

Introduction

- In this Healthcare Lab project, we worked with the Dermatology Department at Tufts Medical Center to assess patient wait times to improve patient satisfaction.
- Average wait times at dermatology clinics have increased by 46% over the past decade. Long wait times have a direct impact on patient satisfaction (worsens overall anxiety, response to care, and patient retention and increases medical malpractice claims)

Methods

- Observation on Qualitative Feedback
- Data Model Analysis & Optimization
- Monitoring and revamping staffing scheduling Initiatives to reduce wait times through recommendations to staffing schedules

Figure 1. Patient flow diagram

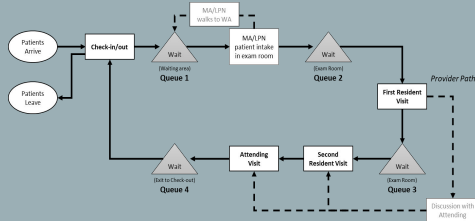


Figure 2. Histogram of patient wait time

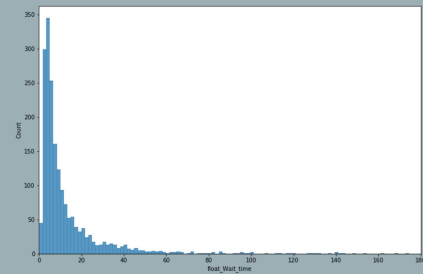


Table 1. Patient survey data

Press Ganey Survey Data (9/21 - 12/21)		
	# of respondents	% of total
Total surveyed	520	100%
Mixed or negative reviews	139	26.7%
Delay complaints	17	3.3%
Appointment complaints	20	3.8%

Figure 3. Histogram of patient time with provider

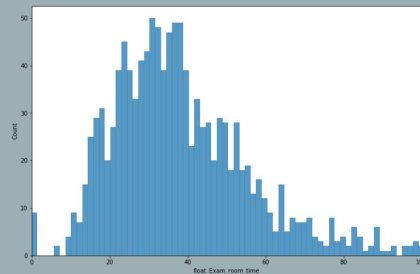


Figure 4. Simulation of patient wait times by the number of physicians

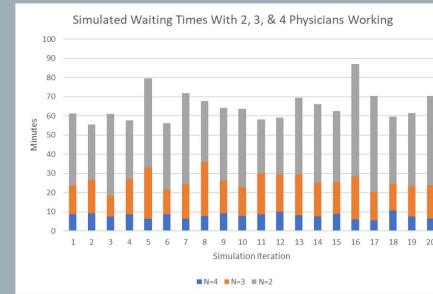


Figure 5. Queuing simulation model

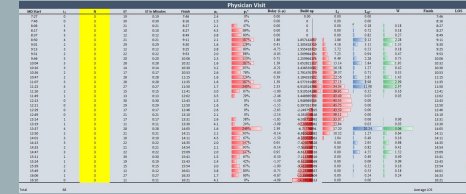


Figure 6. Simulation of physician capacity utilization

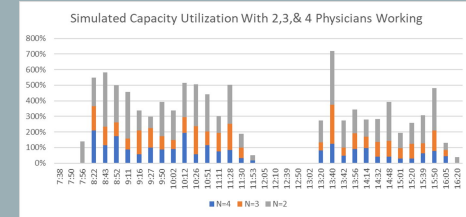


Table 2. Summary statistics

Summary Statistics	Values	Standard Dev
Total number of patients	429	
Age (years)	45.9	± 22.0
Gender (female)	54.2%	
Residing in Boston	26.8%	
Uninsured	11.7%	
Late arrivals	28.6%	
Late arrival time	14m 11s	± 19m 38s
Early arrival time	18m 13s	± 18m 7s
Check-in time	3m 31s	± 4m 4s
Wait after check-in	9m 47s	± 10m 26s
MA outage time	4m 19s	± 5m 1s
Wait after MA outage	7m 46s	± 8m 47s
1st resident visit time	7m 7s	± 4m 1s
2nd resident visit time	10m 19s	± 6m 34s
Wait between 1st and 2nd resident	4m 14s	± 5m 28s
Total resident visit time	23m 3s	± 9m 15s
Total attending visit time	10m 34s	± 7m 43s
Check-out time	2m 52s	± 2m 49s
Total visit time	52m 25s	± 19m 35s

Recommendations

- Front desk is underutilized. However, current staffing levels may be justified given not all front desk tasks/interactions are accounted for in model
 - LPN/MA staffing can be reduced to 2 with no wait times observed, but 3 is optimal
 - No less than 4 physicians total when see a full patient load (65)
 - Organizational Analysis – Using formal & informal relationships to influence change / staff training recommendations
 - Patient Analysis – Scheduling appointments based on location, ailment, additional demographic information
- * Special thanks to Clarissa Yang, Chair of the Department of Dermatology at Tufts Medical Center.