AT A GLANCE

> The economies resulting from a geographic expansion of a health system’s clinical service line (CSL) are largely determined by performance and management characteristics of each of the service line’s sites of services.

> A CSL typically is led by a dyadic leadership team composed of a clinical leader and an administrative leader, each of whom plays a key role in ensuring the success of any CSL geographic expansion effort.

> A useful metric is the CSL’s contribution margin divided by the total physician work relative-value units produced by the CSL’s physicians; tracked over time, this metric can be valuable to the physician leader, in particular, for understanding the operating economies of the CSL.

Clinical Service Line Strategy: Managing the Risks of Geographic Expansion

Effective geographic expansion of a health system’s clinical service line (CSL) requires a collaborative leadership approach, in which a physician and an administrative leader share responsibility for tracking economic performance and guiding strategy.

A 2011 survey of leaders of large U.S. health systems found that 85 percent were pursuing or would pursue clinical service line (CSL) strategies. But that simple finding belies a complex reality: Health systems are employing a range of models and methods to realize their CSL strategic goals. Amid this diversity, however, a common question arises for health systems that also are interested in expanding the reach of their CSLs: What are the key considerations that must be addressed to ensure that geographic expansion will be economically and financially successful?

Although definitions vary, a CSL can generally be defined as “an organized constellation of clinical services focused on a clustering of diagnoses related to specific organ systems, system diseases, and medical conditions, both acute and chronic.”

In essence, for most health systems, a CSL strategy is aimed at effectively and efficiently delivering services across multiple related locations, with a focus on ensuring those services represent a coordinated, patient-centered...
experience underpinned by accepted, evidence-based clinical best practices. Effective implementation of a CSL strategy should ultimately enable the health system to better manage overall performance, quality, operations, the patient experience, financial returns, and total costs of care.

**CSL Management**

The leadership structure of the CSL is a critical success factor. A CSL typically is managed under a dyadic leadership model, in which a physician leader (a practitioner from the particular CSL) and an administrative partner work together to oversee the management of the clinical services across sites. Participating sites may have a local dyad, in which a local physician leader and a local administrative leader collaborate to oversee services provided locally, with the CSL supported at each site by site-specific staff and operations teams under a matrix management design.

Matrix management models are required because CSLs operate across multiple sites within a given health system (inpatient and outpatient service sites). A reality of CSL management is CSL leaders rely upon staff and services housed at various sites to deliver on the promises presented to various markets—e.g., a high-quality, patient-centered experience marked by well-coordinated services delivered from multiple sites over time.

The lead dyad typically is charged with ensuring the CSL meets specified high standards of excellence with respect to the following:

- Access to services
- Quality of care and the patient experience
- Allocation of professional staff and related direct support services
- Productivity
- Financial performance of the direct cost structure
- Recruiting of professional staff
- Peer review
- Total costs of care delivered
- Design and execution of strategy across sites

The clinical and administrative leaders each play a key role in ensuring the success of any CSL geographic expansion effort—which, again, is a principal goal of any CSL strategy.

**Geographic Expansion of CSLs**

In essence, geographic expansion of services involves the extension of services from one or more referral centers (often hospitals that house secondary and tertiary programs, providers, and services of the CSL). The menu of tactics applied to geographic expansion of CSLs typically includes:

- Partnerships with community-based hospitals (independent or system affiliates)
- Partnerships with community-based independent medical clinics
- Housing of the CSL in freestanding, specialized ambulatory facilities owned by its health system sponsor
- Geographic outreach services supplied by traveling specialists

The next steps in pursuing such a strategy are contingent on two key preliminary considerations: the specific model and method used in establishing the CSL, and the CSL’s operating economics from both performance and management standpoints.

Typically, affiliated geographic sites will provide subsets of services that fall within the overall service line, and these sites will be variously equipped and staffed. Operating economics and accounted financial performance will also vary from site to site according to the site-specific operating revenues, cost structures, and capital investment return rates delivered per site.

It is important to remember that the overall success of the CSL is created by the sum of its parts. The financial performance of a specific site can, and should, vary from that of one or all of the other CSL components. Components may, on their own, produce substandard or even negative financial performance based on site-specific service designs, yet when they are considered together with all other components, they can
Diseconomies of Scale

Simply put, the economics and financial performance related to the geographic expansion and the “scaling up” of a CSL will vary based on the clinical and business model designs and the market conditions and dynamics. Ultimately, this reality points to a fundamental risk that CSLs face in applying the various models and methods for geographic expansion: In some cases, the application of these models and methods can create diseconomies of scale, an economic concept referring to a situation in which economies of scale no longer function for an organization (see exhibit at right). Rather than experiencing continuing decreasing costs per increase in output, organizations experience an increase in marginal cost when output is increased. This concept is fundamental in the design and execution of CSL strategies and is the focus of the balance of this article.

Geographic expansion of CSLs can be achieved by applying one, several, or all of the tactical models described above. The choice of models typically is driven by clinical model determinations by site (with making such determinations being a principal role for the physician leader of the dyad). With almost any application of the tactical models available, CSL revenue grows, as does aggregate contribution margin. A focus on these financial metrics alone does not, however, tell the whole story. What often is missing is the analysis of returns on incremental investments of high-cost personnel (including physicians) and required capital assets.

The design and application of the clinical models per site dictate operating economic performance and, ultimately, financial performance of the CSL. Consequently, a CSL can be scaled up economically (where incremental investments produce improving financial performance overall) or diseconomically (where returns on incremental investments in the strategy produce diminishing returns). With that latter state, eventually those making strategic investment decisions for a healthcare organization must opt for investments in alternative strategies. CSL dyad leadership teams must understand how their decisions regarding geographic-expansion tactical designs bear upon the CSL’s overall operating economics and financial performance.

How to Test the Economies of CSL Growth Strategies: A Guide for Physician Leaders

A simple, but reliable approach that can help the physician leaders in a CSL leadership dyad, in particular, understand the operating economics of a CSL at any given time (and over time) involves examining and tracking a key metric

Diseconomies of scale occur when the average cost per unit of input begins to increase to a point where returns on incremental investments begin to decrease. “Q” represents the point where production of diseconomies of scale begins.
An improvement in cardiovascular service line contribution margins per physician work relative-value units (wRVUs) indicates economies have improved from time period A to time period B.

expressed as contribution margin (CM) divided by the physician work relative-value units (wRVUs) produced (i.e., the work effort invested by the specialty physicians within the CSL):

\[
\text{CSL CM} = \frac{\text{Aggregate Physician wRVU}}{\text{CSL economic performance at a point in time}}
\]

Simply put, this metric, which describes the total accounted contribution margin per average wRVU produced by a group of specialty physicians, can serve as the clinical services driver of a CSL strategy. An increase in this metric over time, for example, indicates economies are improving under the strategy (see exhibit above). Conversely, a decline in this metric over time indicates worsening economies. The dyadic leaders can use this method of evaluation to determine whether the CSL geographic expansion strategy is scaling up economically or diseconomically and, if the latter, the extent to which future investments in the strategy are acceptable in light of the health system’s alternative investment opportunities.

**Case Example: Cardiovascular Service Line**

To illustrate these points, we offer a case example of a possible CSL model involving cardiovascular services. For purposes of discussion, let’s assume that the CSL is operated by a hypothetical health system, which we will refer to as Integrated Health System (IHS). Let’s also assume that all physician specialists involved in the CSL are employed by the sponsoring health system—a common characteristic of CSLs operated by highly integrated health systems.\(^b\)

The cardiovascular CSL operated by IHS is a large one, with initial annual operating revenues of $123.6 million, beginning with a base of 20 FTE cardiologists producing 200,000 wRVUs annually. In the first year, the direct operating expense structure of this model produced a contribution margin per wRVU of $179, as shown in the exhibit on page 5.

Under this CSL model, to achieve these base results, the cardiologists perform outreach to four community hospitals located up to 120 miles from the main referral hospital. Cardiologists travel to staff these sites, delivering one full day of coverage per site weekly. Each visiting cardiologist brings a nurse to assist in the clinical activities of the day. The total annual direct costs of this strategy amount to $1.7 million annually. Visiting cardiologists do consultation work only. Referrals are made to the main referral site for complex imaging diagnostics, interventional therapeutics, surgical procedures, and related inpatient hospital services.

**Analysis of CSL geographic expansion options.**

Financial performance of the base case described above is expected to decline due to the following factors:

- Downward pressures on volumes and per-unit payments from all payers (including governmental payers)
- Growing competition for cardiovascular services by local and regional competitors
- Upward pressures on operating costs (especially labor costs) and a need to recapitalize the CSL’s clinical technologies in the referral center

\(^b\) A model in which all CSL physicians are employees of the sponsoring health system is best for illustrative purposes because all information regarding the productivity of the CSL’s physicians (e.g., wRVU productivity metric) is available to the health system under such a model. These conditions may be produced under provider-contracted models as well (e.g., clinical comanagement arrangements).
With this base case (which is a no-growth strategy), three effects on future financial performance of the CSL are expected:

> Downward trend in annual aggregate revenues
> Downward trend in annual aggregate contribution margin
> Downward trend in returns on invested capital

The four clinical service sites at the community hospitals also are demanding changes in the service model, which, if implemented, would improve the financial performance of the four hospital partners:

> One site wants a 50:50 joint venture partnership in a diagnostic cath lab (50:50 partnership with IHS’s CSL) and cardiologist time amounting to two FTEs provided at IHS’s expense, with professional fees only allocable to the health system and pro-rata distribution of excess margin performance on the cath lab.
> Two sites are demanding 50 percent increases in available cardiologist coverage and ownership of on-site cardio-diagnostic imaging services.
> The fourth site is demanding an increase of cardiologist coverage to one FTE (at the expense of IHS’s referral center).

If IHS’s CSL refuses to meet these demands, it risks losing its relationship with the community partners to a competitor.

Key considerations for the CSL leadership team.
The CSL’s dyadic leadership team requires an analytical framework for deciding how to proceed in this situation. The framework consists of an analysis of the likely outcomes of meeting the demands of the community hospital partners (assuming that not meeting the demands might result in the loss of the partnerships, as indicated previously). In other words, if all partners’ demands are met, will operating economics and financial performance improve or decline, and if the latter, will the decline be viewed as “affordable” by IHS leadership?

In this case, based on the leaders’ analysis, meeting the demands of the existing four partnership sites cause the following results, which also are illustrated in the exhibit on page 6.

First, there would be real increases in total aggregate revenues and contribution margin earned on the CSL (even with the proposed diagnostic cath lab partnership).

Second, the contribution margin earned per wRVU (physician unit of effort) produced would decline because of the need for an expanded number of cardiologists to serve the strategy.

Third, the 50:50 cath-lab joint venture and the need to invest in the main referral site under the base case would cause returns on incremental strategic capital investments to decline for the CSL.

Key questions of interest to the CSL’s physician leader, in particular, would pertain to the design of the CSL strategy and the related clinical services model. With the collaborative support of the administrative leader, the physician leader would contemplate under what design that CSL might:

> Retain valuable referral volume and a strategic service line performance
> Productively (economically) add incremental physicians
> Maintain returns on total costs of invested capital at acceptable levels to avert the need for
CASE EXAMPLE: EFFECTS OF MEETING THE DEMANDS OF THE EXISTING 4 PARTNERSHIP SITES

System Net Revenues (dollars in millions)

<table>
<thead>
<tr>
<th>Year</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Base</td>
<td>$125</td>
</tr>
<tr>
<td>Year 1</td>
<td>$150</td>
</tr>
<tr>
<td>Year 2</td>
<td>$175</td>
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<tr>
<td>Year 3</td>
<td>$200</td>
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<tr>
<td>Year 4</td>
<td>$225</td>
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</tbody>
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System Contribution Margin per Work Relative-Value Unit

<table>
<thead>
<tr>
<th>Year</th>
<th>Value</th>
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<tbody>
<tr>
<td>Base</td>
<td>$200</td>
</tr>
<tr>
<td>Year 1</td>
<td>$175</td>
</tr>
<tr>
<td>Year 2</td>
<td>$150</td>
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<tr>
<td>Year 3</td>
<td>$125</td>
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<tr>
<td>Year 4</td>
<td>$100</td>
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</tbody>
</table>

Return on Invested Capital

<table>
<thead>
<tr>
<th>Year</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Base</td>
<td>15%</td>
</tr>
<tr>
<td>Year 1</td>
<td>10%</td>
</tr>
<tr>
<td>Year 2</td>
<td>5%</td>
</tr>
<tr>
<td>Year 3</td>
<td>0%</td>
</tr>
<tr>
<td>Year 4</td>
<td>-5%</td>
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</tbody>
</table>

Note: This exhibit portrays circumstances in which a clinical-service-line strategy is producing increasing aggregate operating revenues but deteriorating operational economies and returns on invested capital.

Objectives of the revised strategic plan for our cardiovascular service line, based on hypothetical answers to these questions, are shown in the exhibit on page 7. The plan is driven largely from changes in the care models, all aimed at maintaining high quality while improving operating economies as the CSL continues to scale up geographically.

Favorable economies of scale for a revised CSL strategy include:

- Growth in allocable operating revenues
- Growth in allocable CM
- Acceptable levels of CM per wRVU produced by a growing number of employed (or contracted) cardiologists assigned to the CSL
- Returns on invested capital that are acceptable to the target hurdle rates established by the health system

Here, two questions command the attention of the CSL leaders—and the senior finance leader for IHS, in particular:

- What is the target annual CM performance for each year of a revised plan?
- What is the target annual return rate on invested capital for each year of a revised plan?

Implications for Scaling Up of a CSL

Revenue and CM growth, in nominal terms, are two important goals in a strategic plan of a CSL, but they are not the only goals of importance. The points outlined here have the following implications for health systems contemplating a strategy to geographically extend the reach of CSLs.

Depending on the strategic pathway taken, CSLs can be scaled up economically or diseconomically.

Diseconomies of scale are created by employing tactics that cause marginal costs to increase with incremental growth. Consequently each growth strategy carries its own “economic signature.”

An important early indicator of the effects of a strategy on operating economics is revenue and/or contribution margin earned per wRVU produced by the physician group that drives the CSL. It is important to remember that there are times during a specific
phase of a strategy cycle when such results will occur. The questions are for how long, at what levels, and at what costs.

The financial return derived from the investment of each incremental dollar in a strategy is an often-underestimated indicator of the economics of a CSL growth strategy. Remember, revenues and CM can grow nominally while such returns on invested capital (typically, investments in capital assets) decrease.

When designing a geographic growth strategy for a CSL, the strategy for the main referral center is rarely left untouched. The dyad leadership team should be mindful that, if the geographic growth strategy is successful, increasing volumes sent to the main referral center will need to be managed to ensure effective and efficient resource allocations and related investments. A geographic expansion strategy can cause significant changes in the scope and emphasis of clinical services at a referral site.

To ensure the long-term success of the CSL strategy, the dyad leadership team, particularly the physician leader, must stay on top of clinical care innovations. The team should be prepared for the potentially disruptive effects of such innovations, which may require adopting new care model configurations, making additional capital investments, promoting new CSL skills and competencies among CSL clinicians, and managing effects on payments and on strategic partnerships within the CSL model.

Perhaps the most important lesson we can share—and possibly the most useful one for a CSL’s physician leaders, in particular—is that ensuring the economic success of a CSL requires an understanding of four interconnected principles:

- Clinical models drive operating economics of a CSL.
- Operating economics drive financial performance of a CSL.
- Financial performance is converted to financial reporting as a function of the accounting methods applied.
- Leadership and management all too often draw conclusions regarding the need for change in strategy from accounted financial reporting, when the most useful information is available from operating economics data.

Physician leaders in a CSL leadership dyad may not be experts in finance and accounting, but they can, with some preparation, learn how the design of clinical models within a CSL translates to operating economies and how, by applying a few strategy management tools (as described here),

<table>
<thead>
<tr>
<th>Principal Goals</th>
<th>1. Retain and grow share in existing strategic markets.</th>
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<tbody>
<tr>
<td></td>
<td>2. Identify and develop new high-value markets.</td>
</tr>
<tr>
<td></td>
<td>3. Improve overall financial performance of the clinical service line and maintain/improve productivity of the overall model applied.</td>
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</tbody>
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<table>
<thead>
<tr>
<th>Tactical Plan</th>
<th>1. Transition main referral center’s case mix to higher levels of activity; retain lower-activity cases within regional partnership models.</th>
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<td>2. Create inter-professional team care models at all sites; apply physician capacity to higher levels of patient care.</td>
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<td>3. Shift patient care to ambulatory centers and regional partnerships where appropriate. Improve productivity of main referral site.</td>
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<td></td>
<td>4. Develop telehealth networking to regional sites, especially where physician consultations can be performed by subspecialists from main site.</td>
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<tr>
<td></td>
<td>5. Improve access, especially for initial referral consultations for referring independent physicians.</td>
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<td></td>
<td>6. Open new markets with high-value potential.</td>
</tr>
<tr>
<td></td>
<td>7. Evaluate total costs of care and improve performance for chronic conditions, beginning with congestive heart failure.</td>
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</tbody>
</table>
they can understand the likely effects of growth strategies on operating economics and, ultimately, on the CSL’s financial performance.

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