

SpaceMed Case Study

Planning an Ambulatory Care Facility: The Lean Toyota or the More Generous Hummer



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Compare the actual room-by-room
space programs at
www.spacemed.com/acf

Background

Prudent Health System (PHS) planned to construct a new outpatient building to provide space for urgent care, ambulatory surgery, and various hospital-sponsored clinics on its main hospital campus. Space was needed to accommodate the following ten-year workload projections and corresponding clinical services:

- Urgent care center with 32,000 annual visits
- Ambulatory surgery center with 4,200 annual surgical cases
- Hospital-sponsored clinics:
 - Medicine (23,000 annual visits)
 - Surgery (15,000 annual visits)
 - Neurosciences (6,000 annual visits)
 - Orthopedics (16,000 annual visits)

In addition, a small *express testing* area was planned to consolidate routine, quick turnaround outpatient testing in a single area — including X-ray, EKG, and specimen collection — along with a small satellite laboratory.

A room-by-room space program was prepared based on the projected workload and other functional planning assumptions provided by PHS ambulatory care staff. An initial schematic drawing was developed by the design architect and the project cost was estimated. A business plan was then prepared along with a financial pro forma analysis.

Due to the large amount of space programmed and corresponding high project cost, and high operational costs relative to the projected incremental revenue, PHS's Chief Financial Officer asked the executive team whether they really needed a "Hummer" when a "Toyota" might suffice. The executive team agreed to evaluate the impact on overall space need (and resulting capital and operational costs) of planning a "lean" facility versus a more "generous" facility.

Planning Approach

The executive team reviewed the original operational assumptions documented in the functional program. In conjunction with the facility planning consultant, they identified several key factors that could reduce the overall size and cost of the new outpatient facility:

- **Operational assumptions.** Operational processes were reengineered to increase the exam/procedure room turnaround time and the weekly hours of operation were expanded — resulting in the need for less exam/procedure rooms. In addition to more efficient space utilization, customer service would also be enhanced.

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- **Configuration of the clinics.** The clinics were originally programmed based on their current organization and located in four distinct physical areas on the hospital campus. By combining the medicine, surgery, and neurology clinics into a single shared clinic, improved space utilization and staffing efficiencies would be possible. The new configuration also allowed the orthopedic clinic to be located on the first floor thus eliminating one of the X-ray rooms and facilitating coverage by the radiology techs working in the express testing area.
- **Size of exam/procedure rooms and offices.** Based on a review of its existing facilities, PHS determined that it did not need such generously-sized exam rooms and offices — for example, the clinic exam rooms were re-programmed at 100 net square feet (NSF) versus 120 NSF as originally programmed.
- **Facility design and layout.** Alternate facility layouts were evaluated that resulted in less space required for intradepartmental and public circulation corridors. Along with two less floors, this substantially reduced the amount of department gross square feet (DGSF) and building gross square feet (BGSF).

Comparison of Facility Planning Assumptions and Space Need

A summary of the assumptions used for the lean versus the more generous space planning approach is shown on the following page. The resulting space need is summarized in the table below. In the lean scenario, 40,000 BGSF less space is required to accommodate the same projected annual workload. The actual room-by-room space programs can be viewed at www.spacemed.com/acf.

Facility Component	Space Program Summary	
	Generous	Lean
Urgent Care Center	15,000	8,600
Ambulatory Care Center	22,000	13,100
Orthopedics Clinic	6,200	3,700
Medicine Clinic	7,500	---
Surgery Clinic	5,500	---
Neurology Clinic	5,900	---
Shared Clinic	---	8,000
Express Testing Area	3,800	3,400
Entrance Lobby	3,200	3,200
Total DGSF	69,100	40,000
DGSF to BGSF Conversion Factor	1.30	1.25
Total BGSF	90,000	50,000

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Comparison of Ambulatory Care Facility Planning Assumptions

	Generous Space Program	Lean Space Program
Urgent Care Center <i>32,000 Annual Visits</i>	<ul style="list-style-type: none"> Staffed for limited weekly hours Average exam/treatment room turnaround time of 120 minutes Generously-sized exam/treatment rooms and offices Private provider offices Generous NSF to DGSF space conversion factor 	<ul style="list-style-type: none"> Staffed for extended weekly hours Average exam/treatment room turnaround time of 75 minutes Moderately-sized exam/treatment rooms and offices Shared provider offices Moderate NSF to DGSF space conversion factor
Ambulatory Surgery Center <i>4,200 Annual Surgical Cases</i>	<ul style="list-style-type: none"> Staffed for limited weekly hours Average of 3.5 surgery cases per OR per day Generously-sized procedure rooms and prep/recovery bays Generous NSF to DGSF space conversion factor 	<ul style="list-style-type: none"> Staffed for extended weekly hours Average of 6.0 surgery cases per OR per day Moderately-sized procedure rooms and prep/recovery bays Moderate NSF to DGSF space conversion factor
Orthopedic Clinic <i>16,000 Annual Visits</i>	<ul style="list-style-type: none"> Staffed 48 weeks per year Average exam/treatment room turnaround time of 45 minutes Generously-sized exam/treatment rooms and offices Dedicated X-ray room Private provider offices Generous NSF to DGSF space conversion factor 	<ul style="list-style-type: none"> Staffed 50 weeks per year Average exam/treatment room turnaround time of 40 minutes Moderately-sized exam/treatment rooms and offices X-ray room shared with express testing area Shared provider offices Moderate NSF to DGSF space conversion factor
Other Clinics: Medicine Clinic Surgery Clinic Neurology Clinic <i>44,000 Annual Visits</i>	<ul style="list-style-type: none"> Staffed 48 weeks per year Three separate clinics with varying daily hours of operation and exam/treatment room turnaround times Four consult rooms and two larger testing/procedure rooms Generously-sized exam/treatment rooms and offices Private provider offices Generous NSF to DGSF space conversion factor 	<ul style="list-style-type: none"> Staffed 50 weeks per year Shared clinic space with an average exam/treatment room turnaround time of 35 minutes Two consult rooms and one larger testing/procedure room (shared) Moderately-sized exam/treatment rooms and offices Shared provider offices Moderate NSF to DGSF space conversion factor

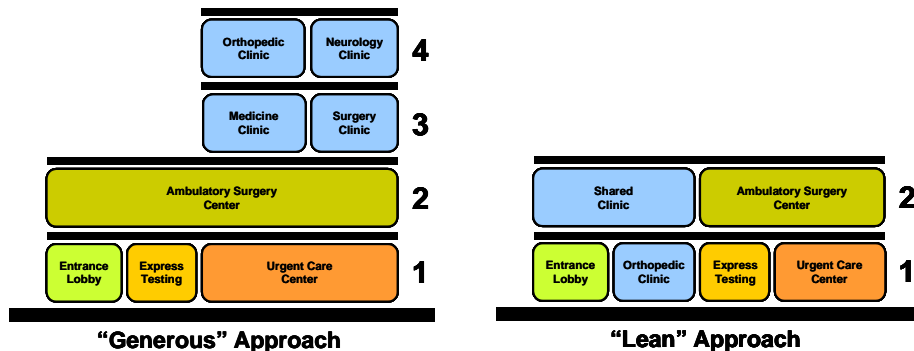
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Conclusion

With 40,000 BGSF less space required in the lean scenario — to accommodate the same projected annual workload — the estimated project cost would be significantly reduced, particularly since the new space program can be accommodated with only two floors versus four as originally planned.



The PHS executive team eventually decided to construct the smaller, lean facility which would also be less costly to operate over time than the more generous facility. Moreover, the cost savings allowed the building to be designed to facilitate future horizontal as well as vertical expansion as required.

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