CHAPTER 3

Defining Strategic Direction and Future Demand

In the third edition of *Healthcare Strategic Planning*, author Alan M. Zuckerman (2012) describes a four-stage strategic planning approach for healthcare organizations:

1. *Environmental assessment* involves a review of the organization's mission, philosophy, and culture; an external assessment of the market structure and dynamics; an internal assessment of distinctive characteristics; and an evaluation of competitive position in the market.
2. *Organizational direction* is where mission, vision, alternative futures, and key strategies are formulated.
3. *Strategy formulation* is where goals and objectives for the organization are established, particularly related to critical issues.
4. *Implementation planning* involves identifying the actions needed to implement the plan, such as the schedule, priorities, and resources.

The first stage focuses on the question, where are we now? Stages two and three address the question, where should we be going? The fourth stage responds to the question, how do we get there? Although this overall process is similar to that used to develop a long-range facility master plan (or capital investment strategy), most healthcare organizations use the term *strategic planning* to describe market planning with an increasing emphasis on surviving financially while fulfilling the organization's mission. The strategic (market) planning process logically precedes facility planning, assuming that business strategies must be in place and future demand must be forecasted before resources, such as facilities, equipment, and staff, can be defined. However, there are several benefits to integrating, or at least overlapping, these efforts.

UNDERSTANDING YOUR MARKET AND PATIENT POPULATION

An important component of strategic planning is an assessment of the organization's market and the socioeconomic characteristics of the service area population. Patients may have different perceptions and expectations depending on their age, sex, ethnicity, average income, education level, occupation, and so on. Although the patient population to be served by a healthcare organization may change over the life of the facility, hospital leaders, facility planners, and architects should have a general understanding of the patient population for which their facilities are planned.

INTEGRATING FACILITY PLANNING WITH STRATEGIC (MARKET) PLANNING

Integrating the facility assessment with the internal market assessment during the strategic planning process brings a new dimension to this effort. For example, a review of facility strengths and weaknesses, along with potential facility and equipment capacity constraints and surpluses, may reveal unforeseen opportunities for the organization to embark on new strategies with minimal risk. Alternately, the organization may decide early in the process to discard specific strategies that are deemed cost prohibitive.

Specifically, surplus space and equipment such as a vacant nursing unit or excess surgical capacity may provide quick and low-risk opportunities to launch a new program or cultivate an existing one with minimal capital investment. On the other hand, if an organization must construct and equip new space, the financial risk and the delayed timing could render a particular strategy less desirable.

If an organization is faced with a deteriorating physical plant that requires millions of dollars of infrastructure upgrading just to stay in business, then its strategic planning efforts may be focused on revenue growth and financial viability.

BRIDGING THE GAP: UTILIZATION ANALYSES THAT ARE UNIQUE TO FACILITY PLANNING

Strategic plans for healthcare organizations vary in the degree to which specific strategies and actions are translated into quantified demand forecasts and tangible

resource requirements such as facilities, equipment, and staff. A gap often exists between the implementation planning stage that concludes the strategic planning process and the input needed to commence the facility planning process. The translation of the organization's strategic planning initiatives and future service volumes into clinical service needs by location and corresponding space requirements is a critical aspect of facility master planning. Whether developed as part of the strategic planning process or as part of the facility planning process, identification of the following, at a minimum, is required:

- New programs and services that will require space or new facilities
- Future bed need by clinical service line, acuity, patient accommodation type, and location, including the development of "high-bed" and "low-bed" scenarios (if applicable)
- Ambulatory services strategy relative to projected demand, service delivery locations, and physician office needs
- Future ancillary workload projections (by location) for selected diagnostic and treatment services, with inpatient and outpatient breakdown

Strategies related to market penetration, physician recruitment, and customer satisfaction, along with other studies on the current status and future direction of key clinical service lines, should also be incorporated into the facility planning effort. In particular, detailed business plans for new or expanding clinical service lines provide a sound foundation for facility planning.

Even though analyses of current and historical inpatient utilization, bed need, and ancillary workload projections are commonly undertaken as part of the strategic planning process, planning a facility requires a different perspective.

HIGH-BED AND LOW-BED SCENARIOS

For facility planning purposes, projecting the need for an absolute number of beds at some future date is not nearly as important as identifying the range of beds required based on the most optimistic and pessimistic views of future market conditions. This type of sensitivity analysis can help an organization understand the impact of forecasting inaccuracies. Such awareness is particularly important because decisions to expand or replace inpatient facilities start a chain reaction of events and involve a long-range commitment of dollars, staff time, and operational disruption.

Considering the fluctuation in demand for inpatient beds over the past several decades, as described in Chapter 1, hospitals now face a series of confusing choices.

After the advent in the 1980s of Medicare's diagnosis-related groups (DRG) payment methodology in the public sector and managed care in the private sector, healthcare strategists and policy experts advised hospitals to reduce their surplus inpatient bed capacity as admissions, use rates, and lengths of stay declined. Hospitals reacted with downsizings, consolidations, and closures, effectively reducing inpatient capacity, though the decline slowed after 2003. Inpatient admissions in the United States rose between 1992 to 2012; however, both the rate of inpatient admissions and the average length of stay have reached the lowest levels on record, creating an overall decline in the demand for inpatient beds (American Hospital Association and Avalere Health 2014). The Affordable Care Act encourages the management of population health across the care continuum in an effort to keep patients healthy—and out of acute care facilities—through preventive and primary care services. Though the needs of aging baby boomers and the newly insured continue to grow, inpatient utilization may continue to decline thanks to sophisticated diagnostics, minimally invasive treatment, and the shift from a hospital-centric to a population-centric model.

High bed and low bed need scenarios can be modeled by varying future planning assumptions relative to use rate, market share, length of stay, and occupancy rate (shown in Exhibit 3.1). Any one or all of these variables can be modified to develop a realistic range of future bed need for a specific organization. The goal of this type of analysis is to evaluate the magnitude of renovation or construction necessary given the range of optimistic versus pessimistic scenarios as illustrated in the case study presented in Chapter 12.

Historically, 80 percent occupancy was used as a target for acute medical and surgical nursing units. However, organizations with only private patient rooms are reevaluating this target. Given the high cost of construction, as well as planning uncertainties, many financial officers are willing to accept the risk of not accommodating all demand during peak periods in lieu of having vacant patient rooms during average census periods. Statistically, a hospital with all private patient rooms should be able to maintain a higher occupancy rate than one with a large number of semiprivate or multiple-bed rooms. Targeting a higher occupancy level is not practical for an organization with a high percentage of semiprivate patient rooms.

Target occupancy rates for an individual nursing unit or service line are generally a function of the nature of arrivals (random vs. predictable), the inherent risk of not accommodating peak demand (intensive care vs. behavioral health), the size of the service or unit, and seasonal fluctuations in demand. These factors are why intensive care, obstetrics, and pediatrics units may be planned with much lower target occupancy rates, such as 70 percent, and behavioral health units may be planned with higher rates, such as 95 percent.

Exhibit 3.1 Comparison of Future Bed Need Scenarios

		Future Bed-Need Scenarios		
	Current	Low Bed Need (Declining Market Share)	Medium Bed Need (Current Market Share)	High Bed Need (Increased Market Share)
Service-area population	445,030	490,000	490,000	490,000
Use rate (admissions/1,000)	113.5	113.5	113.5	113.5
Hospital market share	27.4%	26.1%	27.4%	30.1%
Hospital admissions	13,840	14,516	15,239	16,740
Hospital length of stay	5.40	4.90	5.15	5.40
Hospital census	205	195	215	248
Bed need at:				
90% Occupancy		217	239	276
85% Occupancy		229	253	292
80% Occupancy		244	269	310
Current bed capacity	240	240	240	240
Bed aurplus (+) or deficit (-)		+23 to -4	-1 to -29	-36 to -70

EVALUATING BED SCENARIOS WHEN THERE IS A DEFICIT OF PRIVATE ROOMS

The trend in planning acute care hospitals is toward providing only private patient rooms and eliminating multiple-bed rooms or wards. If your facility was constructed with only private patient rooms, then you can skip to the next section. Otherwise, you will be challenged with planning a staged conversion of semiprivate patient rooms to privates over time. However, such changes may offer you additional flexibility that could offset forecasting inaccuracies. If the low-bed scenario plays out, then some of the existing semiprivate patient rooms could be used as single occupancy. On the other hand, if the high-bed scenario comes to fruition, then the organization could deploy some of the rooms as semiprivates during peak census periods.

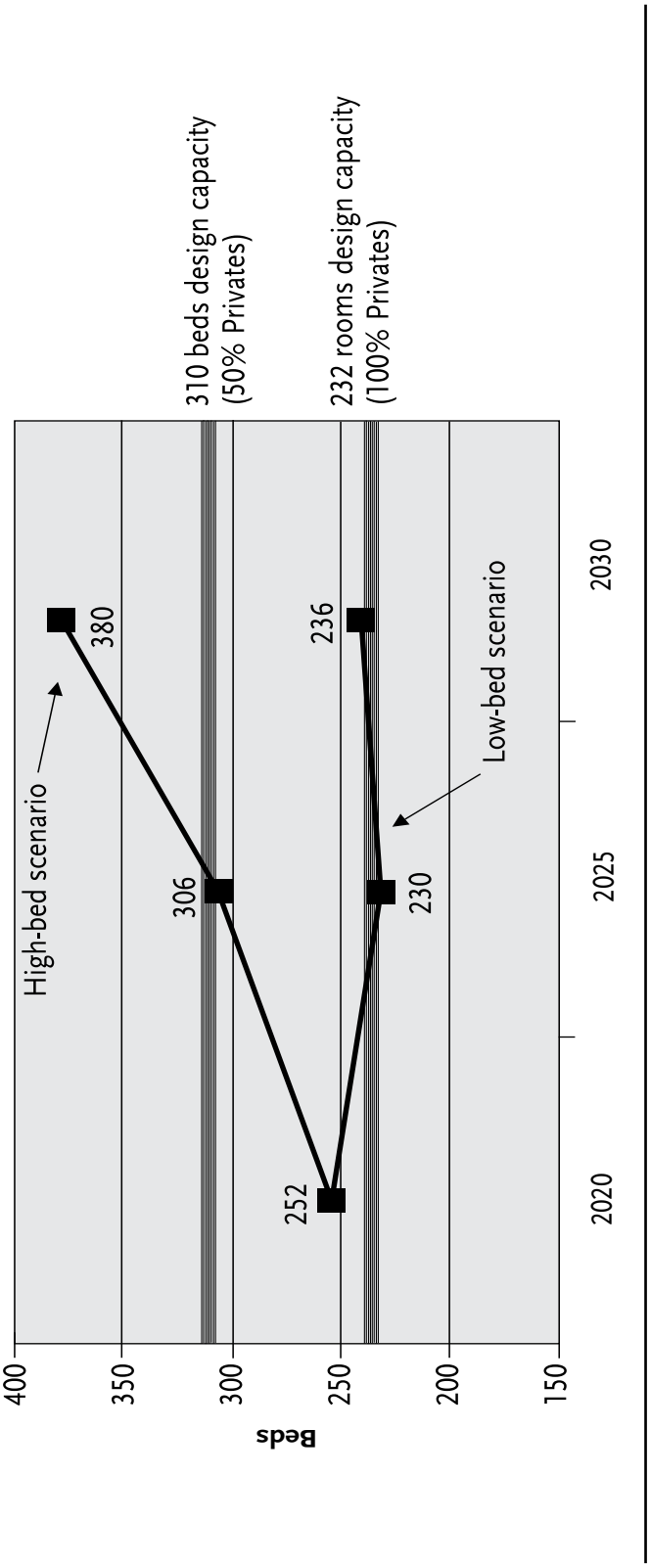
Hospitals can achieve maximum flexibility by providing private, acuity adaptable patient rooms that can be used to deliver varying levels of care. Single-patient rooms maximize the patient's privacy, minimize costly patient transfers, facilitate the participation of family members in care, and better address special needs such as infection control.

Although higher occupancy levels are achievable in units with only private rooms, the associated construction costs will increase slightly because of increased space requirements and additional patient toilet and bathing facilities. Thus, because of budgetary or existing facility constraints, in some cases planning for a mixture of private and semiprivate rooms may be necessary (see Exhibit 3.2). Although semiprivate rooms are less costly to construct, they are also less flexible and more beds are needed to accommodate a given average daily census than in an all–private room scenario because of the need to separate male and female patients and those with incompatible medical conditions. Some organizations pursue a prudent approach by planning enough total patient "rooms" to accommodate the average daily census in such a way that semiprivate rooms are deployed only during high-census periods—such as when the census is above 85 percent occupancy.

SAME-DAY-STAY PATIENTS AND OBSERVATION BEDS

The forecasting of beds that are used for observation, with a length of stay generally less than 24 hours, also varies from one organization to the next. Patients requiring observation may be held in the emergency department or placed on a traditional inpatient nursing unit for a 23-hour stay or, in the case of Medicare patients, for less than two midnights of medically necessary hospital care. Observation patients

Exhibit 3.2 Example: Evaluating the Impact of Future Bed Scenarios on Patient Room Mix



are frequently housed on inpatient nursing units, affecting inpatient bed capacity. Observation status is primarily used for reimbursement purposes; the "outpatient" and his care may vary little from that of a traditional inpatient.

Nursing staff will often take issue with bed forecasts that fail to account for this growing group of patients that typically occupy inpatient beds. Although recording these patients on daily census reports is becoming more common for healthcare organizations, most traditional bed need methodologies are not designed to accommodate this group of patients. At the minimum, the current daily number of observation and same-day patients occupying an inpatient bed should be estimated based on central data sources or by conducting periodic data sampling unit by unit. With these data, the optimal setting for these patients should be identified—for example, inpatient bed, same-day medical procedure unit, observation unit, or the ED—and future assumptions regarding bed need by location (setting) can be confirmed.

LOCATION, LOCATION, LOCATION

The real estate investment mantra "location, location, location" is critical when assessing and projecting healthcare utilization data for facility planning. Healthcare organizations collect data for many different purposes, most notably for financial accounting of revenue and costs. Data may also be used to evaluate operational efficiency and staff productivity. For facility planning purposes, however, utilization data by location are most critical. Such data are often difficult to ascertain from the forecasts of inpatient and ancillary service demand generated for a strategic plan.

Emergency visits and obstetrical deliveries (births) are often projected during the strategic planning process by applying use rates per 1,000 population and market-share assumptions to forecast future (market-based) demand. However, the rigor of forecasting other ancillary workloads is often insufficient. Forecasts for major services, including surgical cases, endoscopies, imaging procedures, and invasive and noninvasive cardiology, are often developed by department or service line managers (a bottom-up approach). A typical methodology involves simply extending the historical trend forward to the designated future planning horizon. Inpatient and outpatient breakdowns may not even be delineated. The forecasting of less-traditional service volumes, such as hospital-based medical procedures including transfusions, biopsies, and IV therapy, is often even less scientific.

Procedure volumes gathered from central data sources do not typically designate the location that the procedures were performed, although department statistics are generally more detailed. Procedures performed at the point of care with portable equipment are often grouped with department-based inpatient or outpatient

procedures. This categorization is a particular problem with routine radiology, fluoroscopy, electrocardiogram, and ultrasound statistics, where procedures performed with portable equipment at the patient's bedside or in an outpatient clinic may represent a sizable proportion of the workload.

In general, ancillary workloads should be broken down into inpatient and outpatient components, and each should be projected separately. The inpatient component can be correlated to inpatient admissions by analyzing the historical ratio per admission and then applying a target ratio to the forecasted admissions. Projection of the outpatient component is far less scientific and should be qualitatively based on market strategy, physician recruitment plans, pending reimbursement changes, and historical trends. Exhibit 3.3 provides an example for forecasting surgery, computerized tomography (CT), and magnetic resonance imaging workloads.

Overly optimistic growth projections prepared by department or service line managers should be challenged, particularly if they result in a decision to commit capital dollars to additional equipment, procedure rooms, and support space. Also, outpatient volumes that are erratic and show no discernible trend should be monitored. In some cases, current workloads may be artificially low because of problems recruiting qualified staff. Knowledge of individual physicians and their status should also be incorporated into the projection of outpatient volumes. Examples may include

- surgeons who lack commitment to the organization and alternate between hospital-based and outpatient surgery facilities year to year or who are planning to invest in their own freestanding ambulatory surgery center;
- cardiologists who alternate between competing organizations depending on which facility has the latest technology; and
- physicians whose interest in performing specific procedures such as X-ray, endoscopy, and chemotherapy at the hospital-based facility, versus in their own offices, fluctuates depending on reimbursement and regulatory issues.

Highly productive physicians or surgeons who are close to retirement may also have a significant impact on future workload projections. Alternately, physician recruitment plans that could result in substantial workload growth should be factored into workload forecasts. Unfortunately, I have seen many instances in which a physician specialist demanded new equipment and space from a trusting hospital administrator and then skipped across town to the competing hospital once the first hospital's new facilities opened.

Exhibit 3.3 Example: Projecting Ancillary Workloads

Med/Surg/ICU	2012	2013	2014	2015	➡	2020	Comments
Admissions	26,578	27,165	28,423	29,375	➡	41,000	Projected medical/surgical/ICU admissions

Surgery	2012	2013	2014	2015	➡	2020	
Open-heart cases	1,288	1,303	1,334	1,296		1,296	Status quo assumed
Other IP cases	10,465	10,974	11,657	12,349		17,220	Calculated
IP cases/admission	0.39	0.40	0.41	0.42		0.42	Assumes current ratio will be maintained
OP cases	13,984	15,893	16,716	16,901		17,000	Will level off with off-site competition
% OP cases	54%	56%	56%	55%		48%	Calculated
Total cases	25,737	28,170	29,707	30,546		35,516	

CT	2012	2013	2014	2015	➡	2020	
IP tests	9,350	10,220	11,519	12,169		16,810	Calculated
IP tests/admission	0.35	0.38	0.41	0.41		0.41	Assumes current ratio will be maintained
OP tests	17,410	21,187	22,788	23,980		27,800	Assumes growth of 3 percent per year
% OP tests	65%	67%	66%	66%		62%	Calculated
Total tests	26,760	31,407	34,307	36,149		44,610	

MRI	2012	2013	2014	2015	➡	2020	
IP tests	2,107	2,256	2,294	2,456		3,280	Calculated
IP tests/admission	0.08	0.08	0.08	0.08		0.08	Assumes current ratio will be maintained
OP tests	5,910	5,822	6,005	6,320		8,060	Assumes growth of 5 percent per year
% OP tests	74%	72%	72%	72%		71%	Calculated
Total tests	8,017	8,078	8,299	8,776		11,340	

PLANNING CENTERS OF EXCELLENCE

For a special situation in which an organization is planning to realign and colocate specific treatments and procedures by service line, it may be challenged when identifying and quantifying the specific workloads that will occur in the new center. Exercise caution so that projected workloads are not counted twice, resulting in the planning of capacity at both a new specialty center and an existing hospital-based department or freestanding diagnostic facility.

LINKING THE CAPACITY ASSESSMENT TO FORECASTS OF FUTURE DEMAND

Incorporating the capacity assessment described in Chapter 5 into the workload forecasting effort is important. In the capacity assessment, the current capacity of each major clinical service is identified based on the existing number of procedure rooms, the equipment and technology, and the specific operational characteristics; then the optimal capacity that could be achieved through operational changes, such as extended hours of operation, new equipment, and procedural changes, is defined. With this knowledge in hand, the workload forecasting activity can be focused on those services that are presently at capacity or near capacity relative to projected future workload volumes.

For example, the planner may determine that an existing surgery suite where 70 percent of the cases are ambulatory, is averaging 750 annual cases per operating room (three cases per day, 250 days per year), which is very low utilization. If weekday hours were extended in such a way that one more case were added each day, the existing number of operating rooms could accommodate a 33 percent increase in workload. In this case, future workload forecasts would not need to be scrutinized unless explosive growth (beyond 33 percent) is anticipated. As another example, if an older CT unit, which accommodates 12–16 patients in an eight-hour shift, is replaced with a high-speed model that can accommodate 16–22 patients per shift, the unit could achieve a 35 percent increase in workload without facility expansion. If the same imaging suite were also able to staff and scheduled patients for six hours on Saturdays, the hospital could accommodate future growth of more than 50 percent. With this kind of operational flexibility, facility planners need spend little time debating the accuracy of forecasts.

THE APPROPRIATE PLANNING HORIZON FOR FACILITY PLANNING

Much debate often takes place regarding appropriate planning horizons. Population-based forecasts of inpatient admissions, births, or ED visits must correspond with the planning horizons of the available population projections and will only be as accurate as the population forecasts on which they are based. At the same time, new healthcare facilities built today must meet the needs of patients for many decades beyond the standard five- to ten-year strategic planning horizon. A prudent approach is to first understand the current and optimal capacity of existing equipment, procedure rooms, and support space and then to focus on those services for which capacity is an issue. Finally, as discussed in Chapter 11, the planning of flexible, multiuse, or adaptable facilities can cost-effectively offset inaccuracies in workload forecasting. Unless a new or replacement healthcare facility is being planned, most healthcare organizations will translate their facility development strategies into immediate (within two years), short-term (within two to five years), and long-range (beyond five years) projects, as described in Chapter 7. These three-part plans are necessary because of the length of the planning, design, and construction cycle and the capital funding and staff energy required to execute the facility master plan.

REFERENCES

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