Health System Strategy Perspective:

The Business Case For Optimizing Your Specialist Referral Value Chain

WHITE PAPER AND FINANCIAL MODEL

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Executive Summary

Health systems have invested significant resources in building their provider networks and aligning around clinical service lines to drive growth and deliver value-based care strategies. Despite these efforts, however, many organizations still face basic logistical challenges in navigating patients through their specialist provider network and achieving the financial outcomes they intended. Network leakage, referral backlogs, scheduling wait times, and appointment no-shows are all symptoms of a broken process that directly impacts the bottom line. This white paper advocates for a smarter approach to navigating high-priority patients, and lays out the clear business case for capturing more value from your investment in aligned providers and key service lines.

The Advisory Board

6 Ways to Reduce Referral Leakage
December 2024

"Many health systems employ physicians, in part, for the presumed benefits that come from an employed network: downstream revenue, streamlined care coordination, and improved patient experience."

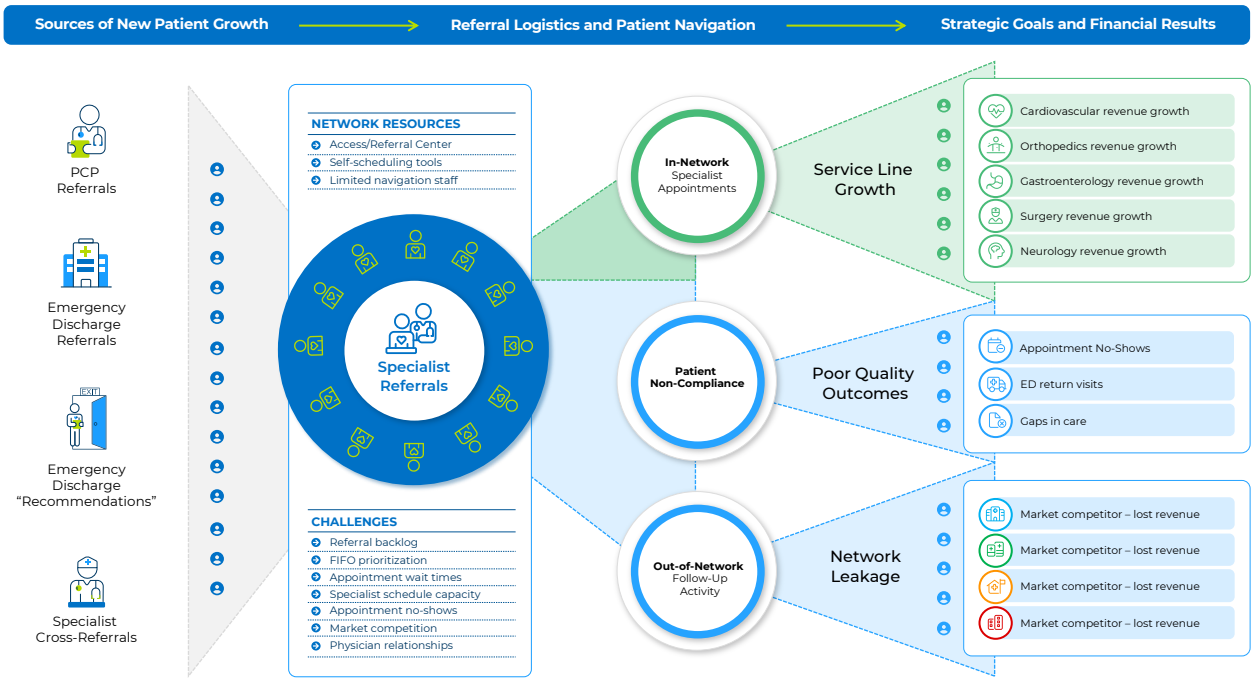
In today's competitive health system landscape, every specialist referral is a potential stream of revenue - and every leak in the referral process directly impacts the bottom line. For complex delivery networks with multiple points of access in primary care and the emergency department, patient leakage represents a significant financial liability. Recent studies show that **only 55% of referral revenue is typically retained by the health system, while the remainder is lost to competing providers in the market** or, even worse, results in neglected follow-up care and avoidable acute events. For patients discharged from the Emergency Department, the in-network referral completion rate is even lower – with fewer navigation resources typically focused on this valuable patient segment.

The Referral Value Chain is Broken

Imagine your integrated health system as a finely-tuned pipeline engineered to maximize the flow of high-quality care and robust revenue. If that pipeline is riddled with leaks - cumbersome referral workflows and inefficient use of specialist schedules – then substantial downstream service revenue flows out of the system. In-network referrals, and the navigation of those referrals to specialist follow-up appointments and downstream hospital services, are the lifeblood of a health system growth strategy. For new patients referred from the "front door" of the Emergency Department and PCP visits, **improving the rate that specialist referrals are attached to downstream revenue is a critical performance metric for any health system**.

Mapping the Sources and Outcomes of Specialist Referrals

The diagram below outlines the sources of specialist referrals and the navigation challenges converting these patients to service line utilization and quality outcomes. Every referral has three possible outomes: 1) in-network appointment, 2) leakage to a competitor or 3) non-compliance.



Understanding the Problem: Value Leakage

The referral value chain is a logistics challenge, with a series of potential failure points that result in value leakage and a poor patient experience:

Missing Referrals in the Emergency Department

The ED is the 'front door" for many high-value patients requiring specialist follow-up and downstream services. Yet these clinical next steps are rarely captured as discrete referral "orders" by busy emergency physicians – and are instead buried as "recommendations" in the discharge instruction notes. The result is missed specialist referral opportunities and a high-rate of ED discharges being left on their own to self-navigate – often leading to out-of-network leakage or, worse, ED return visits.

"First-In-First-Out" (FIFO) Referral Prioritization

Health systems are typically managing a large backlog of PCP to specialist referrals in their Patient Access Center. To manage this volume, these teams often take a "First-In-First-Out" approach, prioritizing based on the timing of the referral. A FIFO approach does not optimize for limited specialist schedule capacity or prioritize high-value patients to get them in sooner. With three patients for every one available appointment slot, the result is that high-value specialist appointments are filled with lower priority patients with lower potential for downstream utilization and in-network revenue.

Focus on New Self-Scheduling Tools

Many health systems have attempted to address the patient access challenge with digital self-scheduling tools. This does not solve the specialist appointment capacity issue and only serves to get more of the wrong patients into those valuable specialist slots. **Sending a generic a self-scheduling link to every patient is like casting a wide net over a logistics challenge that requires precision and prioritization**. Optimizing the referral value chain is about engaging the right patients, not just driving appointment volume.

Patient Appointment No-Shows

A common result of patient self-scheduling is an increased rate of appointment no-shows. This is the worst possible outcome for a specialty practice with limited capacity. A patient that cancels at the last minute, leaving no time to fill that appointment slot with another patient, is a critical failure in the referral value chain. For some patient segments referred from the Emergency Department, for example, the appointment no-show rate can top 30%.

Limited Navigation and Scheduling Staff

Centralized Patient Access or Referral Centers are often focused on authorization tasks and inbound scheduling requests. Furthermore, many dedicated patient navigation teams supporting patients to schedule their next steps are assigned only to specific, complex service lines such as oncology. With limited resources focused on proactive outreach to the growing backlog of specialist referrals, many patients are on their own to navigate the system and schedule directly with specialist office staff.

Overburdened Staff in Specialty Practice Offices

Patient access and scheduling staff in provider practices are burdened with a variety of responsibilities, including the scheduling and rescheduling of new patient referrals. Waiting on hold and playing phone tag is a poor patient experience, and directly results in scheduling delays and potential patient leakage to other specialist options in the market. Without a standardized and centralized process, offices rely on inconsistent methods of processing and tracking referrals.

Limited Visibility into Referral Performance Metrics

Linking referrals to appointment outcomes is essential for understanding bottlenecks and performance improvement. Unfortunately, these data types are rarely connected in the EHR, making it difficult to track the outcomes of referral handoffs and understand actual referral conversion rates or timelines. While many health systems know their initial referral patterns, they have limited insight into referral outcomes and the breakdowns that occur in scheduling and follow-up.

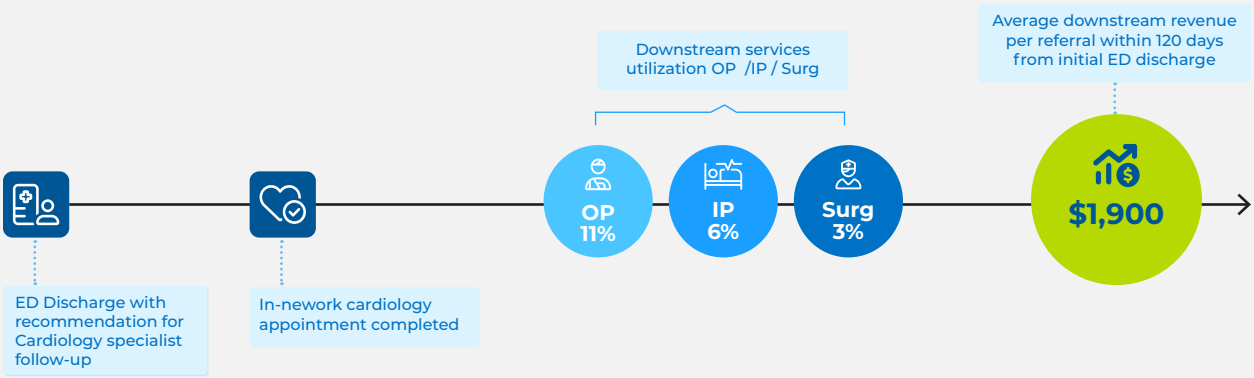
A Cardiology Example

Cardiology is a prime example of a high-value service line where referral leakage can have a significant financial impact. Consider the following scenario:

A patient experiencing mild chest pain arrives at the ED of a large health system. After initial evaluation and diagnostic tests, the ED physician recommends a follow-up consultation with a cardiology specialist. However, due to inefficient processes and limited navigation resources focused on ED referrals, scheduling outreach to the patient is delayed. In fact, the recommended follow-up care is not recorded as a discrete referral "order" in the Epic EMR and is instead buried in after-visit-summary notes. The patient is eventually sent a generic self-scheduling link via MyChart text, but finds a long wait time for the next available cardiologist appointment. Frustrated by the delay and attracted by the schedule availability at a competitive cardiology practice across town, the patient ultimately receives a critical procedure - an angioplasty - at a rival hospital.

This leakage not only results in lost revenue but also erodes the health system's market share. Market competition in cardiology is intense, and when specialist referral resources are not optimized to keep high-value patients in network, those patients more likely to 'attach" to competitors for downstream services.

Below is an example of the downstream margin opportunity for a typical Cardiologist referral from the ED, with utlization rates for subsequent outpatient, inpatient and surgical services:



A patient discharged from the ED with a cardiologist referral has a relatively high rate of downstream utilization of outpatient, inpatient, and surgical services within 120 from the index ED discharge. This metric can be calculated across a population of ED discharges and represented as an average downstream utilization/margin metric to quantify the average value of each cardiology referral. Keeping more of these patients in the health system network is an obvious benefit – and reducing network leakage, especially for high-value referrals with a high average downstream utilization rate, can be worth millions to the bottom line of the cardiovascular service line.

The Financial Model:
12 Key Metrics to Know

METRICS	DEFINITION	EXAMPLE
Specialist Referral Capture Rate	The rate at which specialist follow-up care is captured in the EMR, either as a discrete referral "order" or as a "recommendation" documented in the after-visit-summary notes	In the ED, only 20% of recommended specialist follow-up is captured as a discrete referral "order".
In-Network Specialist Referral Rate	The rate at which referrals are made to an in-network specialist vs an out-of-network provider. This is usually tracked at the referring PCP level.	For a given PCP, 70% of referrals for specialist follow-up might be referred to in-network specialists (Tier 1 or Tier 2 network providers)
Time-To-Scheduled Appointment	The number of days from the initial referral by a PCP (or a documented recommendation in the ED) to the actual appointment at the specialist office.	Time-to appointment varies significantly by specialty and practice. For some specialties this can > 60 days.
Appointment No-Show Rate	Last minute cancellations as a percentage of total appointments for a given specialty practice. Last minute cancellations are typically with 24 hours of appointment and can't easily be filled by other patients.	For some practices the no-show rate can be as high as 20-30% for certain patient populations.
In-Network Specialist Referral Completion Rate	The percentage of Specialist referrals that result in a completed appointment by an in-network specialist. [Referrals that never convert into a scheduled in-network specialist appointment and no-shows are excluded.]	This can be as low as 40% for some organizaions. It is also difficult to track due to appointment activity and no-shows not being linked to the original referral order.
Downstream OP Utilization Rate	The count of all downstream Outpatient visits delivered by the Health System within 120 days of each index ED discharge, as a percentage of the original number of index ED discharges. 100 index ED discharges generating 37 downstream Outpatient services would be 37%.	This will vary significantly by clinical service line. Orthopedics and Spine can be as high as 90% due to high imaging utilization. GI and Cardiovascular might be closer to 10%
Downstream IP Utilization Rate	The count of all downstream Inpatient visits delivered by the Health System within 120 days of each index ED discharge, as a percentage of the original number of index ED discharges. [100 index ED discharges generating 9 downstream Inpatient visits would be 9%.]	This will vary significantly by clinical service line. For referrals to a Neurosciences specialist, IP utilization might be as high as 30% while Urology might be closer to 5%
Downstream Surgery Utilization Rate	The count of all downstream Surgery visits delivered by the Health System within 120 days of each index ED discharge, as a percentage of the original number of index ED discharges. [100 index ED discharges generating 5 downstream Surgery visits would be 5%.]	This will vary significantly by clinical service line. For referrals to a Urology specialist, Surgery utilization might be as high as 13% while Orthopedics might be closer to 4%
Downstream OP Revenue/ Margin Per Patient Referral	The average Total Outpatient Revenue per ED Discharge referred to an in-network specialist, for any subsequent Outpatient utilization at the Health System within 120 days of the index ED discharge.	Average revenue and margin will vary based on each health system's unique payer mix and cost accounting methodology.
Downstream IP Revenue/ Margin Per Patient Referral	The average Total Inpatient Revenue per ED Discharge referred to an in-network specialist, for any subsequent Inpatient utilization at the Health System within 120 days of the index ED discharge.	Average revenue and margin will vary based on each health systems unique payer mix and cost accounting methodology.
Downstream Surg Revenue/ Margin Per Patient Referral	The average Total Surgery Revenue per ED Discharge referred to an in-network specialist, for any subsequent Surgery utilization at the Health System within 120 days of the index ED discharge.	Average revenue and margin will vary based on each health systems unique payer mix and cost accounting methodology.
Downstream Total Revenue/ Margin Per Patient Referral	The average Total Revenue per ED Discharge referred to an in-network specialist, for any subsequent utilization (IP/OP/Surg) at the Health System within 120 days of the index ED discharge.	Average revenue and margin will vary based on each health systems unique payer mix and cost accounting methodology. For certain payers, the analysis may be impacted by negative average margins.

The Financial Model:
Value Calculations and Assumptions

How the Model Works

This model calculates the increase in Downstream Margin for Targeted Services Lines.
The model starts with 2 baseline assumptions:
1) The In-Network Referral Completion Rate and 2) the downstream OP/IP/Surg utilization rate for each Service Line.
The value calculation is based on an increase in both of these metrics, and the compounded impact.
Key Inputs also include the baseline Utilization rates for OP/IP/Surg for each Service Line and the Average Margin for each.
The Downstream Utilization Multiplier accounts for the effect of completing more in-network referrals combined with the effect of prioritizing high-value referrals (with a higher than average utilization rate).

Smart ED Referral Navigation - Value Drivers

Annual ED Visits	220,000
Annual ED Discharges	180,400
ED Discharges - Referral Orders	7,216
ED Discharges - Referral "Recommendations"	28,864
Total Specialist Referral Opportunity	36,080
In-Network Referral Completion Rate (Baseline)	40%

Increased In-Network Referral Completion Rate:	55%	vs	40%
Increased Downstream Utlization Ratio:	1.15	vs	1.0
Downstream Utlization Multiplier	1.58		

[Example: Show me the impact of increasing In-Network Rate from 40% to 55% and the compounded impact of prioritizing referrals with a higher downstream utlization ratio]

Target Referrals to High-Value Service Lines

		Index ED Discharges (Referrals)
Cardiovascular	18%	5,196
Gastroenterology	15%	4,330
General Medicine	15%	4,330
Neurosciences	4%	1,155
Orthopedics	22%	6,350
Spine	3%	866
Surgery - ENT	5%	1,443
Surgery - General Surg	12%	3,464
Surgery - Urology	6%	1,732
Totals	**100%**	**28,864**

Downstream Value Analysis (Baseline)

Downstream Value Metrics	OP Visits	IP Admits	Surg Proc.	Totals
Downstream Utilization %	11%	5%	2%	
Downstream Visits/Admits/Proc	572	260	104	
Downstream Margin Per ED Discharge	$ 218	$ 7,228	$ 4,749	
Total Downstream Margin	$ 124,589	$ 1,877,661	$ 493,470	$ 2,495,720
Downstream Utilization %	12%	9%	6%	
Downstream Visits/Admits/Proc	520	390	260	
Downstrem Margin Per ED Discharge	$ 205	$ 6,771	$ 864	
Total Downstream Margin	$ 106,508	$ 2,638,415	$ 224,446	$ 2,969,370
Downstream Utilization %	36%	6%	5%	
Downstream Visits/Admits/Proc	1,559	260	216	
Downstream Margin Per ED Discharge	$ 96	$ 5,001	$ 1,501	
Total Downstream Margin	$ 149,631	$ 1,299,140	$ 324,936	$ 1,773,707
Downstream Utilization %	52%	37%	2%	
Downstream Visits/Admits/Proc	600	427	23	
Downstream Margin Per ED Discharge	$ 336	$ 5,361	$ 1,000	
Total Downstream Margin	$ 201,725	$ 2,290,151	$ 23,091	$ 2,514,967
Downstream Utilization %	83%	14%	5%	
Downstream Visits/Admits/Proc	5,271	889	318	
Downstream Margin Per ED Discharge	$ 239	$ 3,865	$ 1,000	
Total Downstream Margin	$ 1,259,665	$ 3,436,028	$ 317,504	$ 5,013,198
Downstream Utilization %	98%	10%	2%	
Downstream Visits/Admits/Proc	849	87	17	
Downstream Margin Per ED Discharge	$ 212	$ 7,201	$ 7,004	
Total Downstream Margin	$ 179,904	$ 623,549	$ 121,298	$ 924,751
Downstream Utilization %	4%	2%	2%	
Downstream Visits/Admits/Proc	58	29	29	
Downstrem Margin Per ED Discharge	$ 121	$ 2,500	$ 2,500	
Total Downstream Margin	$ 6,985	$ 72,160	$ 72,160	$ 151,305
Downstream Utilization %	14%	22%	11%	
Downstream Visits/Admits/Proc	485	762	381	
Downstream Margin Per ED Discharge	$ 127	$ 8,467	$ 3,968	
Total Downstream Margin	$ 61,584	$ 6,451,935	$ 1,511,827	$ 8,025,347
Downstream Utilization %	61%	9%	13%	
Downstream Visits/Admits/Proc	1,056	156	225	
Downstream Margin Per ED Discharge	$ 110	$ 6,344	$ 2,650	
Total Downstream Margin	$ 116,206	$ 988,811	$ 596,619	$ 1,701,637
Total ED Referral Margin	**$ 2,206,797**	**$ 19,677,850**	**$ 3,685,353**	**$ 25,570,000**

Step-By-Step Guide to the Model

The model above is built on several key assumptions related to understanding how patients referred for specialist follow-up care are expected to utilize subsequent downstream services at the health system within 120 days of their initial referral to a specialist.

STEP 01: Baseline Downstream Utlization and Margin Assumptions:

To build an accurate model, this baseline data must be calculated for each targeted speciality to account for the appropriate acuity mix. The example model above is built on the following underlying assumptions for downstram Outpatient, Inpatient and Surgical utlization rates and average margins, per patient referral. This can be calculated using basic ADT and Revenue/Cost data for a health system.

BASELINE	Downstream Utilization and Average Margin Per Referral (120 Days from ED Discharge)			
Target Specialty	**Downstream Value Metrics**	**OP Visits**	**IP Admits**	**Surg Proc.**
Cardiovascular	Downstream Utilization %	11%	5%	2%
	Average Downstream Margin	$218	$7,228	$4,749
Gastroenterology	Downstream Utilization %	12%	9%	6%
	Average Downstream Margin	$205	$6,771	$864
Orthopedics	Downstream Utilization %	83%	14%	5%
	Average Downstream Margin	$239	$3,865	$1,000
Surgery - General Surg	Downstream Utilization %	14%	22%	11%
	Average Downstream Margin	$127	$8,467	$3,968
Surgery - Urology	Downstream Utilization %	61%	9%	13%
	Average Downstream Margin	$110	$6,344	$2,650

STEP 02: Determine Targeted Referral Volumes for each Specialty:

The primary input for the model is referral volumes by speciality. The health system may choose to target only certain high-value specialties, or those with the highest risk for network leakage in a competitive market. Furthermore, while PCP-to-Specialist referrals are easy to identify in the discrete referral orders, ED referrals and recommendations are often harder to track. The example model above uses an assumption that 25% of ED discharges have a referral opportunity and 30% of those are referred to targeted high-value specialties.

ED Referral Volumes	
Annual ED Visits	220,000
Annual ED Discharges	180,400
ED Discharges - Referral Orders	5,412
ED Discharges - Referral "Recommendations"	21,648
Total Specialist Referral Opportunity	27,060
In-Network Referral Completion Rate (Baseline)	40%

ED Referrals to Targeted Specialities		
Cardiovascular	18%	4,871
Gastroenterology	15%	4,059
General Medicine	15%	4,059
Neurosciences	5%	1,353
Orthopedics	30%	8,118
Spine	4%	1,082
Surgery - ENT	5%	1,353
Surgery - General Surg	12%	3,247
Surgery - Urology	6%	1,624

STEP 03: Adjust the In-Network Completion Rate and Downstream Utilization

Navigating more high-value referrals to scheduled appointments with in-network specialists has a compounding effect on the rate of downstream services utilization. The model includes two separate adjustment factors to apply the impact of increased in-network conversion rates and also the impact of focusing navigation resources on higher-value patients. For example if the baseline in-network completion rate is 40% and we assume the navigation program would increase this to 48%, then that is a 1.2X factor. LIkewise if the baseline utilization rate is 20% and the program is expected to increase that to 25%, then that is a factor of 1.25X. Combined this these two adjustment factors (multiplied together) would increase the overall downstream utulization multiplier by 1.5X.

Smart Navigation of High-Value Referrals:

Increased In-Network Referral Completion Rate:	55%	vs	40%
Increased Downstream Utlization Ratio:	1.15	vs	1.0
Downstream Utlization Multiplier	1.58		

[Example: Show me the impact of increasing In-Network Completion Rate from 40% to 50% and the compounded impact of prioritizing referrals with a higher downstream utlization ratio]

STEP 04: Apply the Downstream Utilization Multiplier to Each Speciality/Service Type

To calculate the total opportunity for each specialty and the overall opportunity for all specialties, apply the Downstream Utlization Multiplier to the base utilization rates for each segment. This will calculate the new expected Revenue/Margin generated by increased downstream utlization for the segment of navigated high-value referrals. Simply calculate the difference between the baseline Revenue/Margin and the Expected Revenue/Margin to measure the net increase.

VALUE CALCULATION — **Incremental Downstream Utilization and Service Line Margin Contribution**

Target Specialties	Downstream Value Metrics	OP Visits	IP Admits	Surg Proc.	TOTALS
Cardiovascular	New Downstream Utilization %	17%	8%	3%	
	Average Downstream Margin	$218	$7,228	$4,749	
	Additional Visits/Admits/Proc	71	35	14	
	Incremental Downstream Margin	$15,445	$256,045	$67,291	**$338,781**
Gastroenterology	New Downstream Utilization %	11%	9%	6%	
	Average Downstream Margin	$205	$6,771	$864	
	Additional Visits/Admits/Proc	65	53	35	
	Incremental Downstream Margin	$13,314	$359,784	$30,606	**$403,704**
Orthopedics	New Downstream Utilization %	83%	14%	5%	
	Average Downstream Margin	$239	$3,865	$1,000	
	Additional Visits/Admits/Proc	213	24	24	
	Incremental Downstream Margin	$50,798	$91,276	$23,616	**$165,690**
Surgery - General Surg	New Downstream Utilization %	13%	22%	11%	
	Average Downstream Margin	$127	$8,467	$3,968	
	Additional Visits/Admits/Proc	82	58	2	
	Incremental Downstream Margin	$10,397	$493,226	$6,247	**$509,871**
Surgery - Urology	New Downstream Utilization %	61%	9%	13%	
	Average Downstream Margin	$110	$6,344	$2,650	
	Additional Visits/Admits/Proc	144	21	31	
	Incremental Downstream Margin	$15,846	$134,838	$81,357	**$232,041**

Who Owns This Problem: Multiple Stakeholders

One reason it can be difficult to analyze and improve the referral value chain is that is crosses over multiple health system functions and stakeholders. From the referral capture process in the ED and PCP offices, to the centralized Patient Access team, to the Medical Group specialist offices, to downstream procedures delivered in the hospital, to the strategy team analyzing network leakage – **there is no one owner of this problem**.

Chief Financial Officer – The CFO oversees the strategic growth and margins of the health system, including Service Line Growth. Specialist referrals are a key source of revenue, and the **ROI calculations** (e.g. average margin per referral) for patient navigation programs and specialist medical group partnerships are essential metrics for a growth-oriented CFO.

Chief Strategy Officer – The CSO helps shape the health system's growth strategy and network alignment. The strategy team conducts market analysis and competitive intelligence, with a focus on **patient leakage**. The strategy team often leads initiatives for new care delivery models and innovation partnerships that help improve network performance and patient experience.

Medical Group Leadership – The Medical Group and affiliated Clinically Integrated Network (CIN) are often separate organizations from the hospital structure, with separate leadership. The Medical Group typically owns the specialist providers and affiliated provider relationships. Medical Group leadership owns the metrics related to **provider appointment capacity, wait times, appointment no-shows,** and the specialist consultations that lead to downstream hospital revenue.

Service Line Leadership – The operational leaders of certain **high-value service lines, such as Cardiology, Orthopedics, and Surgery** really own the growth strategy for their respective service lines. Service Line Leadership works closely with the CFO and Strategy team to manage service line margins, understand competitive market dynamics, and optimize the network of specialist providers involved with each Service Line.

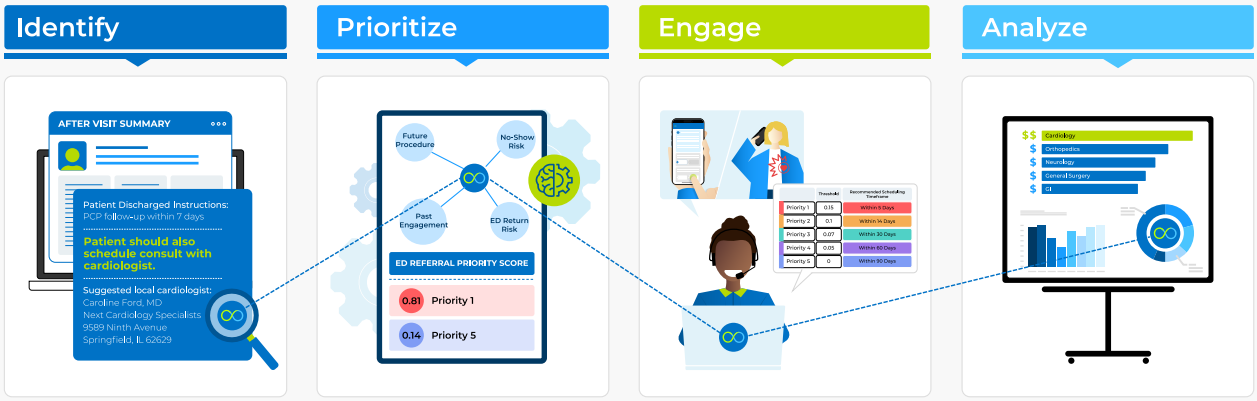
Patient Access / Referral Operations – The patient access team is responsible for the logistics of patient referrals. This includes engaging patients on **scheduling, authorization and general navigation of follow-up activities**. Many health systems have centralized these operations into call centers and leverage new technologies to engage patients. This operational role has an outsized impact on the referral value chain, without owning the downstream outcomes.

Frontline PCP and ED Physicians – The physicians interacting with new patients as the "front-door" of the health system play a critical role in the referral value chain. These physicians are the source of most specialist referrals, and their referral patterns impact all downstream activities. These physicians have their own specialist relationships and their own documentation habits that may impact referral outcomes and network leakage. As a stakeholder in the referral value chain, these physicians often have little insight into the downstream challenges and performance metrics.

Why This Matters: The referral value chain is a system-wide issue that forces a health system to really think as an integrated organization. The ROI to the system as a whole may be clear, but the individual stakeholders don't always have aligned ownership.

The Opportunity for Smarter Referral Navigation

How do you increase in-network specialist referral completion, when specialist practices have limited appointment capacity? **Your navigation and scheduling teams need to work smarter and prioritize the right referrals**. The financial model on page 7 shows that a process to better identify high-value referrals, ensuring that these patients are navigated and promptly scheduled with in-network providers, can have a compounding effect on downstream utilization and service line growth. Implementating such a program requires sophisticated data analytics and a team eqipped with smart workflow technology to priorize the right patients.



Identify Hidden Referrals in Clinical Notes Using NLP

Identify "recommendations" for specialist appointments buried in the ED after-visit summaries.

Score and Prioritize Referrals Using Machine Learning

Create a "priority score" for each patient, accounting for future services, past behavior, no-show, ED return risk.

Engage High-Priority Patients + Streamline Access

Navigate high-priority patients to in-network specialists and manage scheduling logistics.

Analyze Network Patterns and Growth Opportunities

Increase, transparency into network leakage, time-to-appointment, and downstream revenue.

A Practical Application of AI Models

Prioritizing high-value patients and optimizing follow-up activities to maximize outcomes, given limited capacity and limited resources, is a perfect job for AI and machine learning. When these algorithms are used to power empathetic, human navigators - enabling them to work smarter and engage the right patients - the ratio of few resources to big outcomes can be amplified significantly.

01 Find More Referral Opportunities with Natural Language Processing (NLP)

Many patient referrals, especially those originating in the Emergency Department, are buried in the clinical notes and discharge instructions text. While the ED is the front door for many high-risk patients that require specialist follow-up and likely downstream procedures, most health systems do a poor job of capturing and tracking these ED referrals. Applying NLP technology to read through clinical notes will typically find 4X more recommendations for specialist follow-up that were never created as a discrete referral order or sent to the specialist office.

02 Prioritize Referrals with Machine Learning and Predictive Analytics

Identifying high priority patient referrals and segmenting them for optimal follow-up requires data to predict outcomes based on past behavior. Patient demographics, diagnosis, comorbidities, past visits, past appointment no-shows, previous ER utilization, previous out of network affiliation, patient family support resources and other social determinants of health, can all be used to segment specialist referrals and identify which patients will benefit most from additional navigation services.

03 Equip Your Navigation and Scheduling Teams to Focus on High-Priority Referrals

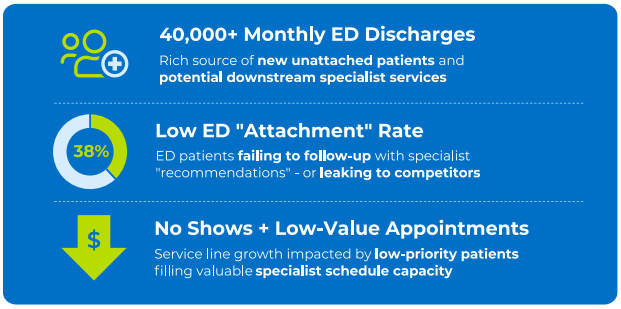
With limited navigation resources and limited specialist appointment capacity, not every patient can get an extra phone call and an expedited slot on the schedule. Navigators need to be equipped with tools to help them work smarter and prioritize patient engagement activities. Some patients will respond to a simple text reminder, while others may require a phone call and additional support. Furthermore, some specialist offices may require special processes or additional information to get high-priority patients on the schedule. With smart worflow tools and priority scores, a navigation team can be more efficient by focusing on the right patients that will drive value for the health system.

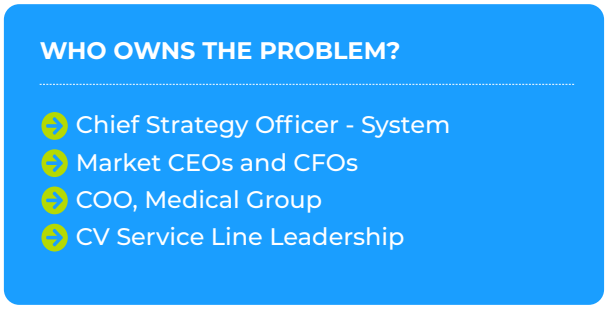
04 Track Granular Referral Metrics and Understand Network Performance

Improving the referral value chain also requires granular data analytics to understand the levers of value and gather continuous feedback on the program. While the ultimate goal may be service line growth or improved quality measures - it is the detailed “process” metrics that drive the learning and program design. Understanding your referral conversion rates, appointment wait-times, patient no-show rates, patient engagement rates, office response times, downstream utilization rates, network leakage activity and other metrics - for each speciality and each patient type - is essential for building a sustainable referral program and getting the maximum value outcomes with limited resources.

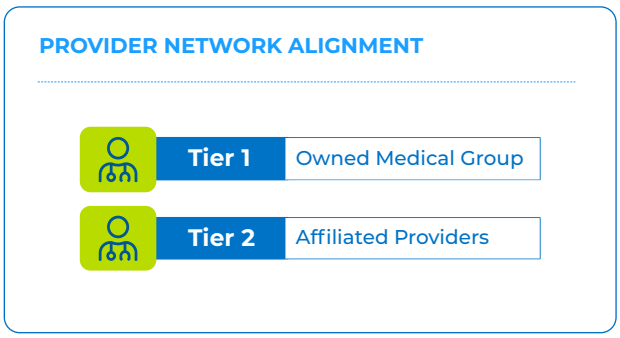
Case Study 1: ED Referral Value Capture

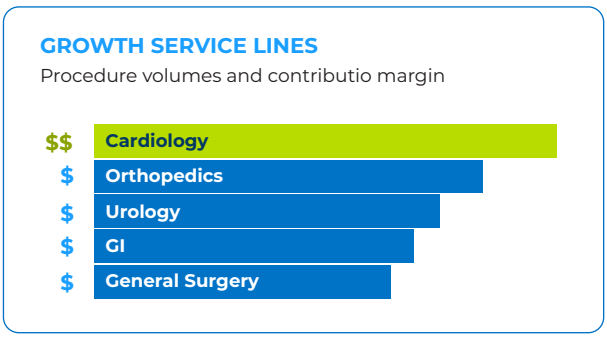
A large multi-state health system with 30+ emergency departments and hospitals across 8+ Markets. The leadership team was focused on margin growth in several key service lines and identified the ED as an important source of specialist referrals. The health system had spent the last decade building a robust medical group of Tier 1 (owned) and Tier 2 (affiliated) specialist practices.





Optimizing for Service Line Growth and Network Integrity:
The organization decided to focus on competitive markets where network leakage from the ED was a particular concern. They targeted key service lines (e.g. cardiovascular) as part of a new a program to identify high-value referrals from the ED, and better navigate them to in-network specialist care. The program included analytics to track the impact on downstream utilization and margin growth.





The Bottom Line
The health system monitored granular data for each service line, measuring the in-network completion rate for high-priority patient referrals. Baseline data was created for downstream utilization of Outpatient, Inpatient and Surgical services within 120 days from ED discharge. The health system saw meaningful growth in utlization rates and margin for high-priority referrals that received targeted navigation outreach.

In Network Referral Completion Rate
[Targeted ED Referrals]
87%

Increased Contribution Margin Per Case
[For Referrals from ED]
+22%

Annualized Service Line Margin Increase
[For Referrals from ED]
+$12.5M

Case Study 2: PCP-to-Specialist Referrals

A regional health system with a growing footprint in multiple markets across two states. The organization has built a medical group network of more that 900 physicians including PCP and specialist providers - along with a Clinically Integrated Network (CIN) of more than 2,000 affiliated providers. To manage specialist referrals the health system recently centralized its Patient Access team, and also rolled out new self-service scheduling tools in some markets.

<40% in-network referral success
Patients not completing follow-up; or going out of the health system specialist network

FIFO approach and self-scheduling
Lack of prioritization strategy leads to the wrong patients filling limited specialist schedules

Limited visibility into referral patterns
Lacking data to understand network leakage and change referring PCP and specialist scheduling behavior

WHO OWNS THE PROBLEM?

- COO, Ambulatory / Medical Group
- VP, Patient Access / Referrals Center
- Strategy / Business Development

Optimizing for Patient Access Efficiency and Limited Specialist Capacity:
The organization was acquiring new physician practices and concerned with integrating these providers into the referral value chain for the health system. They implemented a referral scoring model for the new Patient Access Center to prioritize its backlog of more than 50,000 specialist referrals. This enabled navigation staff to work smarter and schedule more high-priority patients with in-network specialists - reducing network leakage and improving downstream revenue.

				Appt Completion		Acute Care Visit		Recommended Scheduling Timeframe
	Threshold	Volume	Prop Volume	Actual	Rate	Actual	Rate	
Priority 1	0.15	89	4.9%	69	77.5%	34	38.2%	Within 5 Days
Priority 2	0.1	403	22.1%	295	73.2%	89	22.1%	Within 14 Days
Priority 3	0.07	390	21.4%	267	68.5%	100	25.6%	Within 30 Days
Priority 4	0.05	489	26.9%	169	34.6%	83	17.0%	Within 60 Days
Priority 5	0	450	24.7%	21	4.7%	4	0.9%	Within 90 Days
		1,821		821		310		

The Bottom Line
The health system monitored referral patterns for every PCP practice and measured in-network completion rates for high-priority patient referrals. To better understand their own provider network, they also tracked appointment wait times and no-show rates for every specialist office. By focusing on high-value referrals, the system saw growth in downstream utlization rates and realigned their provider network relationships to reduce revenue leakage to competitors in each market.

In-Network Referral Completion Rate
[Targeted ED Referrals]
88%

Reduced No-Show Rate in Specialist Offices
[For Referrals from PCP]
-55%

Increase in Average Margin Per Specialist Referral
[For Referrals from PCP]
+19%

About Care Continuity

Care Continuity is a leading provider of patient navigation and network intelligence solutions. The company applies AI algorithms, combined with empathetic care concierges, to prioritize patient follow-up activities and convert specialist referrals into downstream revenue and quality outcomes. This unique approach guides patients (ED discharges, PCP-to-specialist referrals. IP discharges) through the next steps of their care journey, while maintaining the integrity of the health system network. Most leading health systems have focused on building an aligned medical group feeding into service line growth strategies - and Care Continuity delivers a smart navigation program to maximize those investments. Care Continuity has navigated more than 2 million patients, improving both downstream revenue and quality outcomes for some of the largest integrated health systems in multiple markets across the country.

Additional Resources

To learn more and download additional details about the Business Case, please visit:

www.referralvaluechain.com

- **Download the Business Case White Paper**
- **Access an interactive version of the financial model in Excel**
- **Request a customized analysis of the referral value chain for you health system**

care continuity™

www.carecontinuity.com