Gaining Competitive Advantage through Ambulatory Strategy

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North Shore – LIJ Health System
Building for the Future: Strategic Focus

- Human Capital
- Quality & Safety
- Efficiency & Productivity
- Market Growth
- Community Benefit
- Infrastructure Investment
- Education & Research
- Strengthen Financial Position
- Information Technology
- Physician & Ambulatory Network
Ambulatory Care Strategy

**Vision**
North Shore-LIJ will be nationally recognized as a high-performing health system providing patient-centered care throughout the continuum to its community.

**Strategy Statement**
To develop an integrated, patient-centered care delivery network that develops “patients for life”. This North Shore-LIJ integrated ambulatory network will attract and retain individuals for prevention and wellness, as well as from the earliest stages of their acute and chronic care need, and throughout their entire course of treatment through recovery.

*In order for the Health System to achieve this strategy, our delivery system will be aligned with physicians along service lines in geographically accessible sites of care*
Traditional View of Market Strategy Formulation

Source: SPARCS ver10.03.09adj/pk

Note: Adult Med/Surg
Future View of Market Strategy

Metrics for Prioritization

Demographics
  Total Population
  Population 45+
  45+ Propulation Growth

Market Share

Physicians Supply

Inpatient Market Opp (Discharges)

Insurance Coverage

Source: NS-LIJ Office of Planning analysis/
Strategic Planning
More Important in the Future

➢ Good Data  Good Strategy

Research and Data Analytic Competencies
Big Data

Administrative Data
(IP, ED & Amb Surg)

Claims Data
THE COMPANIES THAT USE ANALYTICS BEST ARE...

- **2X**: more likely to have top-quartile financial performance
- **5X**: more likely to make decisions "much faster" than competition
- **3X**: more likely to execute decisions as intended
- **2X**: more likely to use data very frequently when making decisions

Source: Bain and Co.
Utilizing Ambulatory Data: Practical Examples

The importance of ambulatory planning cannot be overlooked as population health management shifts from inpatient to outpatient. The following are a few practical examples completed by the NS-LIJ Health System Planning Department. The goal of these initiatives were to: 1) identify areas of need for ambulatory services and 2) strategically align with key community physicians to sustain growth and efficiently manage population health:

• **Physician Strategy**
  – Building a robust physician medical group

• **Urgent Care Planning/Strategy**
  – Identify prime areas for urgent care locations

• **Ambulatory Strategy Addressing Preventable Admissions**
  – Improve the Health of communities that are using hospitals as primary care
Practical Example 1: Physician Strategy

Business Development Question: We need to fill a service gap in colo-rectal surgery and understand physician referral relationships for a “build” or “buy” strategy
Practical Example 1: Physician Strategy Methodology

Step 1: Identify specialties for targeted geographic area. Examples: gaps in service, low market share or top physician recruited by competitor. For the purpose of this project, low market share was used as the driver.

Step 2: Identify top discharging physicians and understand their influence network.

Step 3: Identify top referring physicians and assess whether they are aligned or non-aligned with the organization.
Practical Example 1: Physician Strategy Methodology

Steps 1-3

Choose the target physician specialty

How do you know what specialty to target?

Gap in Service Offering
e.g. Diabetes management?

Lower than average market share

Physician recruited by a competitor

Market Share by Service

Colorectal Surgery
Cardiac Surgery
General Surgery
Orthopedics
Spinal
Thoracic Surgery
Urology
Vascular
Otolaryngology
Gynecology

MD’s Influence Network

Shared Patients with other Physicians

MD “E’s” Influence Network

Shared Patients with other Physicians

Size of the Circle illustrates how many patients the physician manages

Cutting off the Influence

Thickness of the line illustrate the number of shared patients

Practical Example 1: Physician Strategy Methodology

Physician Strategy Methodology

Dr. Adams

Dr. Honeydew

Dr. Quest

Dr. Fossil

Dr. Bushroot

Dr. Hogue

Top Volume Physician in the Market
Practical Example 1: Physician Strategy Methodology

ID surgical subspecialties for targeted geographic area.

- Using market share

Why is share significantly lower than average?

Need to understand the top colorectal surgeons and their influence network

Surgical Products
Practical Example 1: Physician Strategy Methodology

For this surgical specialty with low market share, identify top discharging physicians and run their influence network.

Only 1 Physician is employed/aligned with the health system.

Look at Dr. Adam’s Influence Network

Top Discharging Colorectal Surgeons
In the Market

<table>
<thead>
<tr>
<th>Physician¹</th>
<th>System Status</th>
<th>Discharges</th>
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</thead>
<tbody>
<tr>
<td>Dr. Adams</td>
<td>Non-aligned</td>
<td>350</td>
</tr>
<tr>
<td>Dr. Honeydew</td>
<td>Employed</td>
<td>175</td>
</tr>
<tr>
<td>Dr. Quest</td>
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<td>168</td>
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<tr>
<td>Dr. Fossil</td>
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<tr>
<td>Dr. Bushroot</td>
<td>Non-aligned</td>
<td>147</td>
</tr>
<tr>
<td>Dr. Hogue</td>
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</tr>
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</table>

¹ pseudonym
Practical Example 1: Physician Strategy Methodology

Identify top referring physicians and assess whether they are aligned or nonaligned with the organization.

**Dr. Stone is NOT aligned with the health system and shares the largest number of patients with Dr. Adams**

### Dr. Adam’s Influence Network

<table>
<thead>
<tr>
<th>Network Physician Name</th>
<th>Primary Specialty</th>
<th>Status</th>
<th>Office Address</th>
<th>Max Shared Patient Count</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dr. Stone</td>
<td>Internal Medicine</td>
<td>Non-aligned</td>
<td>101 Lakeview Drive, Hope City, ZIP 11111</td>
<td>450</td>
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<tr>
<td>Dr. Quinn</td>
<td>Gastroenterologist</td>
<td>Non-aligned</td>
<td>164 Carefree Road, Beaumont Hill, ZIP 12345</td>
<td>112</td>
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<tr>
<td>Dr. Molloch</td>
<td>Internal Medicine</td>
<td>Employed</td>
<td>145 Sea view Drive, Hope City, ZIP 11111</td>
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<tr>
<td>Dr. Niemann</td>
<td>General Surgery</td>
<td>Non-aligned</td>
<td>122 Beauty Lane, Crescent Ville, ZIP 19087</td>
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</tr>
</tbody>
</table>

Physicians who share at least 1 patient with Dr. Adams

Unique number of patients shared with Dr. Adams

1. pseudonym
Practical Example 1: Physician Strategy Methodology

Identify top referring physicians and assess whether they are aligned or nonaligned with the organization.

*Dr. Stone is the PCP to align with because she shares the most patients with Dr. Adams giving the Health System the best chance at getting more colorectal surgery.*

### Dr. Stone’s Influence Network

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<thead>
<tr>
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<th>Primary Specialty</th>
<th>Status</th>
<th>Office Address</th>
<th>Max Shared Patient Count</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dr. Adams</td>
<td>Colorectal Surgery</td>
<td>Non-aligned</td>
<td>245 City Drive, Great Lodge, ZIP 22222</td>
<td>450</td>
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<tr>
<td>Dr. Powell</td>
<td>General Surgery</td>
<td>Non-aligned</td>
<td>300 South Banks Lane, New Park Way, ZIP 2222</td>
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<tr>
<td>Dr. Blake</td>
<td>Cardiac Surgery</td>
<td>Employed</td>
<td>172-65 Honey Lane, Willow, ZIP 11111</td>
<td>250</td>
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<tr>
<td>Dr. Burns</td>
<td>Oncology</td>
<td>Employed</td>
<td>172-65 Honey Lane, Willow, ZIP 11111</td>
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<tr>
<td>Dr. Honeydew</td>
<td>Colorectal Surgeon</td>
<td>Employed</td>
<td>145 Sea view Drive, Hope City, ZIP 11111</td>
<td>45</td>
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</tbody>
</table>

Physicians who share at least 1 patient with Dr. Stone

Unique number of patients shared with Dr. Stone
Practical Example 1: Physician Strategy Methodology

Using these data models over the past 4 years the Health System has increased its full-time medical staff from 1,900 to 2,700 physicians.

42% growth
Business Development Question: Where are the best locations to develop urgent care centers?
Practical Example 2: Urgent Care Center Planning Methodology

**Step 1**
Create a “Patient Profile”: Identify key variables of population who commonly use urgent care services.

**Step 2**
Use Census block data with demographic variables

**Step 3**
Assign scoring for desired area of interest. For the purpose of this project, Manhattan block groups were ranked from most correlated with the indicator, to least correlated.

**Step 4**
Map results and highlight “hot spots” for urgent care centers.
Practical Example 2: Urgent Care Center Planning

Develop a patient profile of those most likely to use urgent care

Pt Demographics

Income
Education Level
Age
Home
Available in the Claims Data

Not Available in the Claims Data

Use Address from Claims Data

Urgent Care Claims
Urgent Care Claims
Urgent Care Claims

Secondary Research:
Indicates households with children use Urgent Care

Process data through a 3rd Party Credit Card Clearing house

Households with Children
Practical Example 2: Urgent Care Center Planning

Create patient profile based on claims data.

- Adults 19 to 54
- Income up to $500K
- High School Education or Higher
- Households W/ Children

Now with a patient profile you can start using block level census data and ED treat & release market data to start ranking communities
Practical Example 2: Urgent Care Center Planning

There 932 Block Groups in Suffolk County;
A population of between 600-3,000 defines a block group.
Practical Example 2: Urgent Care Center Planning

At the Block Group Level, there are areas of opportunity.

Zip Code is too large: Population ~ 70K

Greater Opp

1st Deciles
2nd Deciles
3rd Deciles
4th Deciles
5th Deciles
6th Deciles
7th Deciles
8th Deciles
9th Deciles
10th Deciles

Less Opp

High Opportunity

There are 881 Block Groups in Manhattan; a population of between 600-3,000 defines a block group.
### Practical Example 2: Urgent Care Center Planning Scoring/Ranking

Analyze block group data and cohort the block groups into deciles.

- More favorable the block group is for a metric, the closer it gets to the top rank of “881”

#### Step 2 & 3

<table>
<thead>
<tr>
<th>Block Group</th>
<th>Neighborhood</th>
<th>Ages 19-54</th>
<th>Ages 0-18</th>
<th>Avg. Income</th>
<th>High School +</th>
<th>Combined Score</th>
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<tbody>
<tr>
<td>Decile 1</td>
<td>Xxxxxxxx</td>
<td>880</td>
<td>877</td>
<td>758</td>
<td>880</td>
<td>3,395</td>
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<tr>
<td></td>
<td>Sunnyside</td>
<td>864</td>
<td>799</td>
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<td>873</td>
<td>3,280</td>
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<tr>
<td>Decile 2</td>
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<td>744</td>
<td>470</td>
<td>716</td>
<td>793</td>
<td>2,723</td>
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<tr>
<td></td>
<td>Bourbon</td>
<td>750</td>
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<td>2,723</td>
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<tr>
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<td>68</td>
<td>56</td>
<td>564</td>
<td>43</td>
<td>731</td>
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</tbody>
</table>

Data Weighted Data

- **Multiply ->**
- **Step 2 & 3**

Analyze block group data and cohort the block groups into deciles.
Practical Example 2: Urgent Care Center Planning

Ranking/Mapping

Hospitals
UCC

Greater Opp
Less Opp

Source: Third party vendor; Allocate; 2015 US Census Community Survey
Practical Example 2: Urgent Care Center Planning
Decant Hospital ED Volume

Market Share:
ED: 27.8%
Inp: 23.2%
Daytime Pop: 74,127
Total Pop: 126,924

Source: Third party vendor; Allocate; 2015 US Census Community Survey
Practical Example 2: Urgent Care Center Planning Access Strategy

Source: Third party vendor; Allocate; 2015 US Census Community Survey

Market Share:
ED: 4.6%
Inp: 5.6%
Daytime Pop: 23,157
Total Pop: 34,926
Practical Example 2: Urgent Care Center Planning
Resulting Plan

Opened Location

North Shore LIJ
GoHealth Urgent Care

32
Practical Example 3: Preventable Admissions

Community Health Question: What are the communities that demonstrate high rates of preventable admissions?
Practical Example 3: Ambulatory Strategy Addressing Preventable Admissions

**Step 1**
Compile a data set of preventable admissions (PQI)

**Step 2**
Assign block groups to patient record

**Step 3**
Using census block group data create utilization rates

**Step 4**
Map results thematically so high utilization areas become obvious.

**Step 5**
Create a Cohort of patients in high utilizing market.

**Step 6**
Understand ED utilization and PCP resources in the market
PQI’s are a set of measures that can be used with hospital inpatient discharge data to identify quality of care for “ambulatory care sensitive conditions.” These are conditions for which good outpatient care can potentially prevent the need for hospitalization or for which early intervention can prevent complications or more severe disease. Source: [www.qualityindicators.ahrq.gov/modules/pqi_resources.aspx](http://www.qualityindicators.ahrq.gov/modules/pqi_resources.aspx)

**Practical Example 3: Ambulatory strategy Addressing Preventable Admissions**

**Medicaid Claims Database**

- Year
- Market
- PQI Definition
- AHRQ

**Create Your Data Set**

**PQI Data set**

Claims

- Claims
- Claim

**Create Cohort**

**Geocode the data at the block group Level**

**Volume For Each Block Group**

- Pop: 1,000

**Thematically Map**

**Develop Use/rates**

- Are they using the ER?
- PCP resource?
- Medicaid Claims Database

**Practical Example 3: Ambulatory strategy Addressing Preventable Admissions**
**Practical Example 3: PQI Detail**

**Acute PQI’s**
- PQI 10 Dehydration Admission
- PQI 11 Bacterial Pneumonia Admission
- PQI 12 Urinary Tract Infection Admission

**Diabetes PQI’s**
- PQI 01 Diabetes Short-term Complications
- PQI 03 Diabetes Long-term Complications
- PQI 14 Uncontrolled Diabetes
- PQI 16 Lower-Extremity Amputation W/Diabetes

**Circulatory PQI’s**
- PQI 07 Hypertension Admission
- PQI 08 Heart Failure Admission
- PQI 13 Angina Without Procedure Admission

**Respiratory PQI’s**
- PQI 05 COPD or Asthma in Older Adults
- PQI 15 Asthma in Younger Adults

**Pediatric PQI’s**
- PQI 02 Perforated Appendix
- PQI 09 Low Birth Weight
Same areas that show up as Medically Underserved Areas
1. Freeport Block Group
Rate/1,000 = 1,742 (Pop: 1,051)
Total = 1,830
$=60M in Payments

2. Long Beach Block Group
Rate/1,000 = 1,620 (Pop: 1,463)
Total = 2,355
$=31M in Payment

3. Hempstead Block Group
Rate/1,000 = 1,371 (Pop: 835)
Total = 1,145
$=19.8M Payments

What are the PQI’s that these residents (Hempstead/Roosevelt) are being admitted for?
Practical Example 3: Ambulatory strategy Addressing Preventable Admissions

PQI Admission Rate Comparison

- Pediatric PQI’s: Hempstead/Roosevelt 142.6, Nassau 94.3
- Acute PQI’s: Hempstead/Roosevelt 432.0, Nassau 543.2
- Circulatory PQI’s: Hempstead/Roosevelt 251.3, Nassau
- Diabetes PQI’s: Hempstead/Roosevelt 191.1, Nassau 418.9
- Respiratory PQI’s: Hempstead/Roosevelt 410.2, Nassau

Is this Cohort of patients using hospital resources in place of primary care?

Source: SPARCSS2014.08.26; Third party population vendor
Practical Example 3: Ambulatory strategy Addressing Preventable Admissions

37.5% of these visits are PCP Treatable (10,117 visits)

Source: SPARCSS2014.08.26; Third party population vendor
The data suggest that this market is using the hospital inpatient services and Emergency Department as it’s primary Care.

Source: SPARCSS2014.08.26; Third party population vendor
Practical Example 3: Ambulatory strategy Addressing Preventable Admissions

Strategy to Improve the health of this market

Deploying Mobile Units

Managing our at Risk Contracts
Crowd Sourcing Data: Social Media
The Most Important Data Collection Tool Costs ~ $1.50