

Capstone for Impact Submission | GY2019

Project Title: Exploring Commercialization Opportunities of Predictive Algorithms in Healthcare

Student Name(s): Parikh, Adish

Advisor Names(s): Dr. Visha Krishnan

Branch: Diagnostics & Therapeutics

Path of Excellence: Innovation and Entrepreneurship

Handover/Transition:

If this project can be continued by another UMMS student, you may contact them at the following email address/phone number (N/A if project cannot be handed over): adishparikh92@gmail.com

Summary:

Exploring commercialization opportunities for a machine learning algorithm that optimizes IBD therapy using thiopurines. I am interning for Fast Forward Medical Innovation and collaborating with Dr. Akbar Waljee from GI to understand the pathway of commercialization for this algorithm. Artificial intelligence is rapidly growing traction in healthcare and approval from the FDA making this an exciting time for us to look into this topic.

I have completed the fastPace course through (4 weeks) for this project, conducted interviews of gastroenterologists, health tech entrepreneurs, administrative leaders, and insurers to understand the tasks that need to be addressed, and am coordinating next steps with FFMI and Dr. Waljee to help push GI predictive analytics into the real world.

Methodology:

I started by doing background research on current AI programs approved by the FDA, understanding the FDA requirements, SWOT analysis on predictive algorithms, background research on Dr. Waljee's algorithm, and customer stakeholder discovery. We are now interviewing payors and administrators to understand barriers to entry, implementation, and reimbursement of these technologies in the future.

Results/Conclusion:

The FDA is making a concerted effort to approve predictive algorithms in healthcare. About 15 technologies have gained approval over the past two years but the regulations governing them are rapidly evolving. Perhaps more importantly is how customers (ie. hospitals/providers) will actually purchase these services and use them. Some health systems and payers (ie. Michigan Medicine and BlueCross BlueShield) are developing relationships with researchers/companies to develop technologies that promote safety and value. For our GI project, specifically, we are now moving towards setting up a trial where we would compare the efficacy of this program versus biologic use for IBD therapy.

Reflection/Lessons Learned:

AI is rapidly growing but has significant limitations that the FDA, health systems, and payors are starting to appreciate. Making sure these algorithms actually align with all these stakeholders' values is critical for success. Implementation can often be more challenging than development of these algorithms.