

# **Cape Fear Valley Medication Return Process Improvement**

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## **Abstract**

The Cape Fear Valley Hospital sees hundreds of inpatients every week that are often taking medication. As it is very important for the hospital's staff to document these medications, the patients are encouraged to bring in any medications that they are currently taking. However, the hospital often fails to return these medications to their patients. This is because the hospital does not have a standardized process for the storing and returning of medications. We used Lean tools such as DMAIC to standardize this process and reduce the number of patients that are going home without their necessary medication. DMAIC is an acronym for Define, Measure, Analyze, Improve, and Control, and using this step by step process ensures that the problem is carefully examined from all angles. Thanks to this detailed process, we thoroughly understood the problem, and its root causes before we started suggesting solutions. Implications of this study are that we can save the nurses time when assessing patients, more patients will get their medications when they check out, less space will be taken up by patient's medications, and patients will save money because they will not have to replace lost medication. In turn, this will lead to increased patient satisfaction.

## **Keywords**

Medications, Hospital, Patient, and DMAIC

## **Biographies**

**Alex Kachler** is a 2020 graduate from Methodist University with a Bachelor's Degree in Industrial Systems Engineering. He is currently attending the University of North Florida working on a Master of Science in Management. He also played baseball at Methodist, where he was a 3 time Team Captain and a 2 time NCAA All American. He was also the first recipient of the MU Engineering Graduate award.

**Thembela Shabangu** is a 2020 graduate from Methodist University with a Bachelor's Degree in Industrial Systems Engineering including Mathematics. Thembela worked as a CEO of "Sunshine Study Club" from 2014-2020.

**Girish Upreti** is an Assistant Professor of Engineering at the Methodist University, Fayetteville, NC, USA. He holds a Master of Science in physics from Portland State University as well as a Master of Science in materials science and engineering and a Master of Science in statistics from the University of Tennessee. In addition, Dr. Upreti earned his Ph.D. in industrial and systems engineering from the University of Tennessee, Knoxville in August of 2017. Dr. Upreti worked as a performance improvement specialist at St. Luke's Health System, ID from 2017-2019. He has elevated expertise in mathematical modeling, environmental and systems engineering, lean and six sigma, and non-automotive fuel cell policy. He has published several journal articles, conference proceedings, reports, and a book chapter. Dr. Upreti has completed research projects at Fulton Bellows, JOST International, Advanced Catalyst Systems, Covenant Health, and East Tennessee Children's Hospital.