Assessing **Physician** Network Needs for Population Health

Estimating Clinician Supply and Demand in a Changing Market
How many physicians do you need in your network?
The answer is **not as simple as it seems.**

Health systems and medical groups preparing for population health management need to consider how this strategic shift will affect demand for physician services. They must develop a comprehensive assessment of current and future physician needs that considers questions such as:

- Do we have enough primary care providers to meet emerging imperatives for improved care management and patient access?
- As utilization patterns shift, will we have more specialists than we can financially support?

**But physician manpower planning takes** far more than a simple matching of “number of patients” to “number of physicians.”
Physician-to-population ratios do exist, but they give an incomplete picture.

Many commonly used models, such as the ratios developed by the Graduate Medical Education National Advisory Committee (GMENAC), are based on the assumptions of a fee-for-service environment. They do not account for how utilization and demand for physician services may change with greater reimbursement risk.

Demand forecasts based on managed care utilization may be more applicable under accountable care. However, these ratios are also imperfect. Developed during the 1990s, they do not account for care delivery innovations that can impact physician productivity or differences between traditional HMO patients and the broader population that may affect utilization.

But even if more reliable ratios existed, they would offer only a high-level starting point. They are not perfect predictors of physician need within a specific community.

Instead, health system leaders must carefully consider a range of unique market and organizational factors that can significantly influence the demand for and supply of physicians.
Key Factors Influencing Physician Supply and Demand

PATIENT CHARACTERISTICS
• Clinical and demographic profile
• Location
• Payer coverage

PHYSICIAN CHARACTERISTICS
• Demographic profile (especially age)
• Location
• Specialty expertise

SYSTEM STRATEGY
• Market share growth
• Population management approach
• Use of non-physician providers
This briefing explores how these factors affect physician network planning in three areas:
You’ll also find a list of questions that can help you assess the unique impact of these factors on your own organization. Although the wide range of variables to consider may make physician needs assessment appear daunting at first, it’s important to recognize that you do not need to arrive at precise numerical projections to take meaningful action.

Instead, the goal should be to develop a directionally correct sense of provider need—a rough understanding of trends within different specialty areas that can guide recruitment and hiring, now and into the future.
Population management—with its focus on improved prevention, coordination, and cost control—will put increased demand on primary care services. An aging population will also likely increase the need for primary care, as will efforts to expand insurance coverage that bring more patients into the system.

As a result, most health care leaders expect a significant shortage of primary care physicians in the years ahead. These projections have many health systems scrambling to shore up the PCP base.

But it’s important to realize that increased demand for primary care services does not correlate directly to increased demand for primary care physicians.

We’ve seen some health systems meet the growing demand for primary care by aggressively redesigning care delivery, building a robust infrastructure around the PCP to reduce the impact on individual physicians. The best care managers are able to increase PCP panel size by more than 70%.

21.7 hours
Estimated PCP time required per day to meet clinical guidelines for a 2,500-patient panel
Projected Panel Size per PCP²

<table>
<thead>
<tr>
<th>Model</th>
<th>Initial Panel Size</th>
<th>Projected Panel Size</th>
<th>Increase</th>
</tr>
</thead>
<tbody>
<tr>
<td>Traditional PCP</td>
<td>1,950</td>
<td>2,100</td>
<td></td>
</tr>
<tr>
<td>Basic Medical Home</td>
<td></td>
<td>3,700</td>
<td>76%</td>
</tr>
<tr>
<td>Population Health Management</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

THREE KEY VARIABLES
- Practice-level transformation
- Systemization and virtual visit substitution
- Activating disconnected populations

To see these results, you need to invest heavily in new models that emphasize an expanded care team, e-visits, and nontraditional sites of care. You also need to target these resources more narrowly to patients who are most at risk.
Health systems can also deploy employed physicians themselves more strategically to enhance productivity and patient access.

For example, Meredith Medical Group[^3] asked its PCPs to provide eight hours of evening and weekend coverage per month. These hours replace—rather than add to—hours worked during periods of lower demand during the week.

**Flexing Physician Hours to Improve Patient Access**

**Traditional Schedule**

<table>
<thead>
<tr>
<th>Sun</th>
<th>Mon</th>
<th>Tues</th>
<th>Weds</th>
<th>Thurs</th>
<th>Fri</th>
<th>Sat</th>
</tr>
</thead>
<tbody>
<tr>
<td>Closed</td>
<td>9am–5pm</td>
<td>9am–5pm</td>
<td>9am–5pm</td>
<td>9am–5pm</td>
<td>9am–5pm</td>
<td>Closed</td>
</tr>
</tbody>
</table>

**Sample New Schedule**

<table>
<thead>
<tr>
<th>Sun</th>
<th>Mon</th>
<th>Tues</th>
<th>Weds</th>
<th>Thurs</th>
<th>Fri</th>
<th>Sat</th>
</tr>
</thead>
<tbody>
<tr>
<td>Closed</td>
<td>9am–5pm</td>
<td>9am–5pm</td>
<td>9am–5pm</td>
<td>9am–5pm</td>
<td>9am–3pm</td>
<td>10am–noon</td>
</tr>
</tbody>
</table>

**Making Off-Hours Work**

- **Increased efficiency:** Replacing volume hours with highly demanded hours improves fill rates.
- **Improved payer mix:** 80%–85% of Time-Starved Family Hours reserved for commercial patients.
- **Physician-friendly:** Hours shifted, not added, to support physician buy-in.

By making this shift, Meredith increased the number of visits accommodated by its primary care clinics by 110,000 in four months, without adding additional physicians or care team members.
A truly effective primary care network will likely mean demand destruction for high-end specialty care services. One estimate found that demand for specialists was 30% lower in a managed care environment than in a fee-for-service environment.\(^4\)

**But even in a tightly** managed situation, utilization reduction is unlikely to occur across the board. Predicting the actual impact on demand for physicians within a particular specialty area is impossible without knowing more about the health system’s unique plans for population management and growth.

There are three strategic factors that health systems must consider to understand the future of specialty care demand.

- Where are our greatest opportunities for avoidable cost reduction?
- How much will we be able to grow volumes through stronger referrals?
- How much might we backfill lost demand through other growth, both strategic and reactive?
Where are our greatest opportunities for avoidable cost reduction?

The specific clinical needs of a system’s patient population will determine where utilization reduction actually occurs. Health system leaders should have at least a rough understanding of what population management initiatives they intend to pursue to project the impact on discrete specialties.

Most health systems have significant opportunity for avoidable cost savings within inpatient medical admissions, outpatient surgery, and prescription drugs, according to the Advisory Board’s Crimson Population Risk Management (CPRM) analytics initiative.

### CPRM Top Ten Areas of Opportunity to Capture Avoidable Cost

*Difference Between Actual Spend PMPM and Well-Managed Benchmark, 2012*

<table>
<thead>
<tr>
<th>Service</th>
<th>Avoidable Cost Difference PMPM</th>
</tr>
</thead>
<tbody>
<tr>
<td>Inpatient Medical Admissions</td>
<td>$23.98</td>
</tr>
<tr>
<td>Outpatient Surgery</td>
<td>$21.57</td>
</tr>
<tr>
<td>Prescription Drugs</td>
<td>$18.20</td>
</tr>
<tr>
<td>Outpatient Drugs</td>
<td>$7.02</td>
</tr>
<tr>
<td>Emergency Room</td>
<td>$6.37</td>
</tr>
<tr>
<td>Outpatient Pathology/Lab</td>
<td>$6.21</td>
</tr>
<tr>
<td>Physician Office Visits</td>
<td>$6.09</td>
</tr>
<tr>
<td>Inpatient Surgical Admissions</td>
<td>$5.50</td>
</tr>
<tr>
<td>Outpatient Clinic</td>
<td>$4.87</td>
</tr>
<tr>
<td>Outpatient MRI</td>
<td>$3.93</td>
</tr>
</tbody>
</table>

And within the category of preventable inpatient admissions, certain conditions spike nationally as good opportunities for intervention. Many of these conditions will present opportunities at the local level as well, offering clues to what specialties may see declining utilization in a population management environment.
That said, you should not rely on national data alone to sculpt your population management strategy. Rather, you’ll need to assess the unique characteristics of your own population to identify the biggest cost-reduction opportunities. The best way to do this is to look at avoidable cost benchmarks: comparing the system’s own rates of utilization and spending for specific health care services with rates in comparable well-managed populations.

How much will we be able to grow volumes through stronger referrals?

Referrals management is a high-potential driver of early cost savings under population management. With business capture a high priority in the fee-for-service environment as well, many physician groups are already taking steps to strengthen in-network referrals.
For example, Nittany Physicians\textsuperscript{6} saw out-of-network referrals drop by 10 percentage points simply by implementing a centralized scheduling system that prioritized appointments with in-network specialists.

Efforts like this—as well as other steps that systems can take to make network specialists more attractive to referring physicians—can offset projected demand destruction for specialty care.

Improved Scheduling Process Boosts In-Network Referrals

<table>
<thead>
<tr>
<th>Physician enters referral into system</th>
<th>Centralized Scheduling Office</th>
</tr>
</thead>
<tbody>
<tr>
<td>Patient calls central scheduling line</td>
<td>• Prioritize in-network specialists</td>
</tr>
<tr>
<td></td>
<td>• Follow up to ensure appointment kept, reschedule as needed</td>
</tr>
</tbody>
</table>

PERCENTAGE OF REFERRALS LEAVING NETWORK

<table>
<thead>
<tr>
<th>Before Centralized Scheduling</th>
<th>After Centralized Scheduling</th>
</tr>
</thead>
<tbody>
<tr>
<td>30%</td>
<td>20%</td>
</tr>
</tbody>
</table>

50\% estimated savings in Massachusetts Alternative Quality Contract\textsuperscript{7} attributed to referral-shifting to lower-cost providers.

How much might we backfill lost demand through other growth, both strategic and reactive?

Beyond improved referrals, you can increase demand for both primary and specialty care by acquiring new market share through geographic expansion, acquisition, or payer contracting.
Coverage expansion and population aging may also mean more people seeking services. For example, one 2013 study estimated that based on population growth, changing demographics, and increased insurance coverage (and not considering the impact of better managed care), demand for many specialties will rise significantly by 2025.

However, actual demand may vary widely depending on local conditions. For example, demand for cardiologists will rise 51% in Nevada but only 5% in West Virginia, according to study projections.

Network leaders should consult with system planners on organization-specific growth expectations in assessing provider need.

**Specialties with Highest Projected Growth Due to Population Factors, 2013–2025**

<table>
<thead>
<tr>
<th>SPECIALTY AREA</th>
<th>ESTIMATED GROWTH</th>
</tr>
</thead>
<tbody>
<tr>
<td>Vascular Surgery</td>
<td>31%</td>
</tr>
<tr>
<td>Cardiology</td>
<td>20%</td>
</tr>
<tr>
<td>Neurosurgery</td>
<td>18%</td>
</tr>
<tr>
<td>Radiology</td>
<td>18%</td>
</tr>
<tr>
<td>General Surgery</td>
<td>18%</td>
</tr>
</tbody>
</table>

**SEARCH: Strengthening the Medical Group Referral Chain**
on advisory.com for more on referrals management strategy.
Supply of available providers

Even in a fee-for-service environment, individual differences between providers can make it impossible to apply physician-to-population ratios without additional analysis.

In assessing the existing provider supply—a crucial first step before determining how many more (or fewer) providers may be needed to meet demand projections—organizations must consider a number of factors that do not show up in a simple head count. (Networks that use advanced non-physician providers as independent caregivers, such as nurse practitioners and physician assistants, should also incorporate those individuals into this assessment.)

**Service scope:** Just because two providers belong to the same specialty does not mean they provide the same care. For example, one may specialize in a certain type of procedure while another provides more general care.

**Demographics, especially age:** A long-range hiring plan depends on understanding provider career paths. Older providers may be preparing to ramp down or retire from practice. Younger providers may become more productive over time—or may want to reduce their hours after they start a family.
**Location:** Practice locations may not match patient distribution geographically, creating areas that are under- or over-served. Networks must understand how far patients are willing to drive for care, which may differ for primary and specialty care services.

**Productivity:** Even within the same practice, providers may be more or less productive than their peers. One medical group projected that it could increase primary care capacity by 5% simply by setting baseline standards across practices for patient volumes and physician availability.

To predict how these nuanced distinctions will impact provider supply, network leaders must develop strong ties with the provider community, getting to know physicians and other advanced practitioners on an individual and in-depth basis.
As a final example of how significantly market and organizational factors can influence recruitment priorities, consider the case study of Clearview Medical Center. Based on physician-to-population ratios and patient and physician interviews, Clearview felt it had enough cardiologists to meet patient demand. And with the health system actively seeking shared-savings contracts, planners feared that the 19 cardiologists currently in Clearview’s network would, in fact, be too many if the system doubled down on efforts to better manage congestive heart failure and other chronic conditions. But a deeper analysis painted a different picture, indicating that demand for cardiology services would likely grow in coming years while raising previously unseen threats to physician supply. This exercise led health system planners to change their assessment of need, identifying cardiology as a target for near-term recruitment and growth.

It’s important to note that Clearview’s planners focused their analysis on anticipating trends in cardiology supply and demand, rather than on trying to formulate precise numerical projections. This focus allowed them to develop a directional sense of cardiology need to guide recruitment strategy, without becoming overwhelmed by data.

Assessing Physician Supply and Demand
Assessing the Need for Cardiology Recruitment

<table>
<thead>
<tr>
<th>ORGANIZATIONAL FACTOR</th>
<th>IMPACT ON NEED</th>
</tr>
</thead>
<tbody>
<tr>
<td>Five of 19 cardiologists over 55 years of age, approaching retirement</td>
<td>↑</td>
</tr>
<tr>
<td>Local population older than national average, with growing prevalence of chronic disease</td>
<td>↑</td>
</tr>
<tr>
<td>No cardiologist maintains experience in electrophysiology subspecialty</td>
<td>↑</td>
</tr>
<tr>
<td>Cardiologists concentrated on eastern side of city, while population growing on western side</td>
<td>↑</td>
</tr>
<tr>
<td>Referral volumes from network PCPs already high, limiting opportunities for additional growth</td>
<td>←→</td>
</tr>
<tr>
<td>Large opportunity to better manage CHF at primary care, reduce avoidable admissions</td>
<td>↓</td>
</tr>
</tbody>
</table>

Priority for recruitment **HIGH**
Physician Needs Assessment Diagnostic Questionnaire

The diagnostic questionnaire on the following pages will aid health systems in assessing their own physician manpower needs as they evolve toward population management. You can use a number of information sources to answer these questions, including those on the right.
## Sources for Assessing Physician Need

<table>
<thead>
<tr>
<th>INFORMATION TYPE</th>
<th>SOURCE EXAMPLES</th>
</tr>
</thead>
</table>
| Population demographics (age, location, payer coverage) | • Census Bureau  
• Patient surveys  
• Demographics data vendors (e.g., Nielsen, Applied Geographic Solutions, IXI)  
• Health care-specific analytic tools (e.g., The Advisory Board Company, Truven Health Analytics) |
| Physician demographics (age, gender, retirement plans) | • Internal intelligence developed by health system staff  
• Proprietary physician databases (e.g., American Medical Association, Health Market Science, IMS Health)  
• National Ambulatory Medical Care Survey  
• National Plan & Provider Enumeration System (NPI registry)  
• State-specific physician rosters  
• Health care-specific analytic tools (e.g., The Advisory Board Company’s Crimson Market Advantage) |
| Utilization and cost data | • Centers for Disease Control and Prevention surveys  
• Claims data analysis (Medicare, Medicaid, or commercial claims)  
• Internal hospital or practice billing systems  
• Estimation and market sizing tools (e.g. The Advisory Board Company’s Market Estimators, Truven Health Analytics) |
| Physician productivity and access | • Practice management systems  
• Proprietary benchmarks (e.g., The Advisory Board Company’s Crimson Medical Group Advantage, Medical Group Management Association)  
• Interviews with physicians and patients to identify availability problems |
| Referral patterns/leakage | • Health care-specific analytic tools (e.g., The Advisory Board Company’s Crimson Market Advantage)  
• Claims data (e.g., Health Market Science, IMS Health) |
**Physician Needs Assessment**

**Diagnostic Questionnaire**

**Patient Characteristics**

- What is the demographic profile of our patient base? Across the next 5 to 10 years, do we expect demand to increase due to population aging or growth?

- How many new patients do we expect to see enter the system due to insurance coverage expansion who might not previously have sought physician services?

- What is the risk profile of our patient base? Do we have a large number of high- or rising-risk patients who are not currently receiving advanced primary care?

- What are the greatest opportunities for reducing avoidable utilization among our patient population? How large are those opportunities, assessing current management of those patients against expectations for tightly managed care?

- Where are our patients located? How far are they willing to drive for primary care? For specialty care?

- What is our payer mix? In the long term, how many patients do we expect to have covered under contracts that reward for population management versus contracts that remain fee-for-service?

**System Strategy**

- How heavily invested are we in primary care redesign? Do we plan to maximize use of the care team and invest in other models for increasing panel size, or will rising demand for primary care services need to be absorbed by PCPs directly?

- How tightly managed is our referrals process? Do we have high referral leakage out of the network? How might that change in coming years? Do we expect to attract additional referrals from outside the network on the basis of strong cost/quality performance by our physicians?
• What other system growth plans might increase the number of patients we serve? Is the system actively trying to move into new markets? Seeking new contracts with employers or payers that might shift volume from competitors? Investing in non-traditional access points such as retail clinics that might capture unaffiliated patients?

• What is our attitude toward use of advanced providers (e.g., nurse practitioners or physician assistants)? How extensively (legally or culturally) can we deploy them in place of physicians?

Provider Characteristics

• What is the demographic profile of our current provider base (including physicians and other advanced providers as applicable)? What is their age and gender breakdown? How many are over 55? What are their professional plans across the next 5 to 10 years?

• What sort of services do our providers offer? Are there significant differences between the services provided by peers within a specific specialty? Between the services provided by advanced providers within different primary care practices?

• Where are our providers located? Is provider geography well-matched to patient location, or do we have areas of over- or under-supply?

• Where do we have problems with access or long appointment wait times? Are there clinical areas that physicians or patients feel are under-resourced?

• How productive are our physicians? Could we gain increased physician capacity by establishing minimum volume expectations, shifting practice hours, or other such strategies?
For Additional Support

The Advisory Board Company offers a number of additional resources that can aid health systems and medical groups in assessing physician network needs.

Physician Network Planning Services

Consulting and Management
Offers hands-on support for medical staff and physician network planning through onsite interviews, data analysis, and other steps needed to develop a comprehensive physician needs assessment. Related services include assessing fair market value to guide financial arrangements with physicians and working with hospitals to create a sound physician recruitment policy.

For more information, please contact Randy Gott at gottr@advisory.com or 615-385-2126.

advisory.com/consulting
Related Research and Data

**Care Transformation Center**
Part of the Health Care Advisory Board program, provides expert guidance to hospitals and health systems managing the transition to population accountability, including a large and growing body of research on best practices in primary care redesign and avoidable cost reduction.

[advisory.com/caretransformationcenter](advisory.com/caretransformationcenter)

**Crimson Population Risk Management**
Performance technology initiative that analyzes claims data to predict future utilization based on patient risk, helping hospitals manage total cost and quality for defined populations.

[advisory.com/crimson](advisory.com/crimson)

**Crimson Market Advantage**
Performance technology initiative that helps hospitals and health systems understand physician referring and performing patterns, the drivers of referral losses and gains, and opportunities for service line growth.

[advisory.com/crimson](advisory.com/crimson)
LEGAL CAVEAT
The Advisory Board Company has made efforts to verify the accuracy of the information it provides to members. This report relies on data obtained from many sources, however, and The Advisory Board Company cannot guarantee the accuracy of the information provided or any analysis based thereon. In addition, The Advisory Board Company is not in the business of giving legal, medical, accounting, or other professional advice, and its reports should not be construed as professional advice. In particular, members should not rely on any legal commentary in this report as a basis for action, or assume that any tactics described herein would be permitted by applicable law or appropriate for a given member’s situation. Members are advised to consult with appropriate professionals concerning legal, medical, tax, or accounting issues, before implementing any of these tactics. Neither The Advisory Board Company nor its officers, directors, trustees, employees and agents shall be liable for any claims, liabilities, or expenses relating to (a) any errors or omissions in this report, whether caused by The Advisory Board Company or any of its employees or agents, or sources or other third parties, (b) any recommendation or graded ranking by The Advisory Board Company, or (c) failure of member and its employees and agents to abide by the terms set forth herein.
Footnotes:


2 Health Care Advisory Board financial modeling based on risk-segmented patient population.

3 Pseudonym.


5 Agency for Healthcare Research and Quality.

6 Pseudonym.


9 Pseudonym.