The business of hospitals is significantly more complex than most other businesses. The services consumed vary greatly across “customers” and many outside entities, particularly the government, impact the actual amount paid for those services. The number of factors that can have an influence on success is staggering but needs to be corralled into an understandable structure. That is where service lines come in to play. An effective service line structure and approach is critical to understanding performance drivers and responding appropriately to operational and financial outcomes.

**Service Line Management Defined**

The term “service line” has been defined in many ways but not all are the same in terms of effectiveness. An effective service line structure groups patients according to a common disease tract, such as cardiology or cancer. The leader of the service line can then focus on working with the physicians, surgeons and departments most closely associated with that disease grouping. Service line leaders should be charged with the performance of their service lines, not individual departments such as Radiology or Labs. Maximizing service line profitability and quality is the ultimate goal of the service line leader. They accomplish that by:

- Understanding the true costs of caring for patients
- Identifying variation in care patterns across patients or physicians
- Maintaining strong lines of communication with the various players, particularly physicians
- Evaluating payor performance and working with revenue cycle to maximize payments
- Predicting, tracking and responding to changes in case mix or volumes

**Creating Effective Service Lines**

The first step in employing a service line approach is to design the structure to support the objectives. All patients should be included in a service line structure that has meaning. A typical starting point is MS DRG for inpatients. Additional criteria, such as gender, age, and diagnoses or procedures, are often required in conjunction with MS DRG to get the appropriate specificity. Pediatrics and Women’s Services are two areas where an organization may align patients based on age or gender rather than purely disease.

Outpatients have historically been a challenge since few hospitals code them with MS DRGs. The range of ICD9 diagnoses and procedures codes that can occur on the outpatient side can be too overwhelming for some organizations. As a result outpatients are typically classified based on the services they received, such as ambulatory surgery, radiology or lab. However, including outpatients in the same service lines as inpatients provides a much more complete picture of operational performance. Best practice is to map the most common cases that belong to significant service lines, such as cancer or cardiology, and then let the minority fall into more generic lines such as Radiology or Lab.

Adding outpatients may seem like a significant amount of work but it is worth the effort. When you aggregate both inpatients and outpatients you can begin to evaluate the total cost of care for that particular episode. Ovarian cancer may be addressed by a combination of chemotherapy, surgery, and radiation therapy. The service line leader would need to have the details for both inpatient and outpatient activity to fully understand the services required to treat the disease.

Having all activity in the correct service line also facilitates understanding the strategic impact of certain service lines. Leaders can determine if their service line attracted the patient to the organization first, and then quantify the amount of additional services consumed by those patients over a course of time. This information provides insight into the hospital’s ability to attract, and then keep, patients over the long haul.

A complete definition of service lines that includes both inpatients and outpatients also facilitates identifying when medical practice is changing. An increasing number of surgical cases that were traditionally inpatient in nature are now done either in an ambulatory setting or treated through non-surgical medical management. These changes could have a significant impact on staffing targets in the short term and capacity and facility plans in the long term.

**Service Lines and the Planning Process**

Service lines are the most comprehensive way to understand operating results therefore they should form the basis for strategic planning, capital planning, annual budgeting and performance analyses. It is only by relying on this approach that all activities within a hospital can be appropriately
aligned and outcomes better understood. We need only look at the budget process for confirmation. In the absence of a service line approach; each department decides on their volumes independently based on intuition or historical trends. What is missing is a connection to the patients, and thus the services, the hospital is focusing on or building. If a hospital is developing a strategic plan to increase cancer services and eliminate pediatrics since the profitable cases go to the nearby university hospital the budget should reflect that change in services. In the absence of a service line approach the departments would not have adjusted their forecasts appropriately and resources would have been ineffectively allocated based on historical data.

The hospital’s planning process, both long and short term, is greatly enhanced by the dependence on effective service lines. The strategic plan is the centerpiece of the process and should generate significant sections of the capital plan and annual budget. It should also be a major source of data for understanding operating performance.

The diagram below represents the flow for planning by service line. The difference in how this model is used for each of the pieces is just the time element; strategic plans are 3 -10 years and annual budgets are once a year. Case volumes are the starting point but then drive net revenue based on payors and department budgets based on utilization.

**Strategic Planning**

The pressure on hospitals to maximize the benefits of the resources they consume is significant. A solid strategic plan forms the centerpiece of the overall strategy to achieve that goal. Service lines provide the vehicle for analyzing the impact of expected and/or perceived changes in the environment, some regulatory, some payor induced, some internally initiated.

Following are a few examples of what scenarios should be addressed or modeled in the strategic planning process:

1. Changes to patient care, such as surgical cases being done on an outpatient basis that were traditionally inpatient
2. New physician(s) or group(s) either added or subtracted and their impact on quantity, cost and profitability
Changes in service demand due to changes in demographics

Effect of changes in payor mix such as is happening now with the implementation of the Affordable Care Act

Resource requirements resulting from changes in service lines such as expanding one and decreasing or eliminating another

**Capital Planning**

It should be obvious that the strategic plan drives resource needs. Capital planning must therefore be integrated with the strategic plan to avoid investing in non-critical technologies. A clinical department may be pushing for new equipment because they are not aware of the hospital’s intention to decrease that service area, or that current practice patterns will obsolete the technology in the near future.

Following are a few examples of how the strategic plan should drive the capital planning process:

1. Attracting additional physicians or surgeons may require expanding capacity to meet the demand. The strategic plan may indicate when and if a new CT Scan or surgical laser or additional OR room is expected to become necessary.

2. Technology is changing rapidly. Evaluating the efficacy of an investment in a surgical laser requires knowing how many cases you need to justify the capital investment and if the strategic plan provides for that volume expectation.

3. Facility needs may require substantial alteration to fit the target patient population. If as noted in the strategic plan, cases are moving to outpatient from inpatient an expansion or renovation may be necessary to accommodate the growing outpatient volumes and alternative cases may need to be attracted to fill the void on inpatient volumes.

**Operational (Annual) Budgeting**

The strategic and capital plans integrated at the service line level should then be meshed with the annual operating, or budget, plan. Patient driven supplies and staffing are variable and should reflect the anticipated volumes in the strategic plan. As noted earlier, departments will budget based on trends if there is no data suggesting any changes in case volumes or mix. The annual budget should derive its variable expenses directly from the strategic plan for the following reasons:

1. Department volumes are driven by service line and can vary significantly with a major change in case types or volumes.

2. Productivity planning as part of the budget process is best analyzed at a lower level, such as the product (or chargemaster code) level. If cases are changing from orthopedics to cardiology that could stress some nursing units and result in underutilization of others. It could also result in shifts in product mix in ancillary departments that require very different supplies and time.

3. Major supply expense is driven directly by the volumes of specific case types. If demographics suggest the market catchment area is getting younger there could be a dramatic decline in orthopedic hip implants. Variable supplies should be derived directly from projections of cases by service line.

Now that the importance of service lines has been established the question becomes why don’t all hospitals employ a service line approach? Many do but are not fully committed to the point where all planning processes are integrated based on that platform. The most common rationale is the lack of data to support accountability. A system must be in place that provides the tools necessary to project assumptions and integrate the various plans. That requires a robust data store with significant capabilities for what-if modeling and plan consolidation.

**Axiom EPM’s approach to integrated planning**

Axiom EPM provides a fully integrated planning tool with robust modeling and reporting capabilities. The product is designed to support analyzing various scenarios, comparing the results and pushing projections from one plan to another, such as from the strategic plan to the annual budget.

**Deliver Trended Views of Service Line Analytics**

Axiom EPM’s built-in reporting tools empower Finance professionals to deliver insightful views of volume, cost, and
profitability measures across clinical service lines. With highly flexible and configurable formats, users are provided with actionable information. Trended views of key indicators and analytics can be presented at any dimension, including by Service Line, DRG, Physician and Payor. And with powerful ad hoc reporting capabilities, users can quickly drill from consolidated reports to the underlying details, including to patient and charge item detail levels. These interactive reports can be accessed online through the Web-client, or distributed automatically (including e-mail delivery).

**Leverage Service Line Metrics to Improve Planning Accuracy**

With Axiom EPM’s unified approach to performance management, Finance can more accurately model the impact that changes to service line activity will have across revenue and expense plans. This integrated approach helps align the strategic and operational planning functions and can support efficient use of resources by providing capacity planning data.

**cost accounting is a critical building block**

It is difficult, if not impossible, to fully support the service line approach without reasonably good cost information. Analyzing the differences in cost across cases due to physician practice patterns requires knowing the cost of one item versus another. If all pacemakers are assigned the same cost there is no way to quantify the impact of individual physician ordering preferences.

Cost accounting is also critical to the budgeting process. Building variable labor and supply budgets from volume requires knowing the cost of each item. The types and numbers of cases projected determine the volume of services to be provided and the vehicle for calculating expenses.

Axiom EPM’s unique performance management platform provides the frameworks needed to perform accurate patient-level costing but also offers the flexibility and control needed to address unique requirements when
needed. With this, hospitals and health systems effectively streamline the process of developing patient level costs with efficient and repeatable methods that ensure timely and accurate reporting of performance analytics across patient populations.

**Conclusion**

With the pressure on healthcare provider organizations to deliver and sustain healthy financial and quality outcomes, the need to rely on a service line approach to planning and analyses has never been greater. Having a reliable solution to facilitate integrated planning and analytics is critical to success. High-performing organizations are leveraging new technologies and implementing efficient and repeatable processes that can balance accuracy with efficiency so information is more timely and accurate than ever before. While it may seem pretty daunting organizations should choose a full service line approach and begin working to put it into practice today.

**About Author**

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David leads Axiom EPM’s product and business development strategies for the healthcare industry, including hospitals, health plans and ACOs. David has both clinical and financial expertise, positioning him well to provide thought leadership to our healthcare clients.

Prior to joining Axiom, David has held leadership roles at Loyola University of Chicago, Transition Systems Inc./Eclipsys and, most recently, Deloitte Consulting LLP. His areas of expertise include budgeting, costing, service line analyses and productivity.