



**Hospital & Physician Relations
Executive Summit**
Transformation Strategies

March 1 – 3, 2015
Omni Montelucia Resort
Scottsdale, AZ

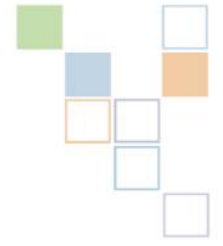
Gaining Competitive Advantage through Ambulatory Strategy

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Jonathan Amalfitano – Director of Strategic Analysis

North Shore – LIJ Health System



Building for the Future: Strategic Focus



Ambulatory Care Strategy



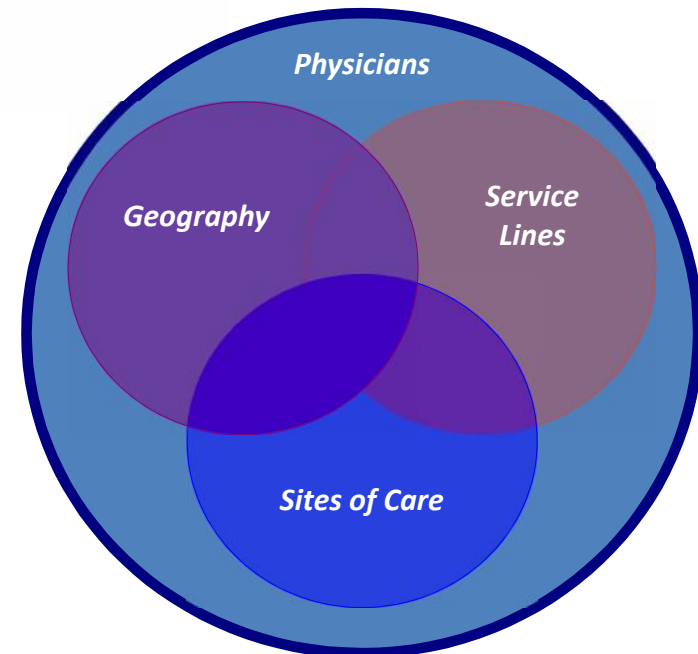
Vision

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

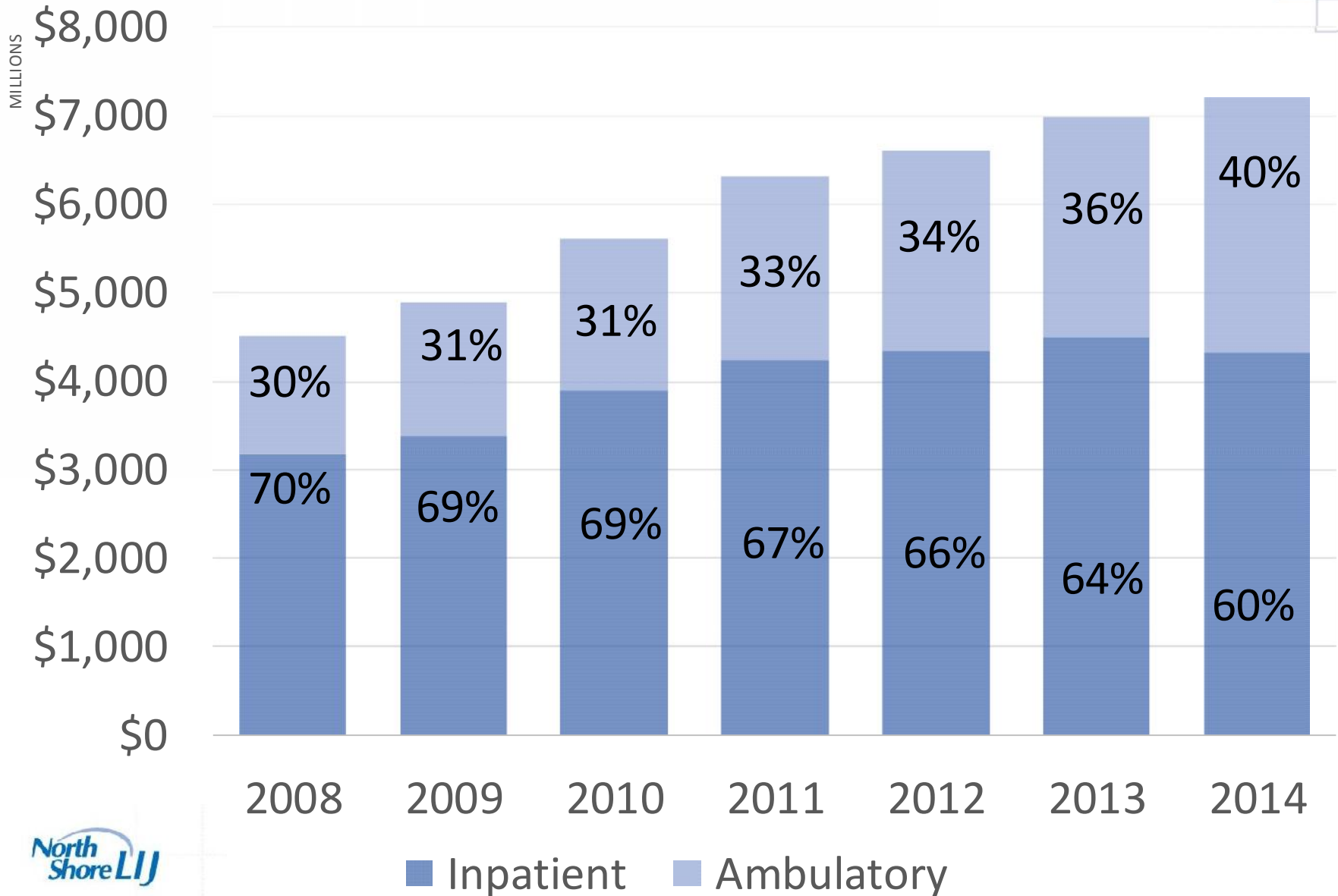
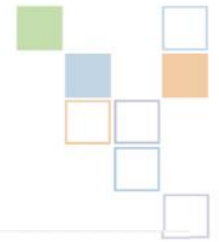
To develop an integrated, patient-centered care delivery network that develops “patients for life”. This North Shore-LIJ integrated ambulatory network will attract and retain individuals for prevention and wellness, as well as from the earliest stages of their acute and chronic care need, and throughout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

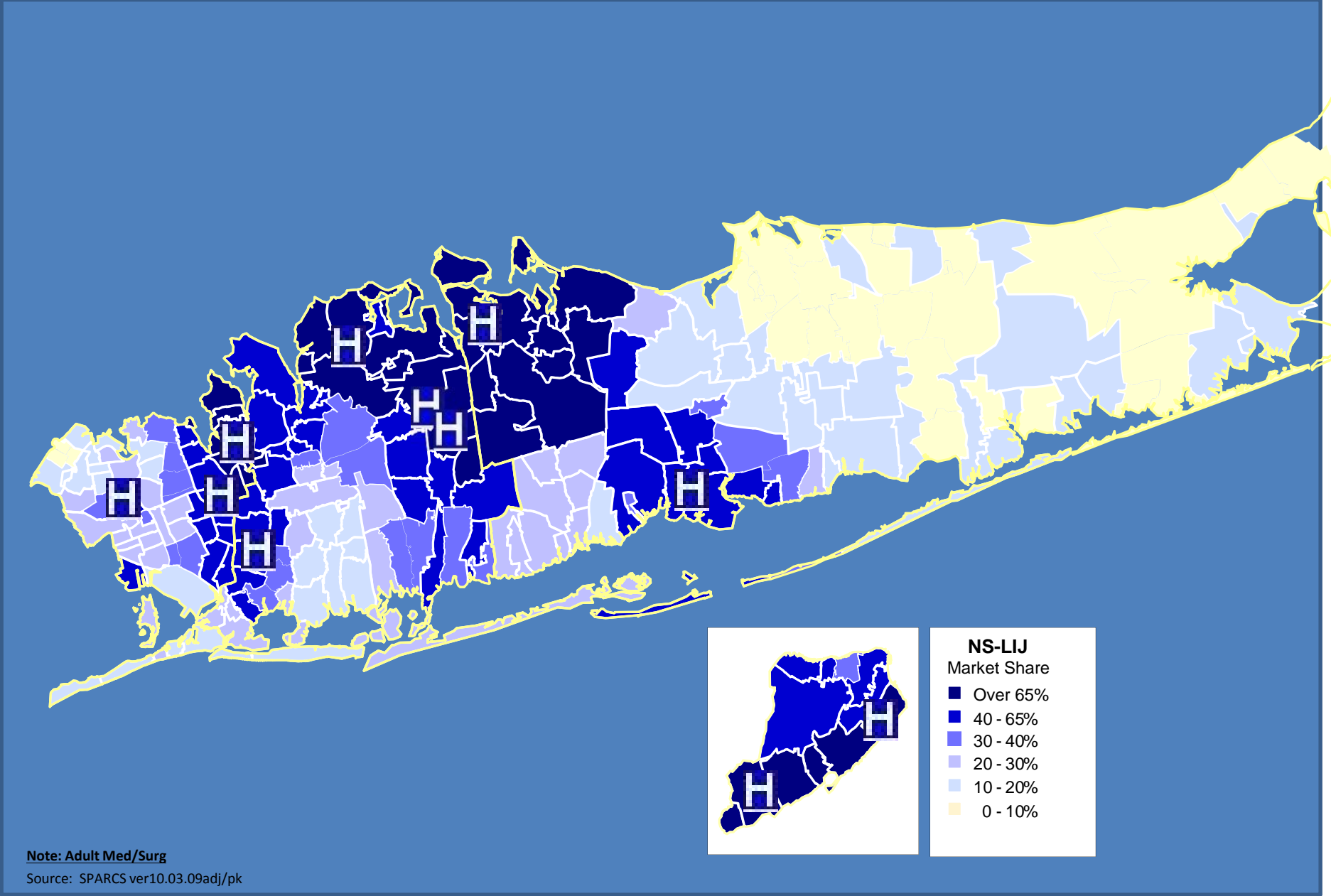


Inpatient/Ambulatory Revenue Mix

NORTH SHORE LIJ REVENUE GROWTH



Traditional View of Market Strategy Formulation



Future View of Market Strategy

Metrics for Prioritization

Demographics

Total Population

Population 45+

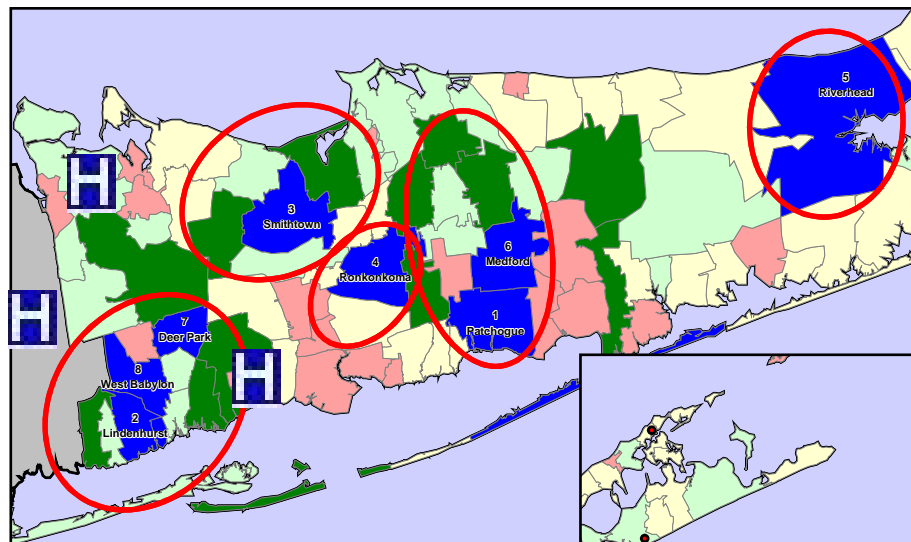
45+ Propulation Growth

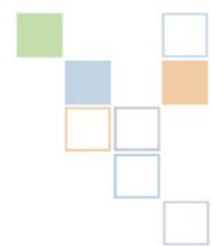
Market Share

Physicians Supply

Inpatient Market Opp (Discharges)

Insurance Coverage





Strategic Planning More Important in the Future

➤ **Good Data** → **Good Strategy**



**Research and
Data Analytic
Competencies**

DATA

INFORMATION

KNOWLEDGE

INSIGHT

ACTION

**STRATEGIC
ANALYTICS
RESULTS IN
ACTION**

Transforming Health Care Through Big Data

Strategies for leveraging big data in the health care industry



JULY 2014 VOL. 33 NO. 7 Published by Project HOPE

EMERGING ISSUES: Big Data, Big Questions — Dawn Patlak

EMERGING SYSTEMS: A Chronic Pain Sufferer Navigates Opioid Use — Janice Lynch Schuster

WEB FIRST: Value Of Shifting ACA Open Enrollment Period — K. Swartz & J. Graves

AT THE INTERSECTION OF HEALTH, HEALTH CARE, AND POLICY

Health Affairs

Using Big Data To Transform Care Page 1123	Managing High-Risk Patients With Predictive Analytics David W. Bates et al. Page 1123	Legal & Ethical Issues Of Predictive Modeling I. Glenn Cohen et al. PLUS Emerging Challenges Ruben Amarasingham et al. Page 1139
Creating A Rapid-Learning Health System Breakthrough Agenda — Lynn M. Etheredge Thinking, Training & Tools Needed — Harlan M. Krumholz Page 1155	Learning Networks To Improve Care PEDSnet — Christopher B. Forrest et al. Optum Labs — Paul J. Wallace et al. Potential For National Networks — Lesley H. Curtis et al. Page 1171	Bringing Patients Into Research Patient-Powered Research Networks — Rachael L. Fleurence et al. Patient-Generated Data — Lynn Howie et al. Page 1212
The Complex Policy Challenges Of Genomics Kathryn A. Phillips et al.	Big Data Spurs Innovation At CMS Niall Brennan, Allison Oelschlaeger, Christine Cox &	GLOBAL HEALTH: Big Data Reveals Risks Of Danish Hospitals' High Bed Occupancy Rates Flemming Madsen, Steen Ladelund & Allan Linneberg

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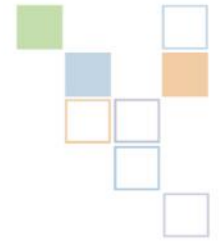
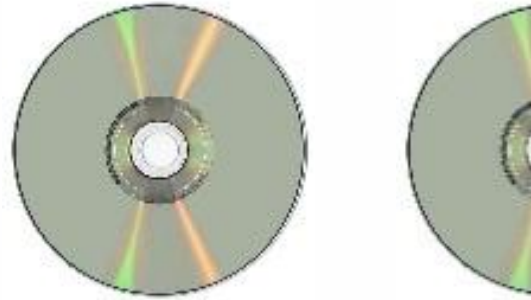
IN A FEVER FOR BIG DATA

Healthcare orgs are relentlessly pushing to accumulate data, and a growing array of tools and techniques are becoming available to store, process, and analyze all that information.

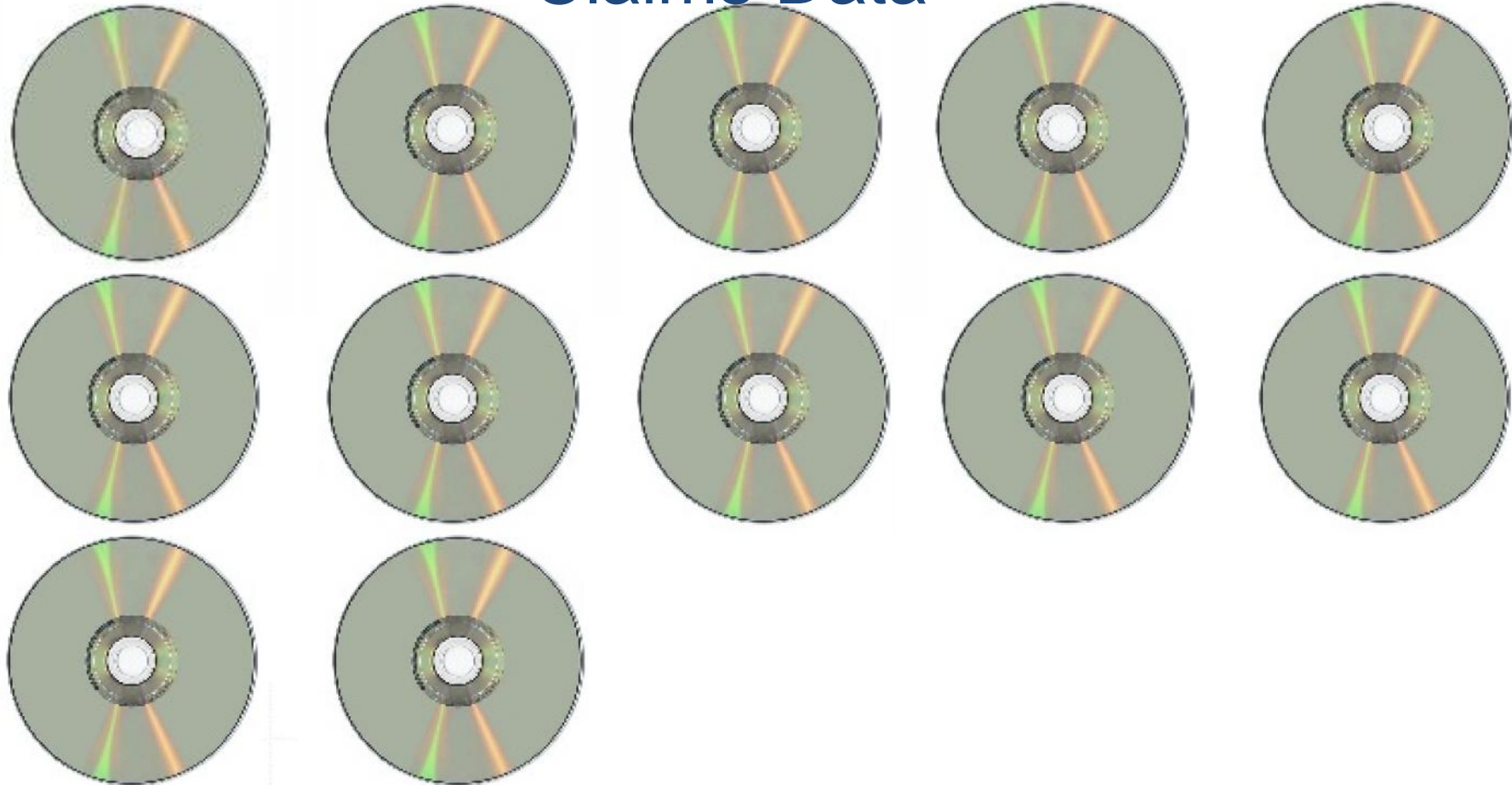


Big Data

Administrative Data
(IP, ED & Amb Surg)



Claims Data



The who, why and how of
BIG 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

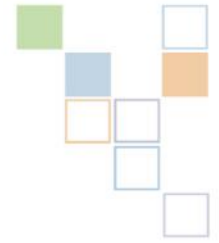
Utilizing Ambulatory Data: Practical Examples



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:

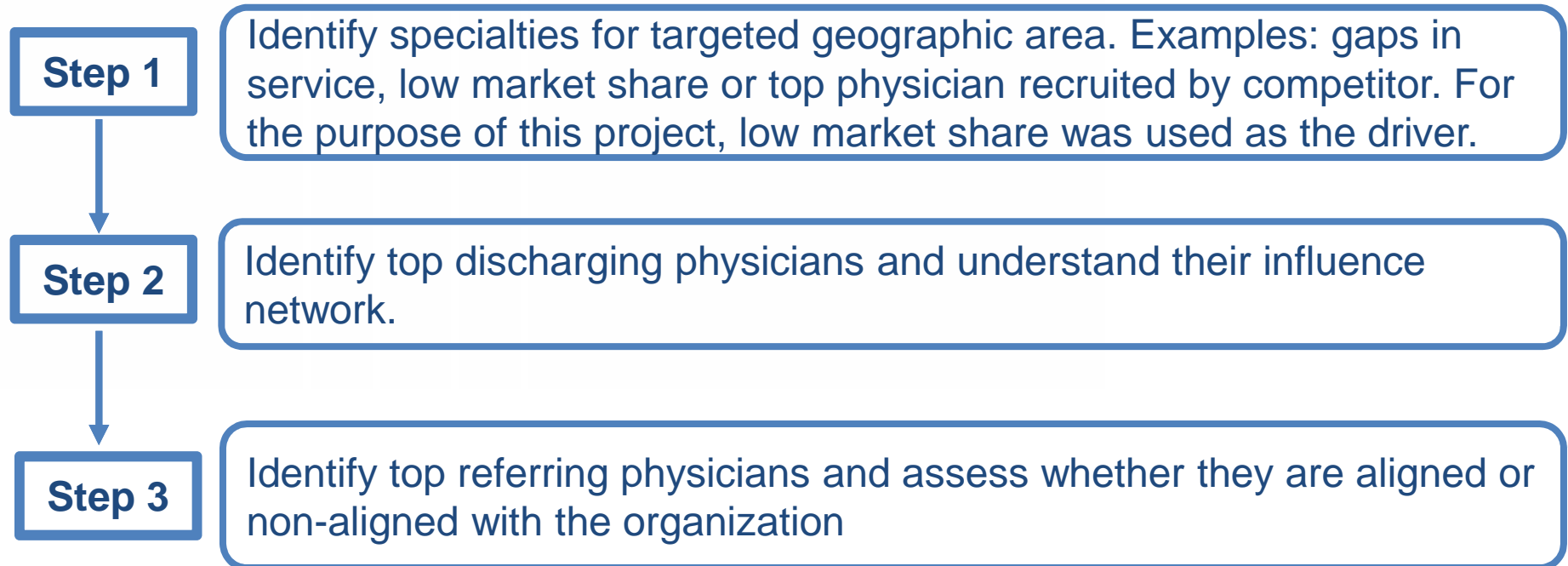
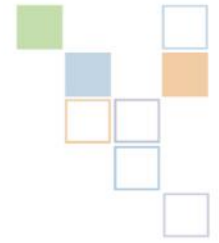
- **Physician Strategy**
 - Building a robust physician medical group
- **Urgent Care Planning/Strategy**
 - Identify prime areas for urgent care locations
- **Ambulatory Strategy Addressing Preventable Admissions**
 - Improve the Health of communities that are using hospitals as primary care

Practical Example 1: Physician Strategy

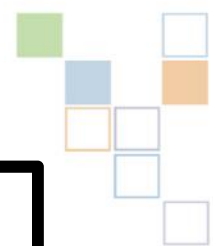


Business Development Question: We need to fill a service gap in colo-rectal surgery and understand physician referral relationships for a “build” or “buy” strategy

Practical Example 1: Physician Strategy Methodology



Practical Example 1: Physician Strategy Methodology

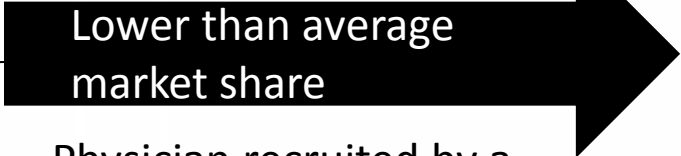
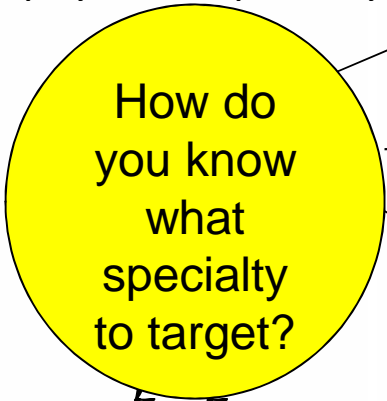


Steps 1-3

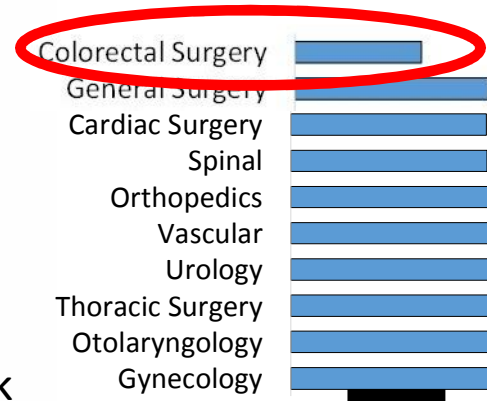
Choose the target physician specialty

Gap in Service Offering
e.g. Diabetes management?

Market Share by Service

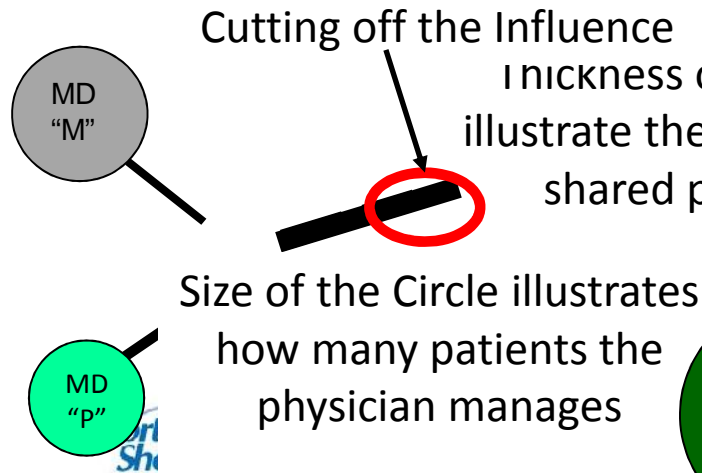


Physician recruited by a competitor

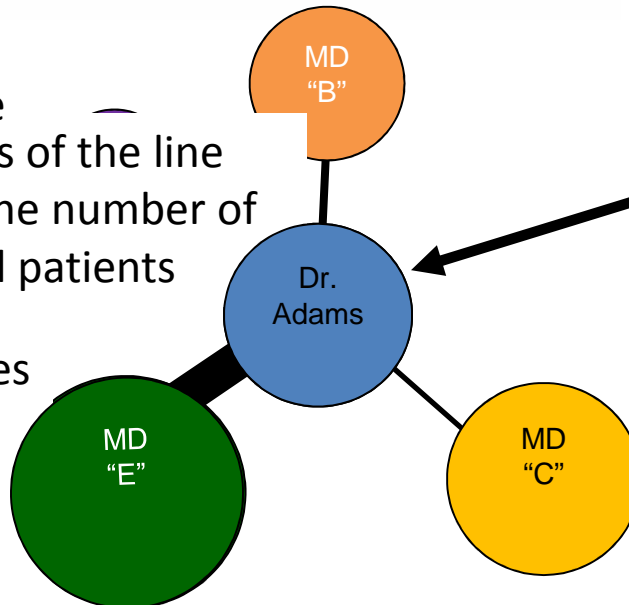


MD "E's" Influence Network
Shared Patients with other Physicians

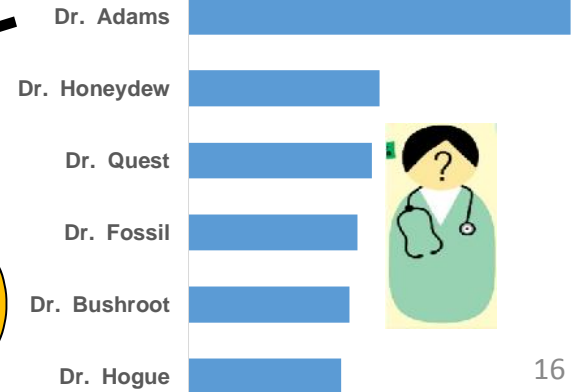
MD's Influence Network
Shared Patients with other Physicians



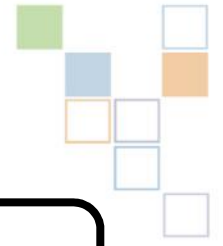
Cutting off the Influence
A nickness of the line illustrate the number of shared patients



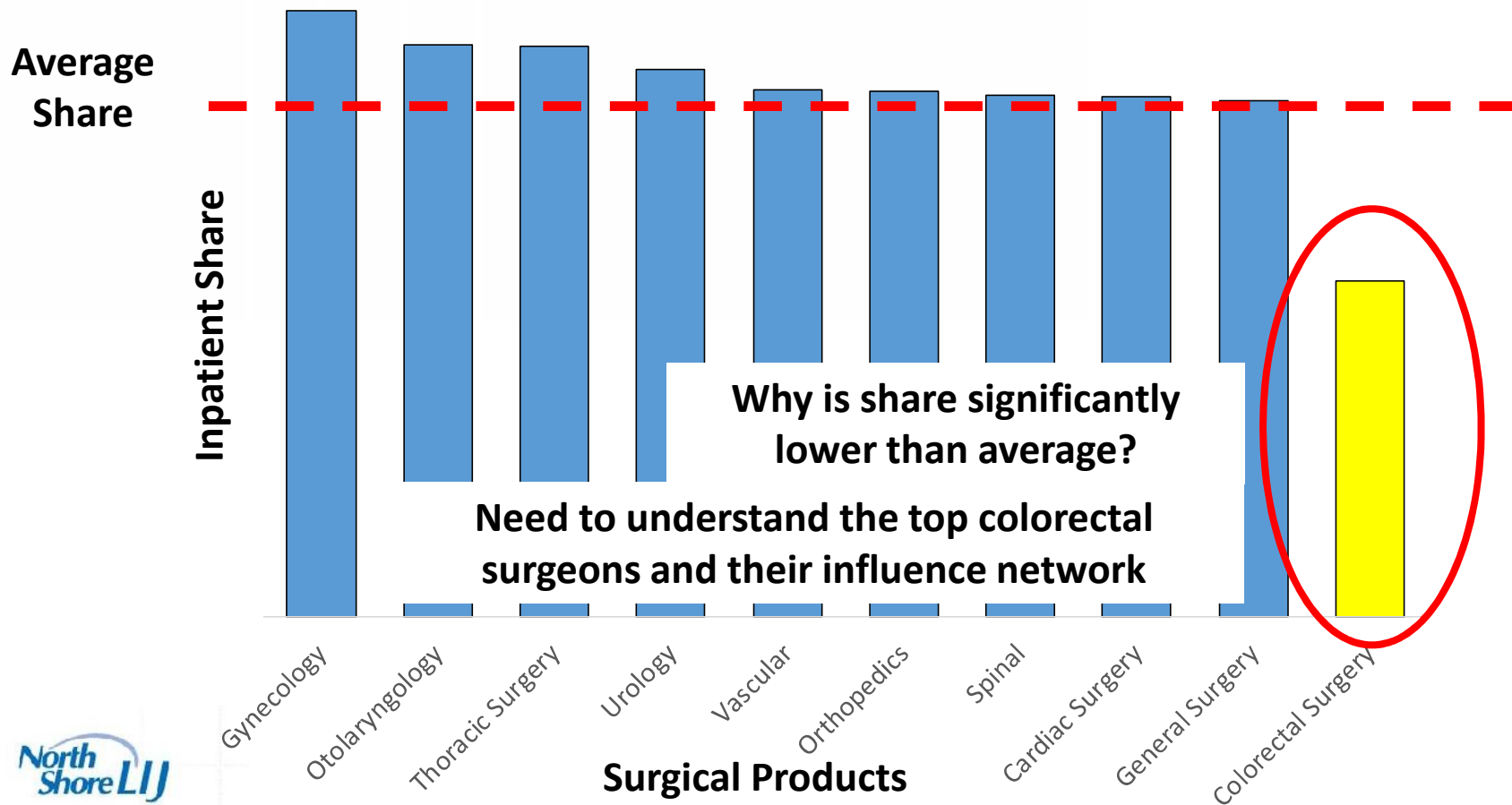
Top Volume Physician in the Market



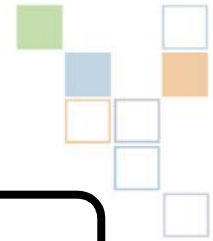
Practical Example 1: Physician Strategy Methodology



ID surgical subspecialties for targeted geographic area.
✓ Using market share



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.

Top Discharging Colorectal Surgeons In the Market

Look at Dr. Adam's Influence Network

Physician ¹	System Status	Discharges
Dr. Adams	Non-aligned	350
Dr. Honeydew	Employed	175
Dr. Quest	Non-aligned	168
Dr. Fossil	Non-aligned	155
Dr. Bushroot	Non-aligned	147
Dr. Hogue	Non-aligned	140

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

Network Physician Name ¹	Primary Specialty	Status	Office Address	Max Shared Patient Count
Dr. Stone	Internal Medicine	Non-aligned	101 Lakeview Drive, Hope City, ZIP 11111	450
Dr. Quinn	Gastroenterologist	Non-aligned	164 Carefree Road, Beaumont Hill, ZIP 12345	112
Dr. Molloch	Internal Medicine	Employed	145 Sea view Drive, Hope City, ZIP 11111	100
Dr. Niemann	General Surgery	Non-aligned	122 Beauty Lane, Crescent Ville, ZIP 19087	40

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

Network Physician Name	Primary Specialty	Status	Office Address	Max Shared Patient Count
Dr. Adams	Colorectal Surgery	Non-aligned	245 City Drive, Great Lodge, ZIP 22222	450
Dr. Powell	General Surgery	Non-aligned	300 South Banks Lane, New Park Way, ZIP 2222	350
Dr. Blake	Cardiac Surgery	Employed	172-65 Honey Lane, Willow, ZIP 11111	250
Dr. Burns	Oncology	Employed	172-65 Honey Lane, Willow, ZIP 11111	100
Dr. Honeydew	Colorectal Surgeon	Employed	145 Sea view Drive, Hope City, ZIP 11111	45

Physicians who share at least 1 patient with Dr. Stone

Unique number of patients shared with Dr. Stone

Practical Example 1: Physician Strategy Methodology



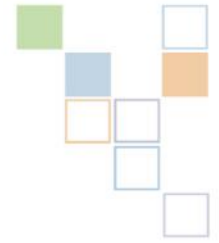
Using these data models over the past 4 years the Health System has increased its full-time medical staff from 1,900 to 2,700 physicians.



42% growth

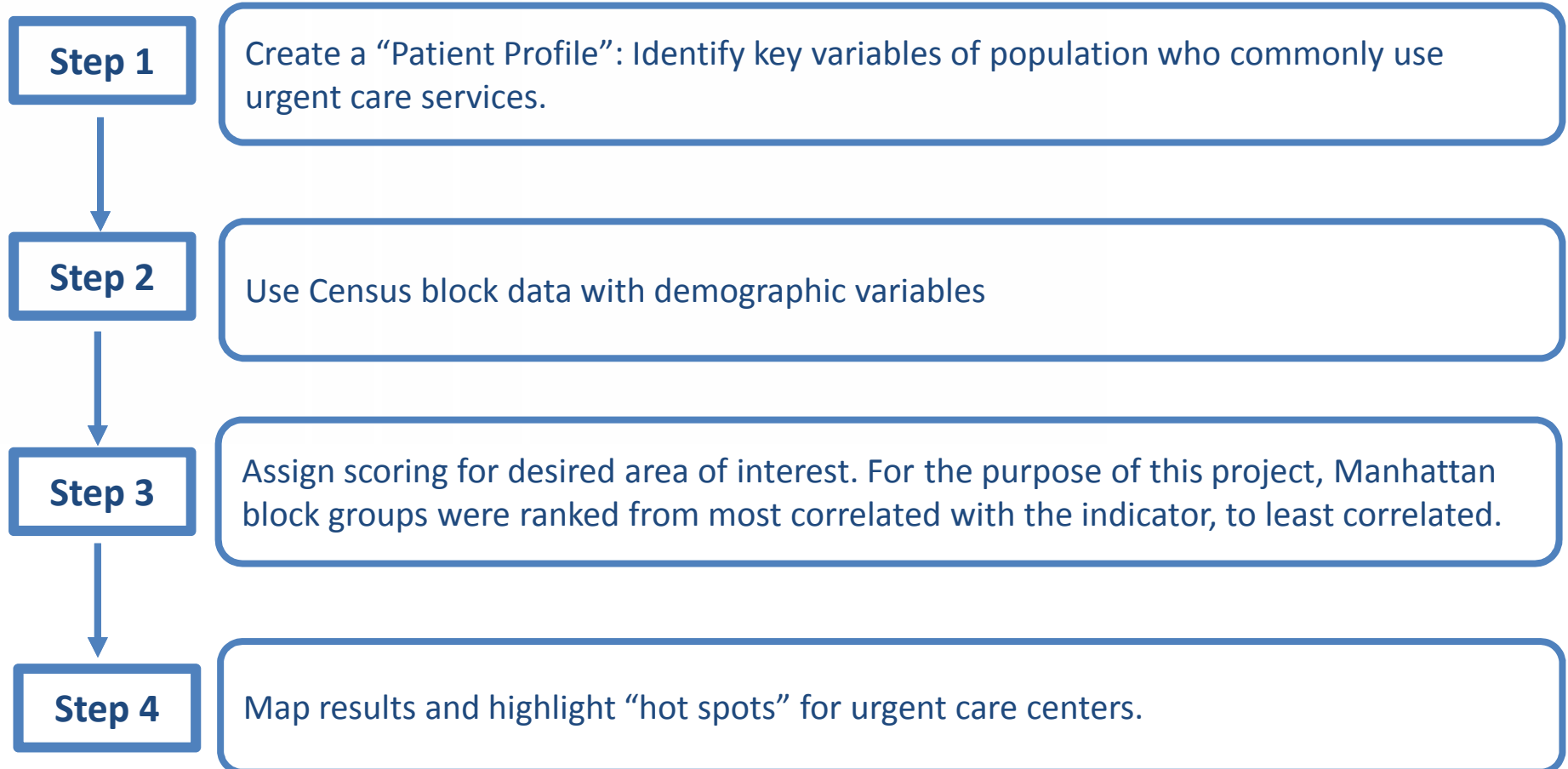
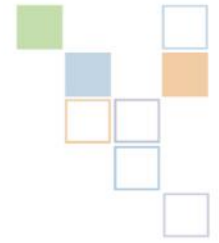


Practical Example 2: Urgent Care Planning



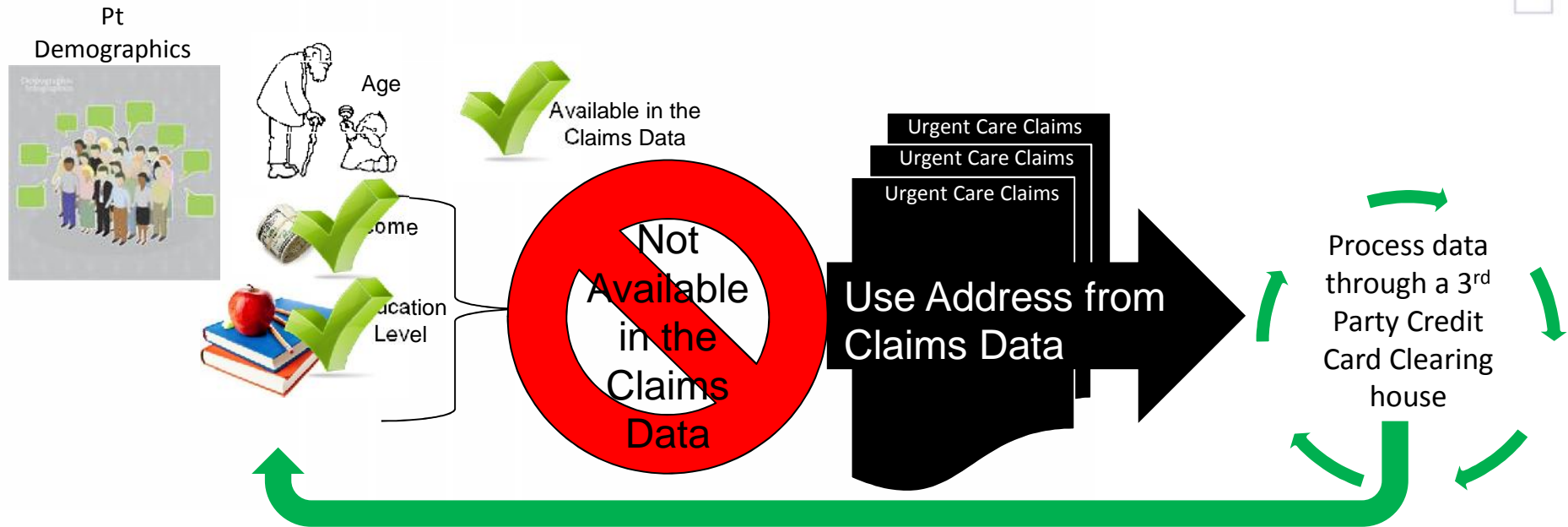
Business Development Question: Where are the best locations to develop urgent care centers?

Practical Example 2: Urgent Care Center Planning Methodology



Practical Example 2: Urgent Care Center Planning

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



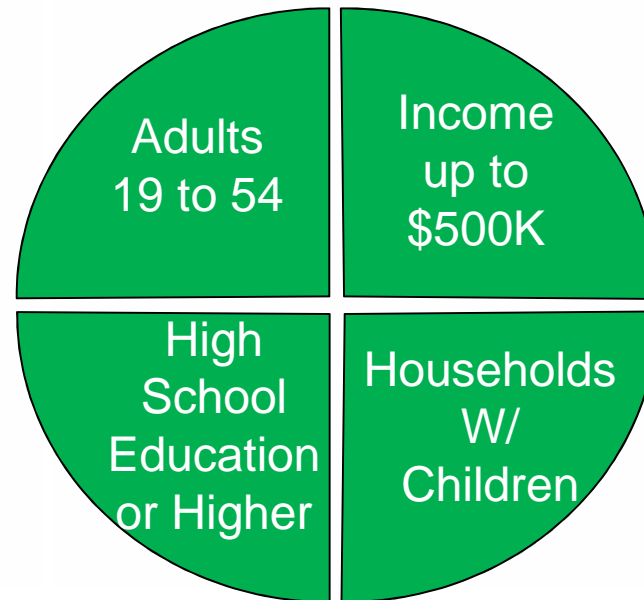
Secondary Research:
Indicates households with children
use Urgent Care



Households with Children

Practical Example 2: Urgent Care Center Planning

Create patient profile based on claims data.



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

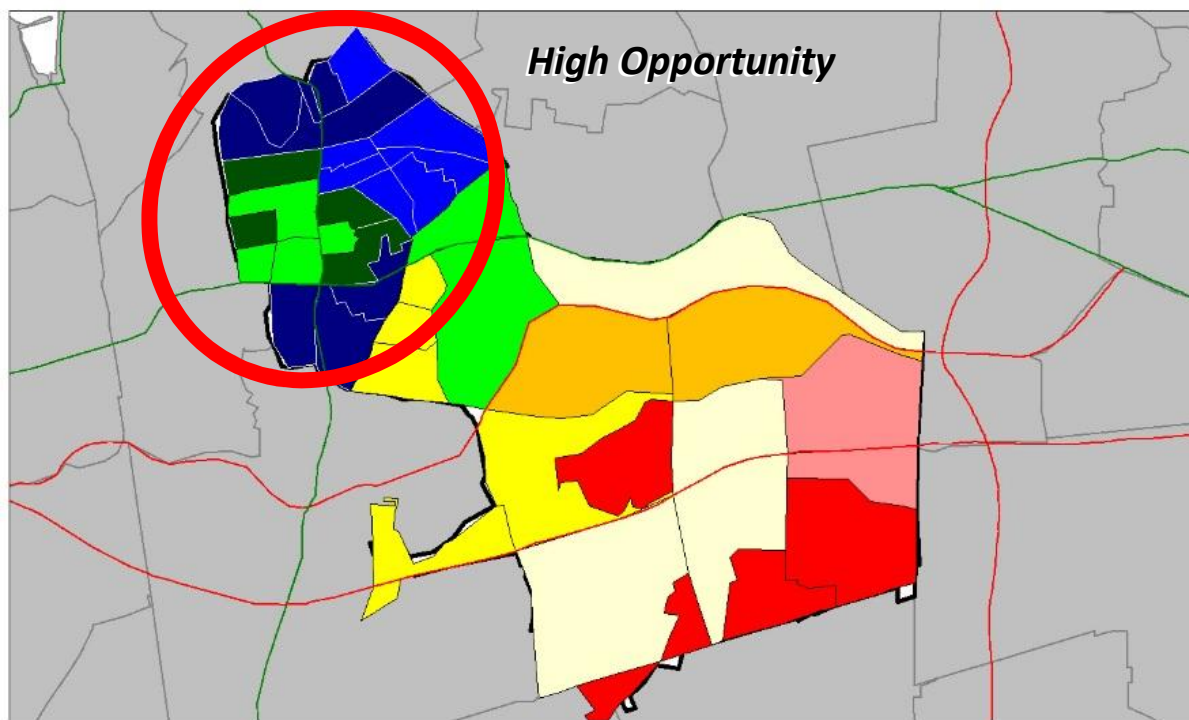
*There 932 Block Groups in Suffolk County;
A population of between 600-3,000 defines a block group.*





Practical Example 2: Urgent Care Center Planning



**At the Block Group Level
there are areas of opportunity**
**Zip Code of Opportunity
Population - 79K**



-  Hospitals
-  UCC

Greater Opp



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

Less Opp

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"

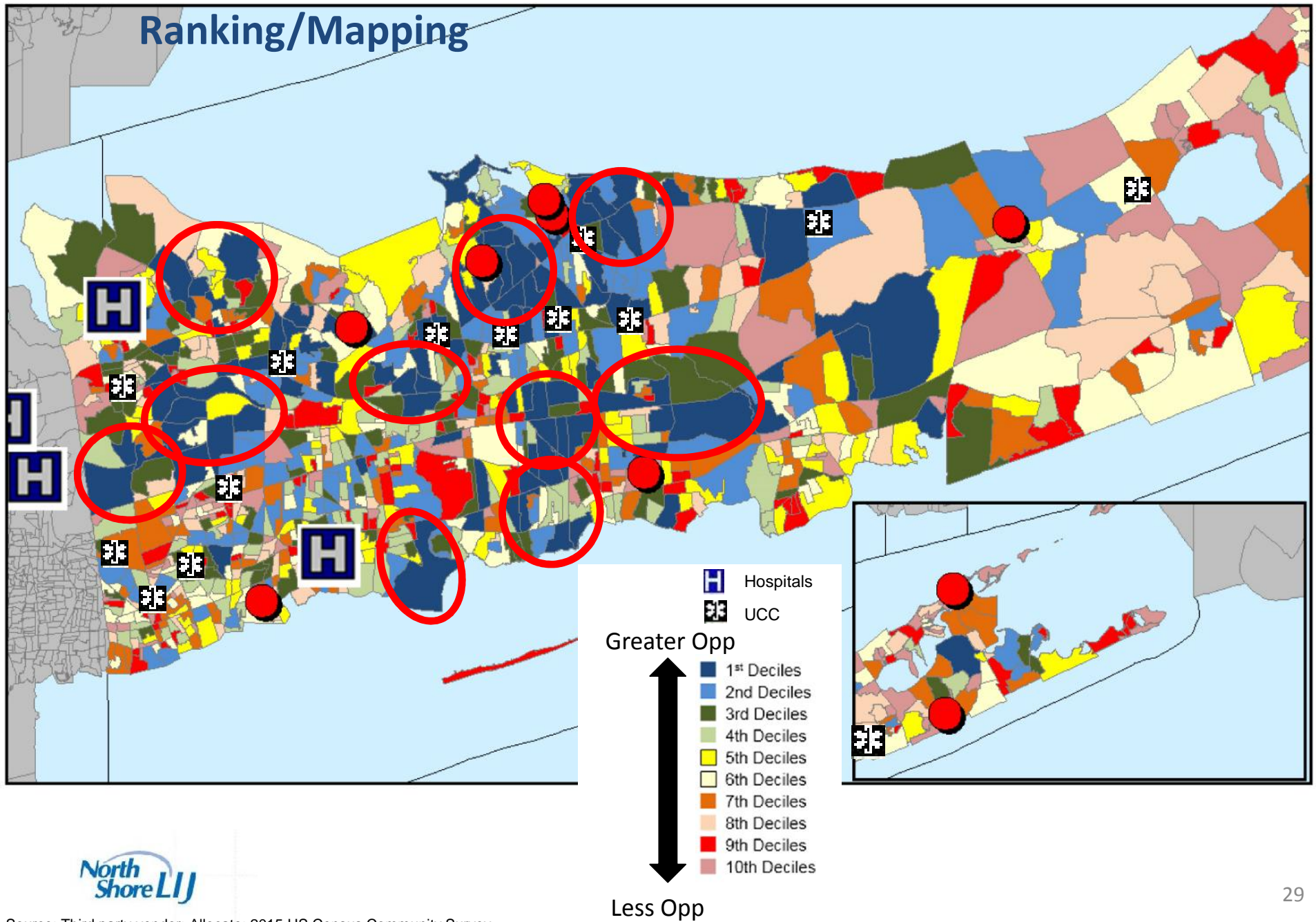
Step 2 & 3

	Data		Weighted Data				Combined Score
	Multiplier ->>		1	1	1	1	
	Block Group	Neighborhood	Ages 19-54	Ages 0-18	Avg. Income	High School +	
Decile 1	XXXXXXXXXXXX	Sunnyside	880	877	758	880	3,395
	XXXXXXXXXXXX	Abbey Road	864	799	744	873	3,280
Decile 2	XXXXXXXXXXXX	Bourbon	744	470	716	793	2,723
	XXXXXXXXXXXX	The Castro	750	413	799	761	2,723
Decile 3	XXXXXXXXXXXX	Dixie	362	476	831	747	2,416
	XXXXXXXXXXXX	Atlantic Coast	776	349	530	758	2,413
Decile 4	XXXXXXXXXXXX	Parliament	580	549	370	686	2,185
	XXXXXXXXXXXX	Primrose	687	332	524	642	2,185
• • • • • •							
Decile 9	XXXXXXXXXXXX	Red Rock	335	470	92	217	1,114
	XXXXXXXXXXXX	Bowery	60	79	843	130	1,112
Decile 10	XXXXXXXXXXXX	Tobacco Row	115	162	342	127	746
	XXXXXXXXXXXX	Thunder Alley	68	56	564	43	731

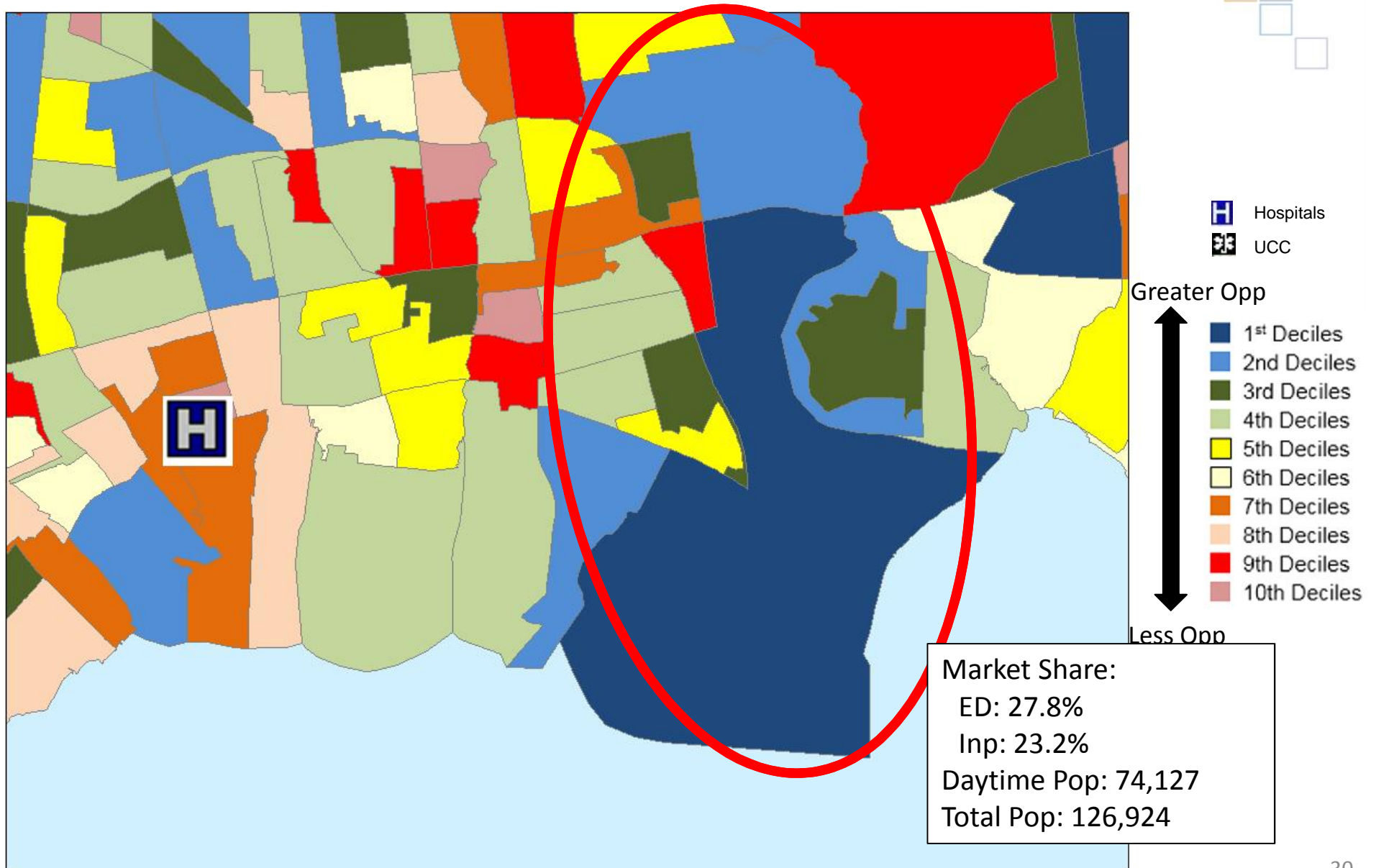


Practical Example 2: Urgent Care Center Planning

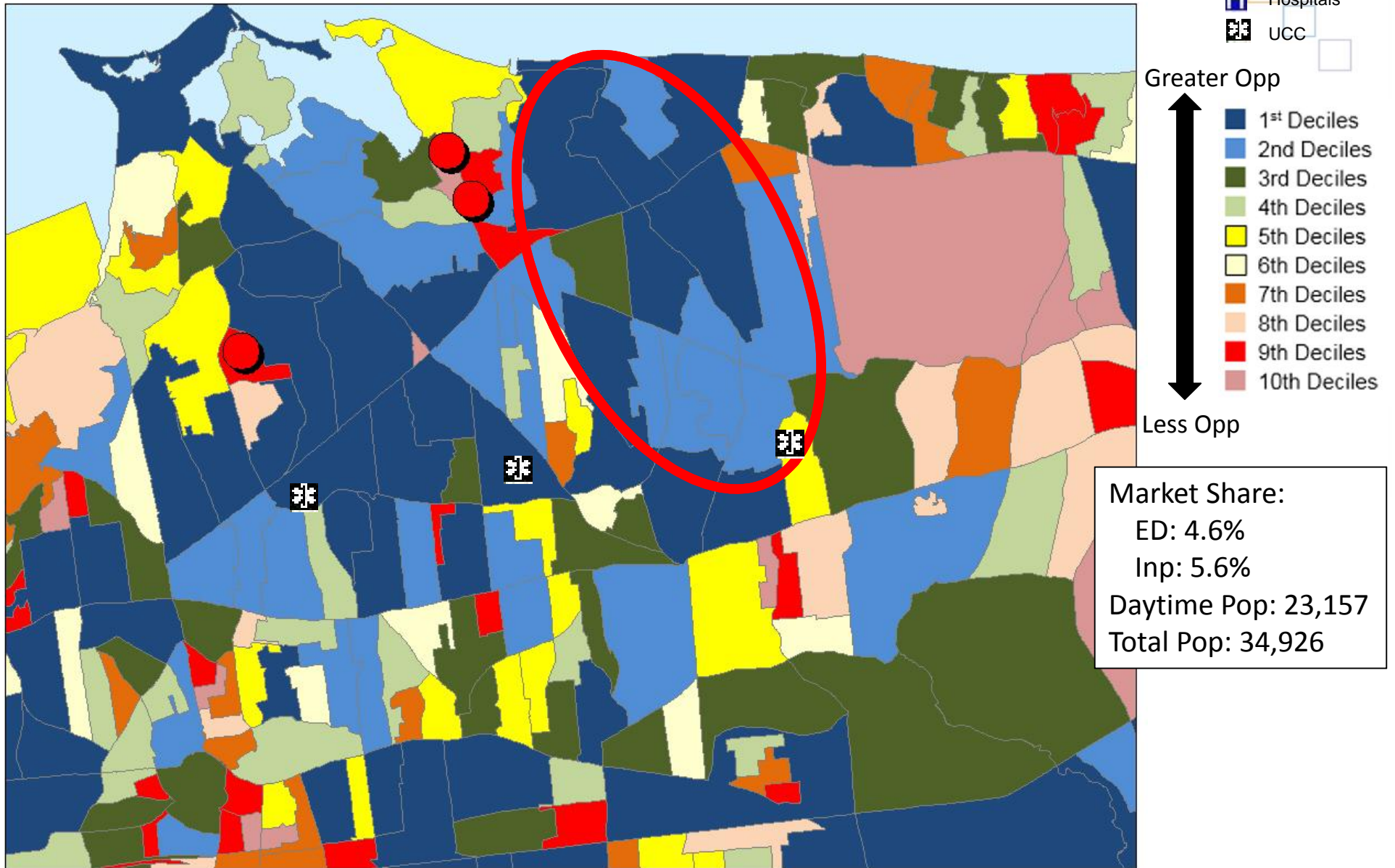
Ranking/Mapping



Practical Example 2: Urgent Care Center Planning Decant Hospital ED Volume



Practical Example 2: Urgent Care Center Planning Access Strategy



Practical Example 2: Urgent Care Center Planning

Resulting Plan

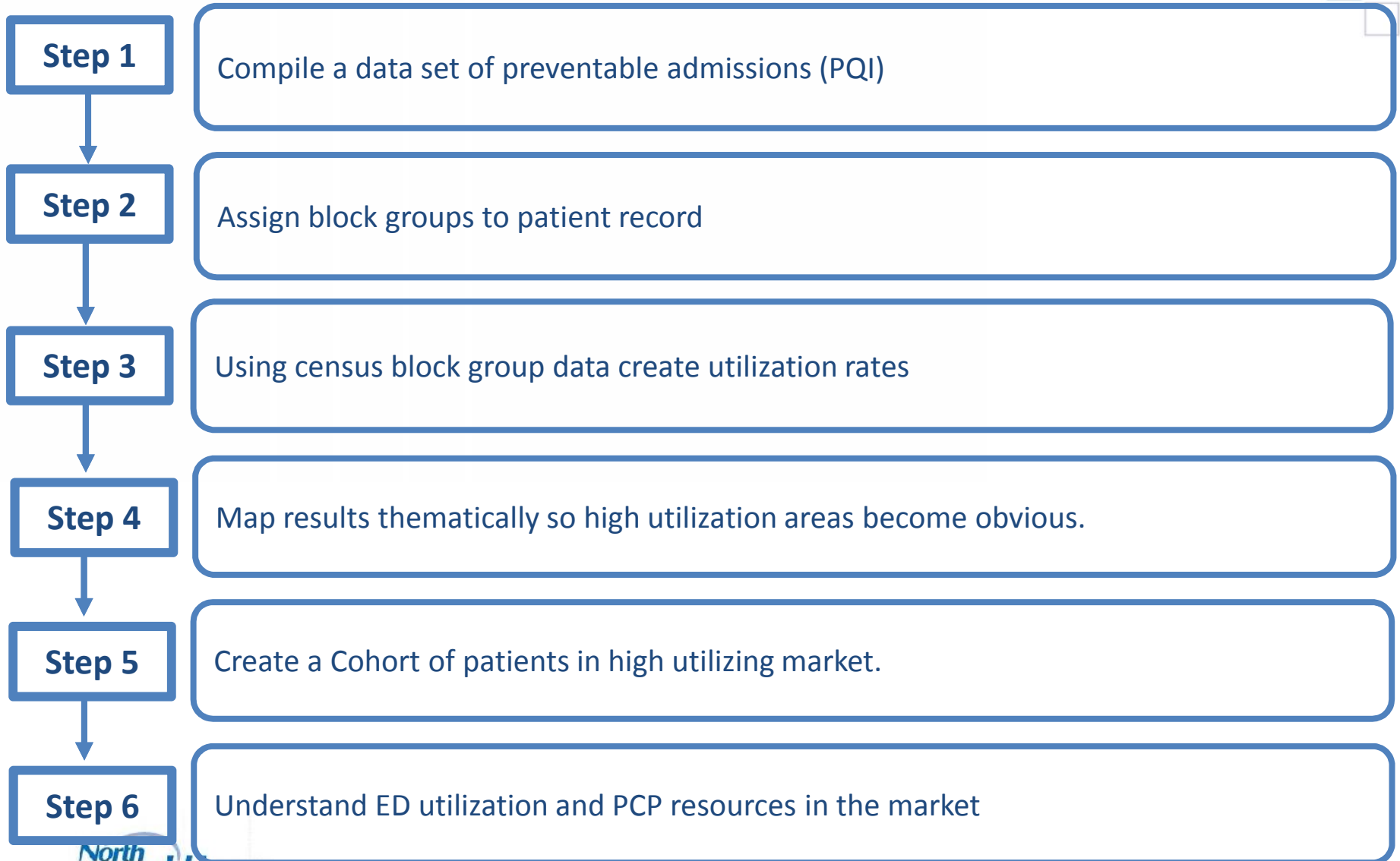


Practical Example 3: Preventable Admissions



Community Health Question: What are the communities that demonstrate high rates of preventable admissions?

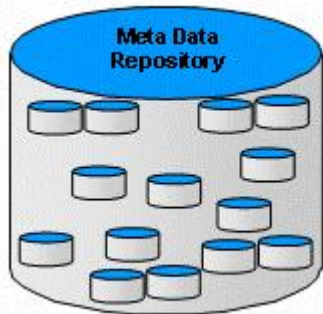
Practical Example 3: Ambulatory Strategy Addressing Preventable Admissions



Practical Example 3: Ambulatory strategy Addressing Preventable Admissions



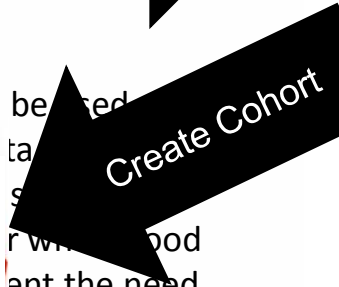
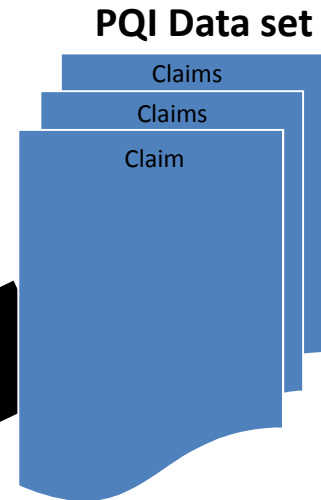
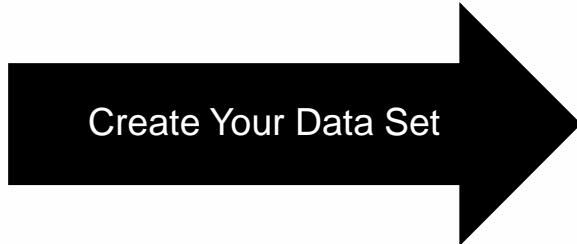
Medicaid Claims Database



- ✓ Year
- ✓ Market
- ✓ PQI Definition



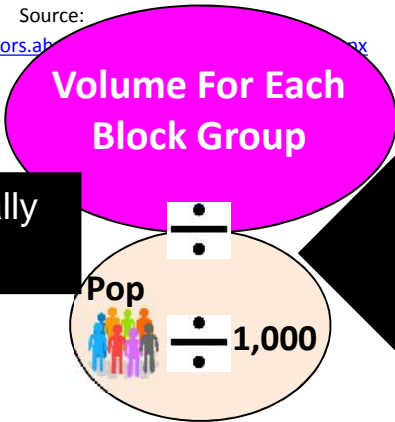
PQI's are a set of measures that can be used with hospital data to assess the quality of care for various conditions. Are they using the ER?



Geocode the data at the block group Level



Develop Use/rates

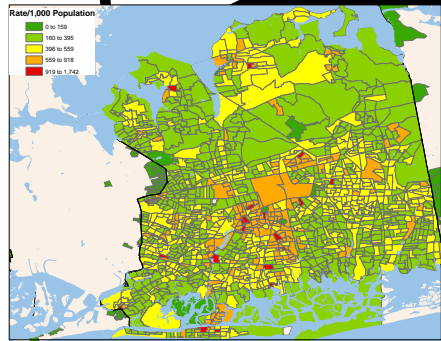


Thematically Map

What are the PQI types?



PCP resource?



Shore LIJ

Practical Example 3: PQI Detail



Agency for Healthcare Research and Quality
Advancing Excellence in Health Care

AHRQ Quality Indicators™

Acute PQI's

PQI 10 Dehydration Admission

PQI 11 Bacterial Pneumonia Admission

PQI 12 Urinary Tract Infection Admission

Circulatory PQI's

PQI 07 Hypertension Admission

PQI 08 Heart Failure Admission

PQI 13 Angina Without Procedure 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

Respiratory PQI's

PQI 05 COPD or Asthma in Older Adults

PQI 15 Asthma in Younger Adults

Pediatric PQI's

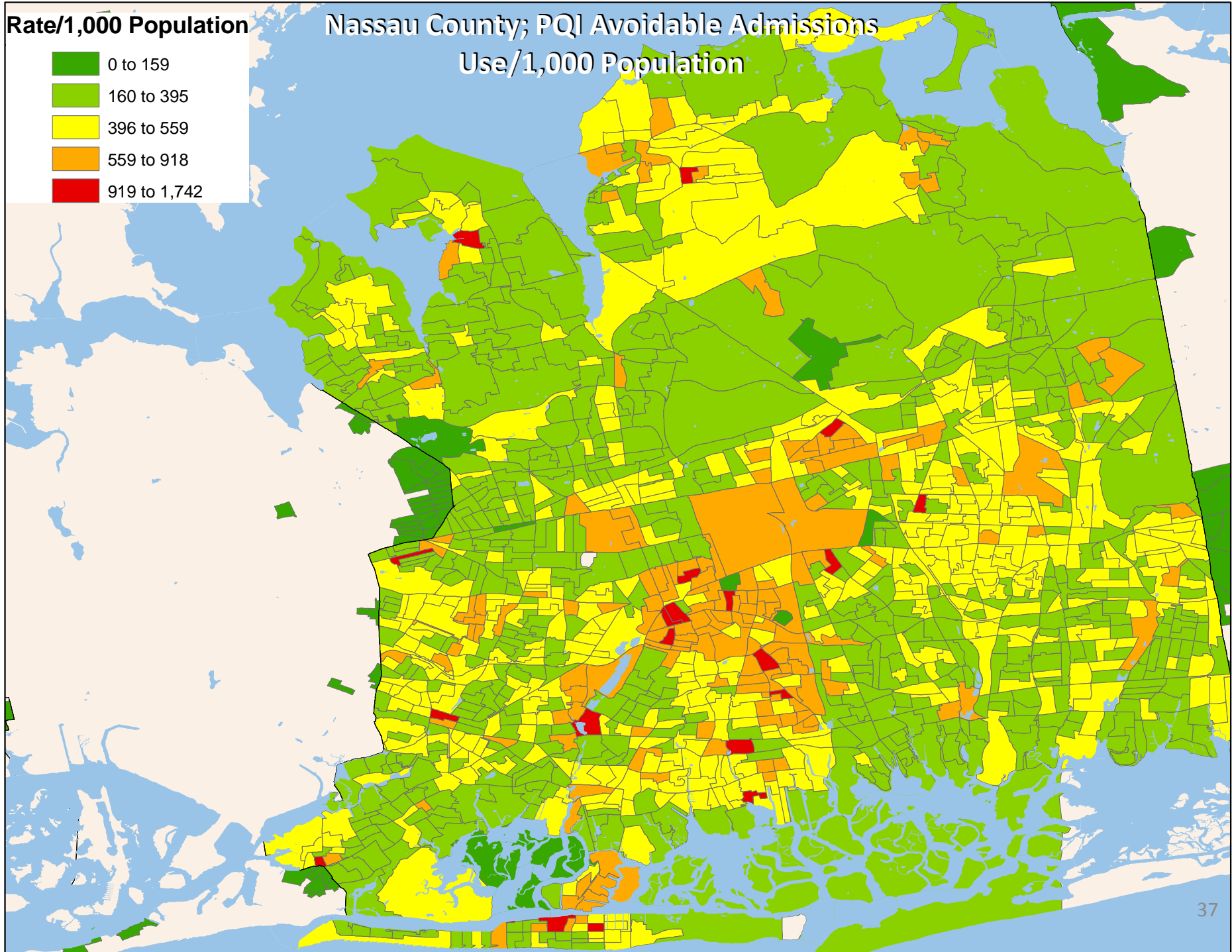
PQI 02 Perforated Appendix

PQI 09 Low Birth Weight

Rate/1,000 Population

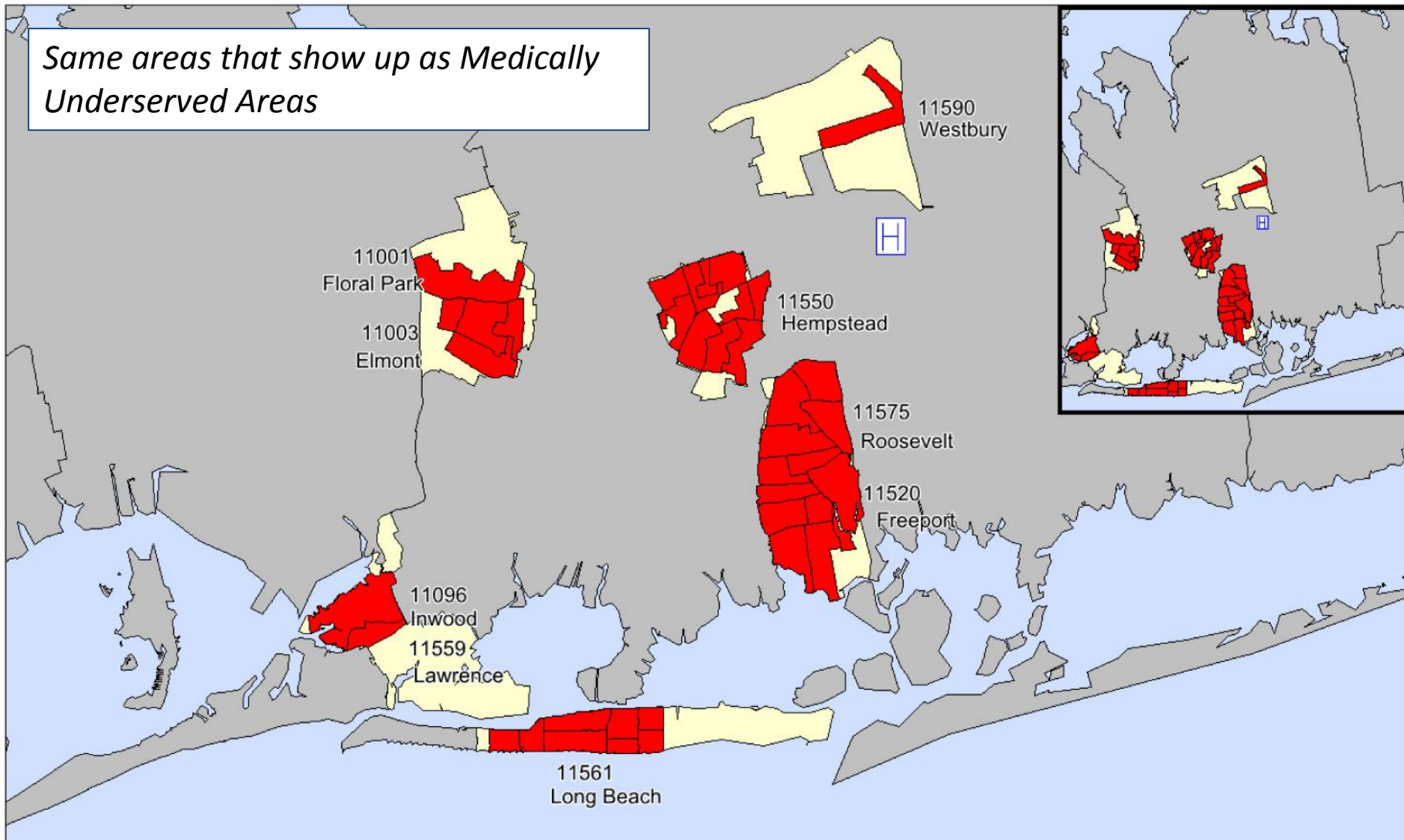
- 0 to 159
- 160 to 395
- 396 to 559
- 559 to 918
- 919 to 1,742

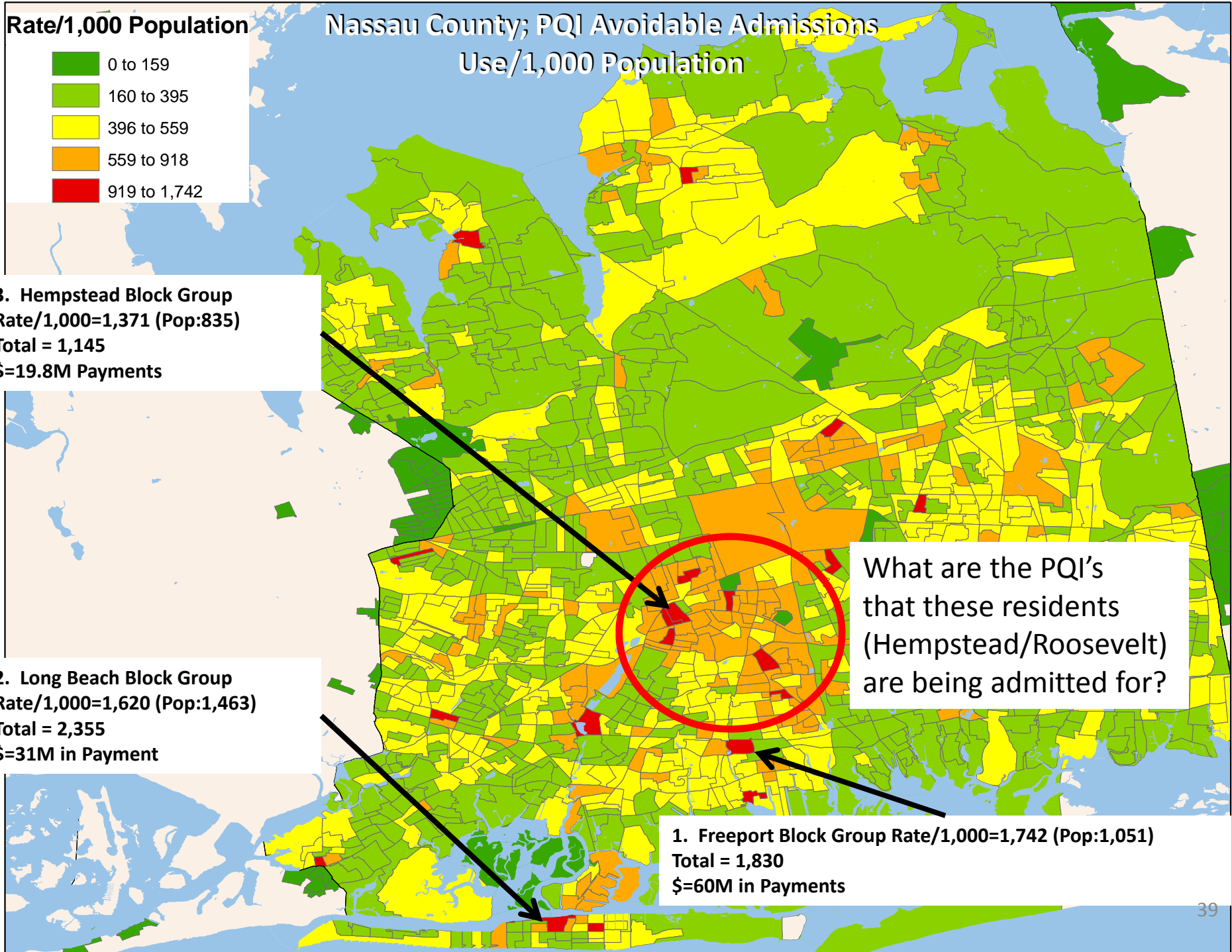
**Nassau County; PQI Avoidable Admissions
Use/1,000 Population**





Nassau County Medically Underserved Areas (MUA)





Rate/1,000 Population

- 0 to 159
- 160 to 395
- 396 to 559
- 559 to 918
- 919 to 1,742

Nassau County; PQI Avoidable Admissions Use/1,000 Population

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

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

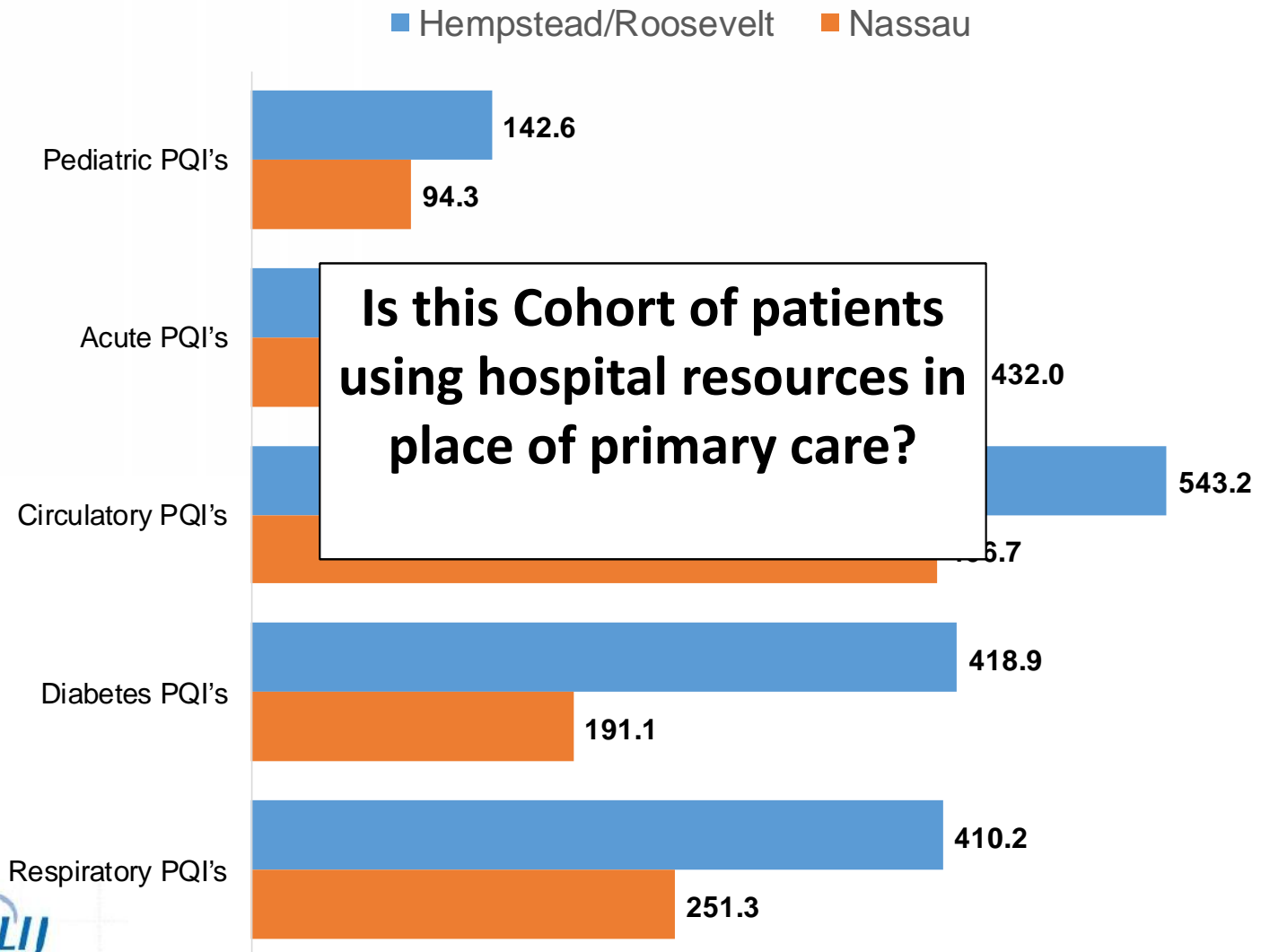
1. Freeport Block Group Rate/1,000=1,742 (Pop:1,051)
 Total = 1,830
 \$=60M in Payments

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



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)

ED Treat & Release Rate

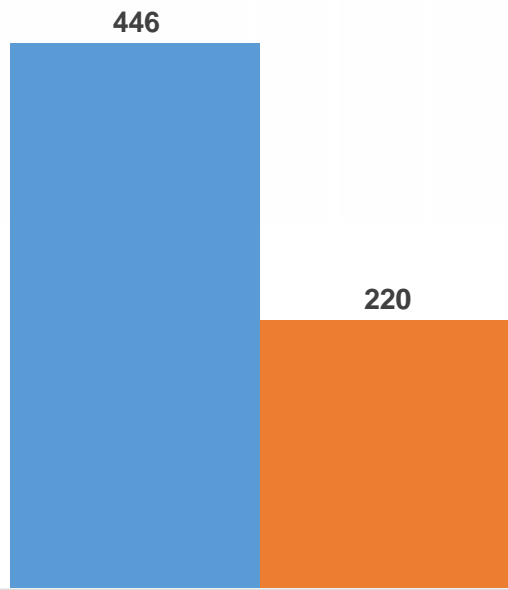
Total PQI Rate

PCP's per 1,000 Pop

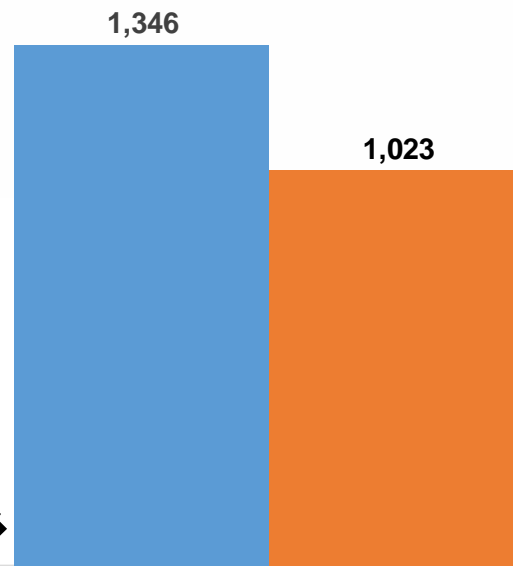
■ Hempstead/Roosevelt ■ Nassau

■ Hempstead/Roosevelt ■ Nassau

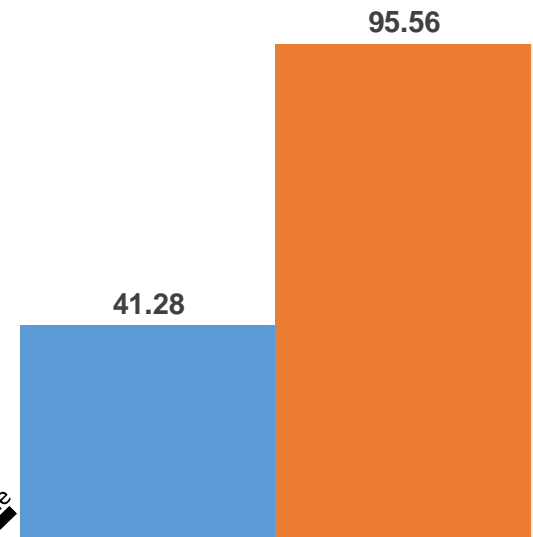
■ Hempstead/Roosevelt ■ Nassau



Broken Scale



Broken Scale



ED Treat & Release

PQI

PCP's Rate



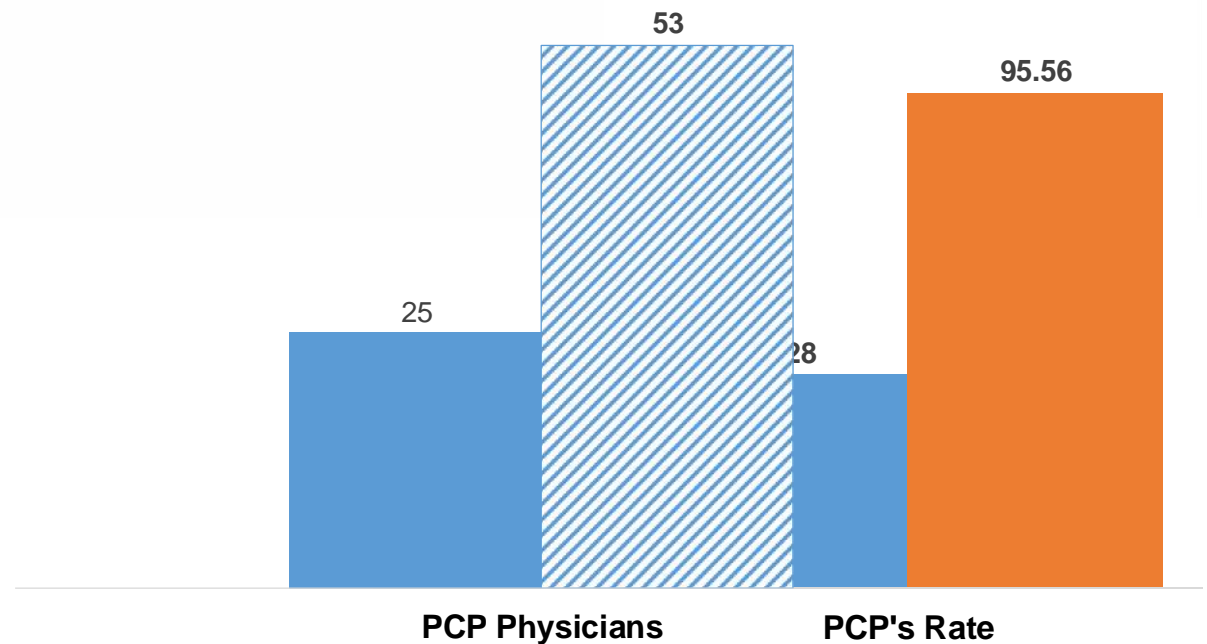
Practical Example 3:

Ampl

The data suggest that this market is using the hospital inpatient services and Emergency Department as it's primary Care.

Hempstead/Roosevelt Market
PCP's per 1,000 Pop
Primary Care Physician

■ Supply ■ Demand ■ Hempstead/Roosevelt ■ Nassau



Practical Example 3: Ambulatory strategy Addressing Preventable Admissions

Strategy to Improve the health of this market



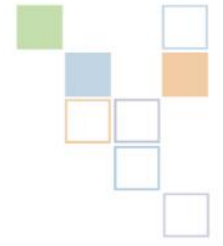
Deploying Mobile Units



**Managing our at Risk
Contracts**



Crowd Sourcing Data: Social Media



The Most Important Data Collection Tool Costs ~ \$1.50

