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UT Southwestern Student-Run Free Clinic: Reducing Patient Wait Time

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Abstract

Agape Multidisciplinary (Agape MD) is a student-run free clinic partnership between UT Southwestern and the Agape Clinic serving patients in Dallas, Texas. As medical student clinic managers, we noticed lengthy wait times for patients. After tracking wait time over 6 months, we report patient wait times for each component of the visit and use root cause analysis to identify strategies for and obstacles to reducing wait time. Based on this analysis, we plan to stagger appointment times, streamline intake and check-out times, and recruit more faculty members to support our patient volume.

Background

Agape Multidisciplinary (Agape MD) is a student-run free clinic in partnership with UT Southwestern and the Agape Clinic. Our mission is to provide after-hours care to residents in Dallas referred from the Agape day clinic. The clinic serves primary and specialty care needs with the help of UT Southwestern physician faculty volunteers within Pediatrics and Family Medicine.

Agape MD primarily serves Spanish-speaking, medically underserved patients through monthly pediatric clinic and family medicine clinic nights. Three student managers, four medical students (two first-year and two second, third, or fourth-year), two student interpreters, two pharmacy students, and one faculty physician volunteer to serve 3-6 patients by appointment. As a teaching clinic, Agape MD faces a problem of extended patient wait times. Wait time is a crucial metric for student run free clinic quality as a determinant of both patient and volunteer satisfaction (Simpson, 2007). Our patients are uniquely vulnerable to the stress of wait time because many have never encountered a healthcare setting before and/or have preconceived

negativity towards healthcare. Previous research supports that “increased wait time also affects perceptions of information, instructions, and the overall treatment provided by physicians” (Bleustein, 2014). Thus, to improve care at Agape MD, we aim to minimize patient wait time.

Methods

The SIPOC Diagram (Figure 1) serves as a high-level representation of the studied and improved process. It portrays each element’s suppliers, inputs, outputs, and recipients within the overarching system. Multiple aspects of the project are identified, including important stakeholders, required equipment or personnel, and the project's scope. While completing the SIPOC, we learned that our problem had more individual steps than initially expected as we broke down each part of the patient encounter. Additionally, we gained an understanding of additional stakeholders in the process other than patients.

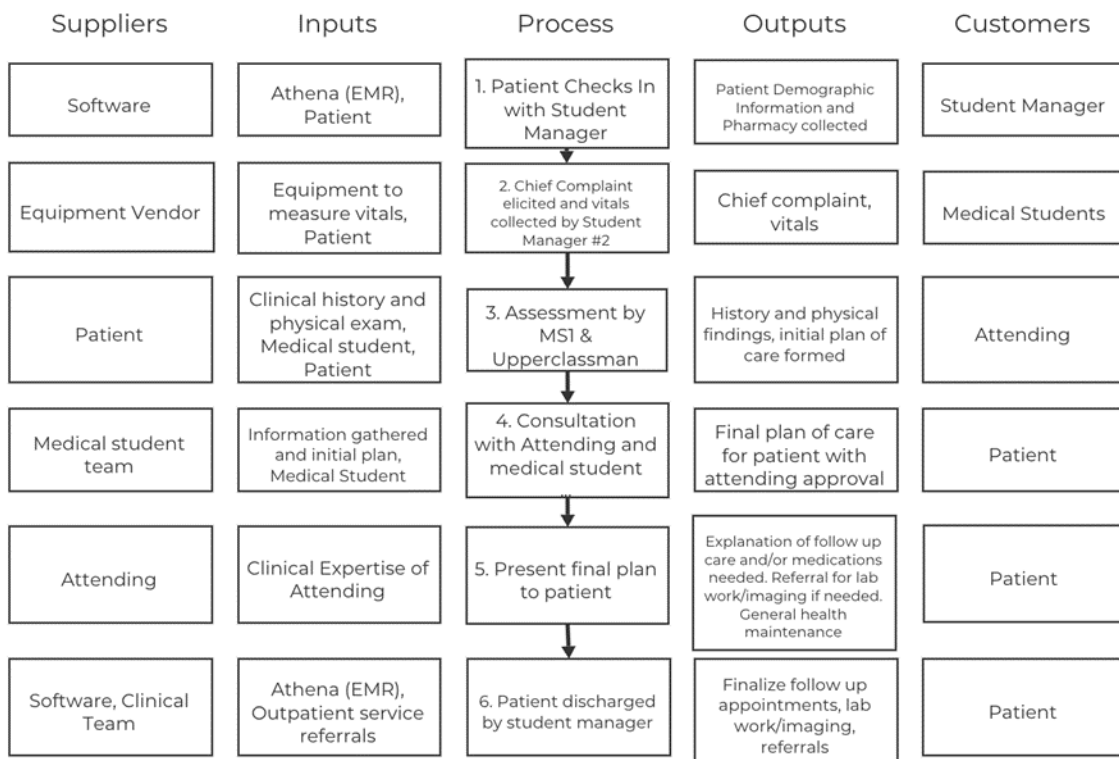


Figure 1. UTSW SIPOC Diagram

We began by outlining patient flow within the clinic from check-in to discharge (Figure 2). There are 5 key processes within a patient’s clinic visit: intake, medical student visit (gathering history of present illness and performing physical exam), medical student presentation preparation and presentation to the attending, attending and medical student patient visit, and patient check-out. Wait time is defined here as time that the patient is not with their care team.

We calculated wait time as patient intake time + medical student plan preparation and presentation time + patient check-out time. Although there are many steps from patient check-in to the initial assessment by the medical student team that increase wait time, each step serves a necessary purpose (assessing vitals, screening for chronic conditions, and ensuring correct demographic, contact and pharmacy information in the electronic health record). The next steps of the process involving plan development and presentation to the attending also increase wait time. However, these steps are necessary to the clinic as a teaching environment for students (Choudhary, 2014). Though our outlined steps are necessary, we can shorten the time required for each individual step.

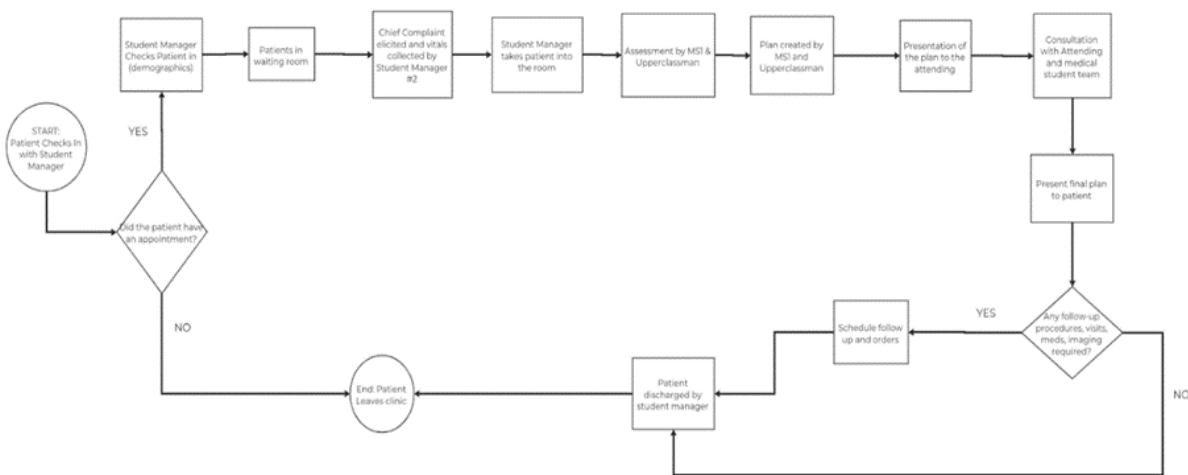


Figure 2. UTSW Free Clinic Flow Chart

Our team gathered the time each process took on clinic nights from January 2022 to June 2022. A medical student manager noted start and end times for each process as conducted in past studies of wait time (Amina et. al, 2015). Data analysis was then completed using MoreSteam's EngineRoom statistical software. Means and standard deviations were calculated for each process time over the 6 month period.

Results

A total of 22 patients were seen over this 6-month period at Agape MD. On average, patients were in the clinic for a total of 125 minutes before discharge. Within this total time, a patient's average wait time per appointment was 78.775 minutes (SD=17.32) Mean time taken for patient intake was 19.05 minutes (SD=5.32 minutes, Range=15.67 minutes). Mean time taken for the medical student visit was 26.42 minutes (SD=3.97 minutes, Range=11.5 minutes). For the plan and presentation, mean time taken was 44.8 minutes (SD=10.71 minutes, Range=30 minutes). For the attending visit, mean time taken was 13.17 minutes (SD=3.16 minutes, Range=8.67 minutes). For patient check-out, mean time taken was 14.92 minutes (SD=10.01

minutes, Range=12.66 minutes). The bar chart below illustrates the aggregate times for each process in minutes and compares the average time taken for each process over the 6-month period (Figure 3). To determine whether there was a change in wait time over the 6 months, a trend chart was created (Figure 4).

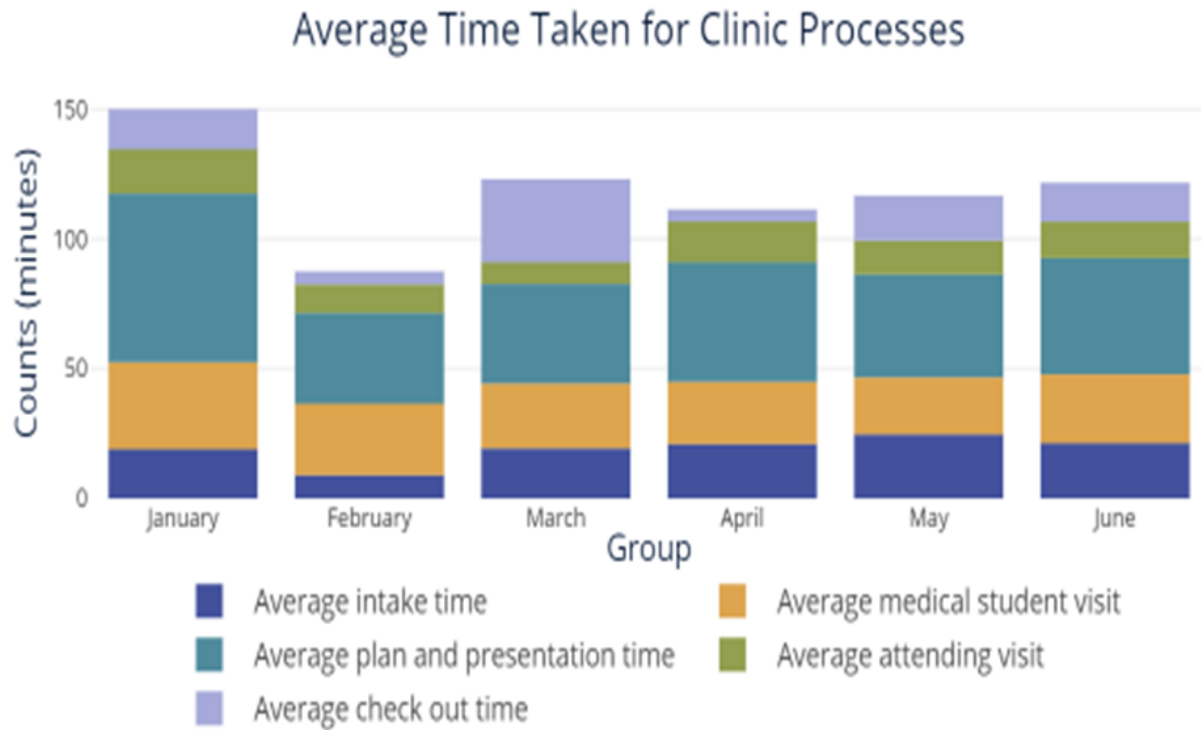


Figure 3. Bar Graph of Time Taken per Clinic Process

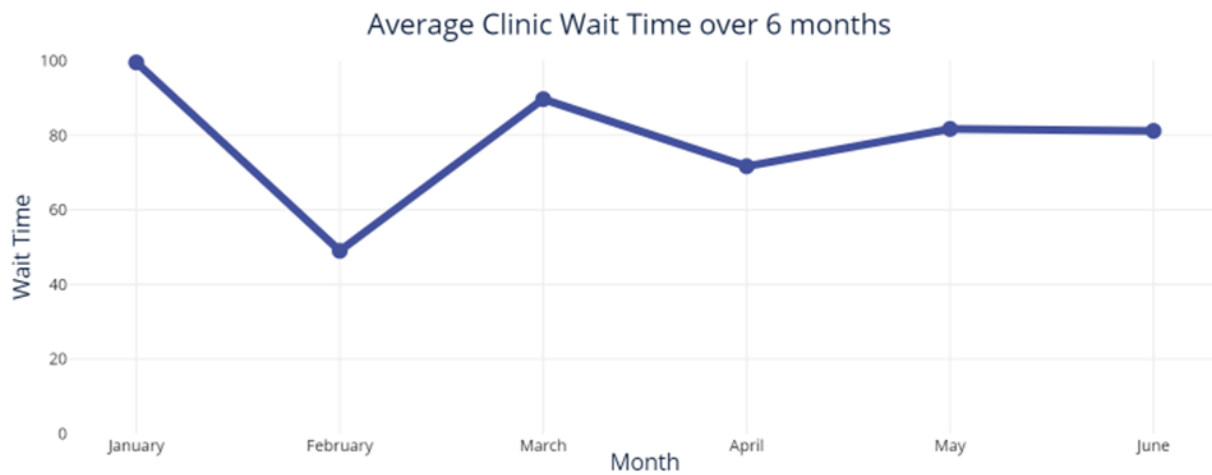


Figure 4. Clinic Wait Time Trend Chart

We then utilized a fishbone diagram (figure 5) to identify the root causes of wait time at Agape MD. The data gathered were from extensive conversations with the stakeholders of the AGAPE MD (UT Southwestern Student-Run Free Clinic) which included medical student volunteers, faculty physician volunteers (attendings), and patients.

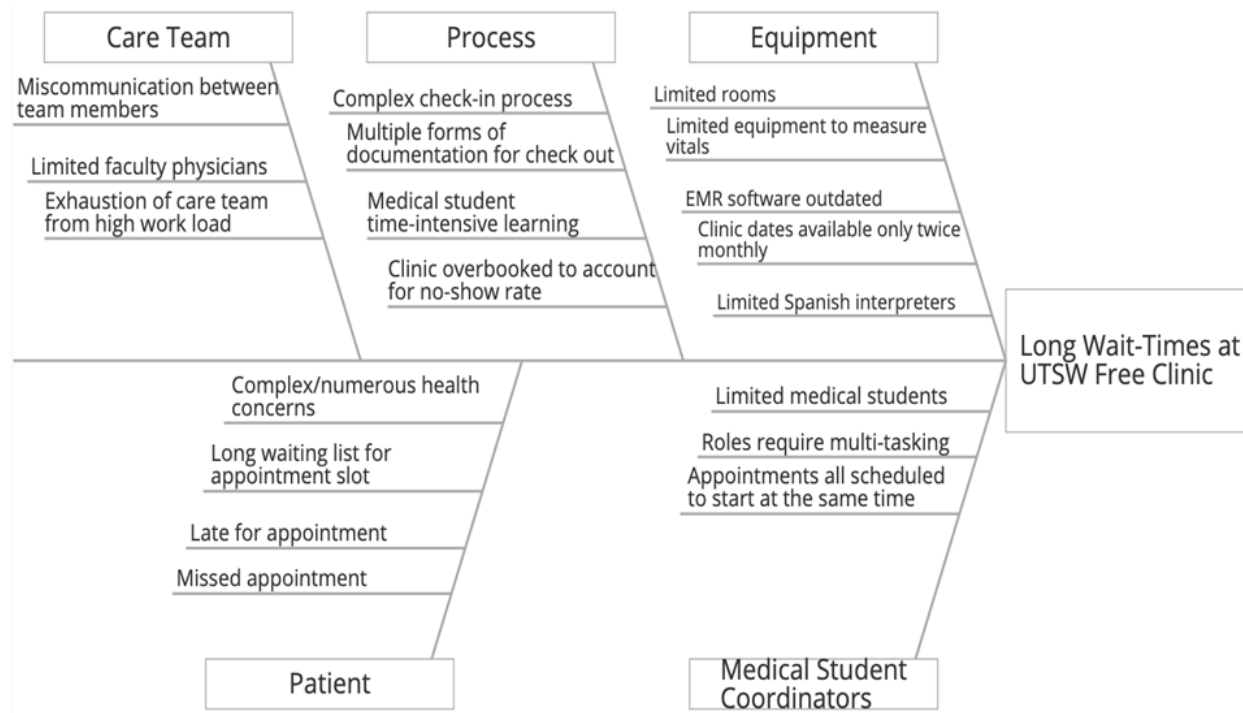


Figure 5. Fishbone Diagram

Discussion

Student run free clinics (SRFC) improve health care access in underserved populations and uniquely enhance medical school curricula, exemplifying systems-based principles such as resource allocation, advocacy, and interdisciplinary collaboration (Simpson et al, 2007, Meah et. Al, 2009). However, many SRFCs struggle to balance patient wait-times and medical student teaching (Hu & Leung, 2016).

We found that medical student plan and presentation time was consistently the longest component of wait time over the 6 months while the attending physician visit was consistently the most efficient process over the six months. Moreover, intake and check-out times could be more efficient. The check-out process time had the greatest variability over the 6 months, warranting further investigation. February wait times were lowest, however, the specific cause is unclear as personnel and patient numbers were the same. Factors contributing to overall patient wait time included overbooked attending physicians, scheduled appointments starting at the same time, and lengthy intake and checkout processes. Check-in and check-out times increased throughout clinic nights as patients waited for others to be roomed.

Limitations included lack of data from fall and winter and inadequate stratification of process time taken by medical student year. Further studies will aim to target these limitations by collecting more specific data. We will additionally record the type of encounter (new or existing patient), chief complaint for each clinic visit, management outcomes from each visit (referrals, labs, prescriptions, etc.), and patient satisfaction with their visit. We hope to identify additional factors contributing to wait time, especially check-in and check-out time.

The solutions brainstormed aimed to reduce patient wait times and ultimately improve patient care in ways that could be used by other student run free clinics. After categorizing based on level of impact, cost, and ease of implementation we proposed the following solutions. Reducing time by increasing clinic capacity is a long-term goal, but this would require additional funding and clinic space. More cost-effective solutions are staggering appointment times, increasing medical student preparedness, recruiting more attending physicians and residents per clinic night, and transferring patient intake and checkout process responsibilities to student managers. Staggering patient appointment times can mitigate patient wait time and increase the efficiency of the medical care team (Abdus-Salam et. Al, 2021). Volunteers can arrive earlier for adequate orientation time and chart review. Sending first-year medical student volunteers patient scenarios they may see in clinic but have not yet encountered in their curriculum (annual wellness exams, newborn and pediatric history taking and physical exam, vaccination schedules, etc.) could reduce the medical student preparation and presentation component of wait time. Having more attending or resident physicians can provide each medical student team with a direct supervisor and reduce patient waiting time (Hu & Leung, 2016). Standardization of the check-in and check-out process by student managers rather than medical student volunteers could increase efficiency of the check-in and check-out process (Lee et. Al, 2016). We aim to implement these improvements to increase quality of care and value to the patient.

Conclusion

As a student run teaching clinic, Agape MD faces a problem with patient wait time. After collecting data from 2022 clinic nights, we found that mean wait time was 78.66 minutes, with the majority coming from the medical student plan and presentation time, intake, and checkout time. After a root cause analysis, we determined that staggering appointment start times is a cost and time efficient solution that could significantly reduce patient wait time and increase quality of care. While implementing this solution, we will also work to streamline intake and check out documentation and increase faculty to medical student ratio.

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