



Boston Medical Center (BMC) Regionalization

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Background and Objective

Regionalization = patients being placed in the correct unit for their condition

BMC is experiencing lower regionalization than desired.

-75%

We aim to increase successfully regionalized patients in order to maximize efficiency and effectiveness of care as well as physician satisfaction.

Methodology

Our multifaceted approach included conducting **on-site observations**, administering **interviews**, and employing **data analysis** and optimization **modeling**. Additionally, we reviewed **literature and best practices** from leading academic medical centers.



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Literature: Findings

- Off-service placement extends LOS (Dong et. al)
- Geographical localization improves communication, satisfaction
- Using simulation-based optimization to determine secondary unit assignments shortened LOS (Zhang et. al)



Interviews: We interviewed admitting staff, healthcare providers

- Underlying reasons for low regionalization: patient placement rules, ED wait time rules, team-unit assignment, discharge timings, OR schedules, patient care prioritization

Data Analysis:

- We found a mismatch between the total census of the assigned teams and bed capacity for each unit

Recommendations

- Adjust ED wait time rule for target bed availability (evaluate effect on regionalization outcomes with simulation) 
- Optimize team-unit assignments (assign a primary unit and secondary unit for each team) 
- Pilot an all Gen-Med unit with rolling caps
- Move patients to correct units on weekends when census is lower

Optimization output for primary team-unit assignment:

Unit (# of beds)	Current avg. census / occupancy	Recommended team assignment	Projected avg. census / occupancy
A (8)	11.9 / 149%	Medicine overflow	0 / 0%
B (38)	29.5 / 78%	GIM 3, FM B, Infectious Disease, Neurology, Stroke	45 / 118%
C (36)	37.2 / 103%	GIM 1, GIM 4, Renal	43 / 119%
D (36)	42.2 / 117%	GIM 2, FM A, Geriatrics	43 / 119%
E (36)	52.7 / 146%	Hospitalist 4, Hospitalist 6, FM C, General Cardiology	43 / 119%
F (46)	53 / 116%	Hospitalist 2, Hospitalist 3	53 / 116%
G (37)	45 / 121%	Hospitalist 1, Hospitalist 5	44 / 119%
H (22)	n/a	Hem/Onc A&B	25 / 114%

Summary and Conclusion

We were able to diagnose root causes of low regionalization through observational studies and interviews. Then, through literature review, data analysis and modeling, we were able to identify key levers and opportunity areas to make some recommendations,