

Application of Lean Methodology in a Low - Resource Emergency Department in Ethiopia

Jordan Harris

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UMMS Capstone for Impact

Branch: Systems Based, Hospital Based

Advisor: Dr. Daniel

Project Summary

I spent approximately 8 weeks applying lean methodology in the emergency department (ED) at Addis Ababa Burn, Emergency, and Trauma in Ethiopia with the goal of improving patient flow. Before leaving for Ethiopia I participated in a two day lean thinking in health care course put on by U of M. Once in Ethiopia I spent two weeks working with faculty and residents to identify areas within the ED contributing to poor patient flow/ED overcrowding. We then spent the remaining time applying lean thinking in the triage, laboratory, and low-acuity areas of the ED. The general approach we took was as follows: We initially created a SIPOC diagram to scope the project, followed by application of the A3 scientific problem solving process – value stream mapping of the current state, root-cause analysis (fishbone diagrams and five whys), recommendations/future state, and implementation planning – in each of the aforementioned areas.

Our work identified many different contributors to poor patient flow including: excessive distances traveled by specimen transporters, physically linked laboratory order forms, lack of standardized rounding and charting processes, insufficient triage training, and non-standardized workspaces. We began to implement some of our recommendations to address the root-causes we identified in the laboratory by creating new lab order forms and possibly relocation of different lab equipment. Additionally, I conducted a full-day triage training (with the help of the developers of the South African Triage Scale in Cape Town who emailed me all their triage training material) for senior residents and certified 6 residents overall. These residents will now use this material to train interns and nurses how to properly use the triage scale in practice.

With regards to how my project involved leadership/teamwork/communication: I worked mainly with one senior EM resident, a junior EM faculty member, and a head nurse on a daily basis for each step of this project. I used my knowledge of lean principles to teach them the basics of lean and they helped to apply it in the framework of their low-resource ED. We worked together on every A3 and came up with recommendations we thought we be sustainable solutions. After each A3 we

completed I presented our findings and recommendations to the hospital CEO for approval.

Action Items/Outcome

Please see above

Conclusion/Reflection

I'm very thankful that the branches allowed me to design my M4 year around my interests in global emergency medicine. I was able to use this time to get experience working abroad on a QI project while simultaneously learning how emergency medicine is practiced in this low-resource setting. I also have greater appreciation for the differences in patient pathology in the developing world compared to an academic, tertiary hospital in the US. In order to disseminate the results and conclusions of my impact project I have submitted an abstract to the Society of Academic Emergency Medicine 2018 annual meeting.