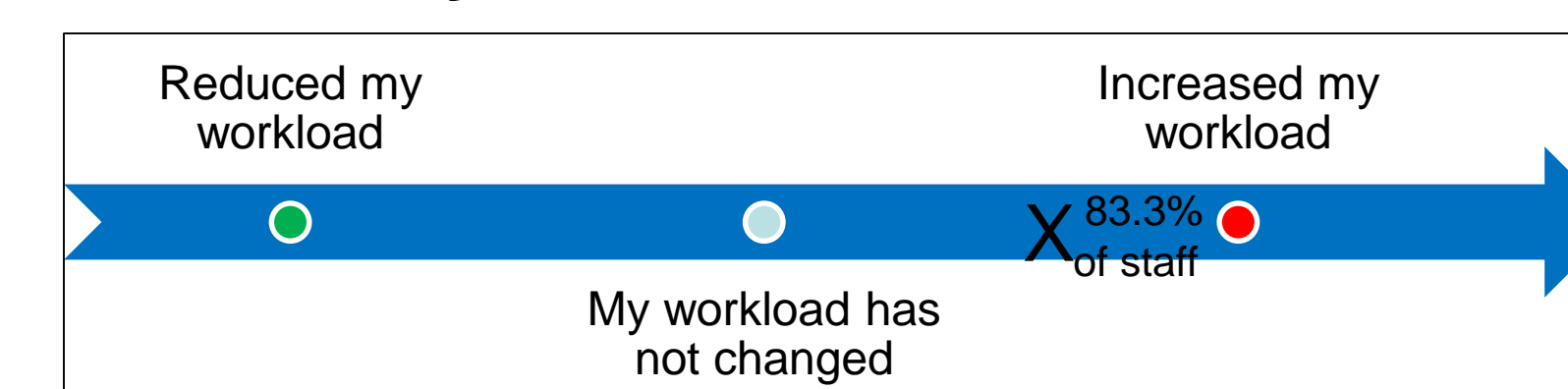
PDSA Cycle 1



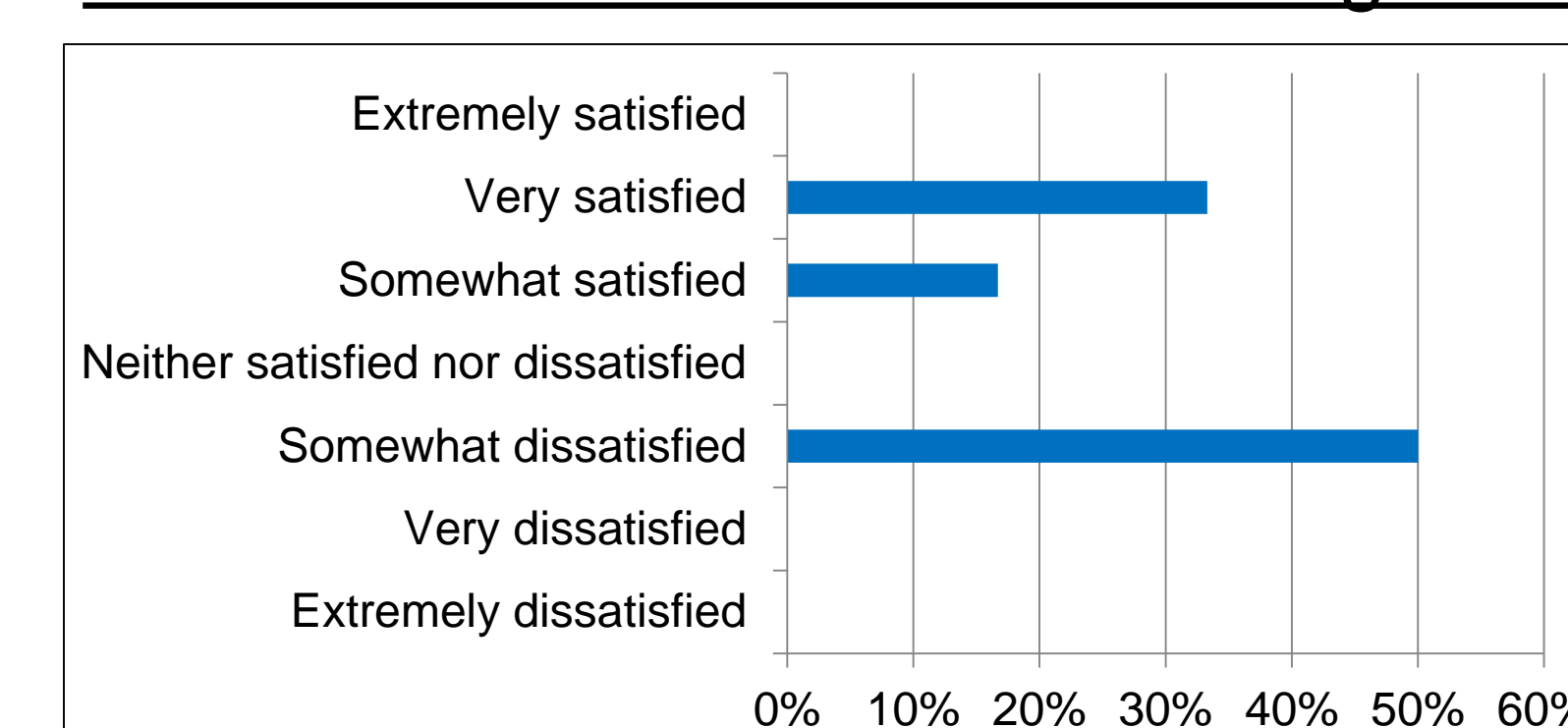
Staff Overall Satisfaction with Verigene®



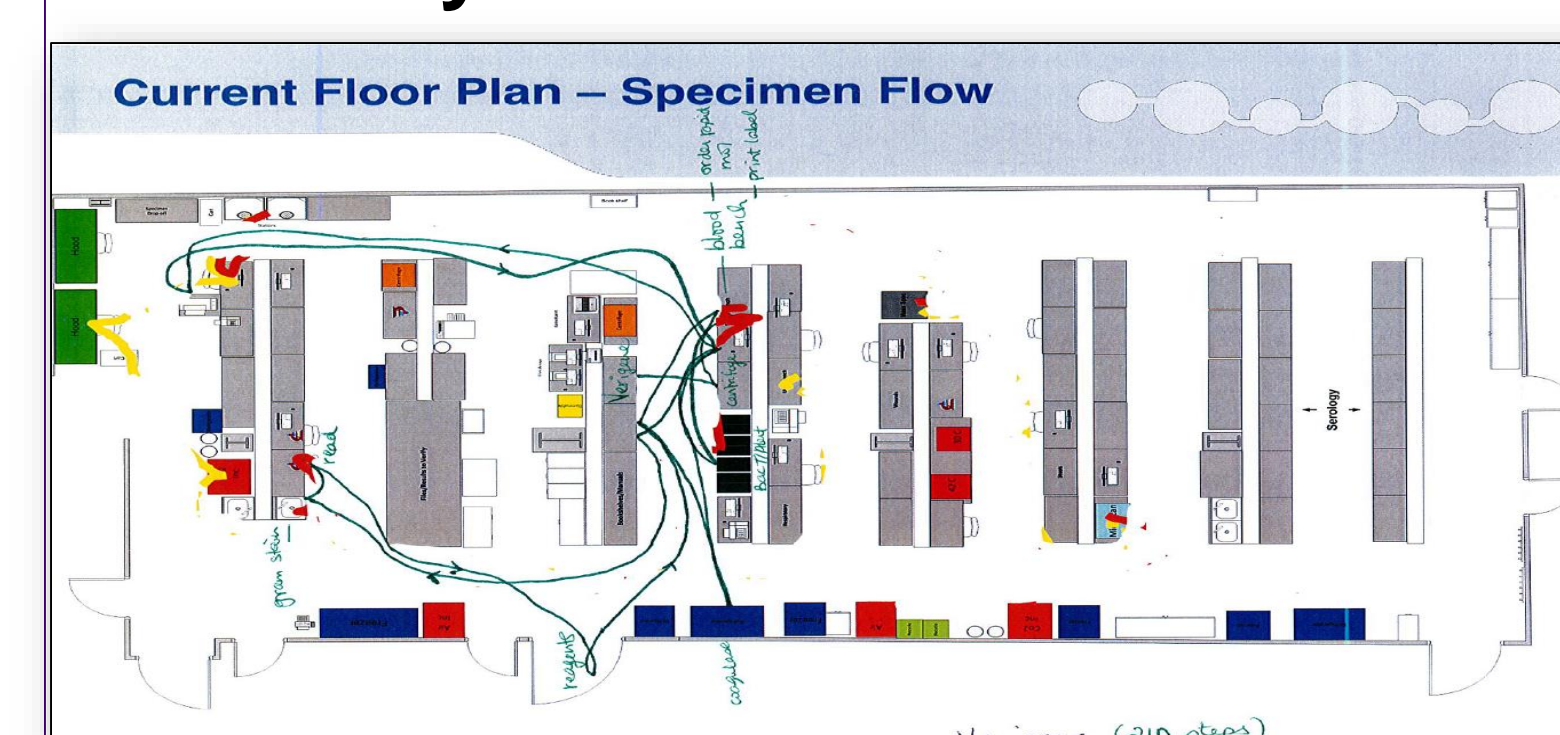
PDSA Cycle 3



Staff Overall Satisfaction with Verigene®



PDSA Cycle 2



Conclusion

Focused area of staff satisfaction the QI change project resulted in staff “very satisfied” levels improved from Cycle 1 to Cycle 3 by 73% with the Verigence process. As diagnostic testing in the lab increases, it is important to continuously analyze the workflow. Integrating new tested systems into workflow to maintain quality of work & staff morale – A Must!

Acknowledgements

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References

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