Knoxville Community Update (BBBHC)
September 24th, 2015

Community Report

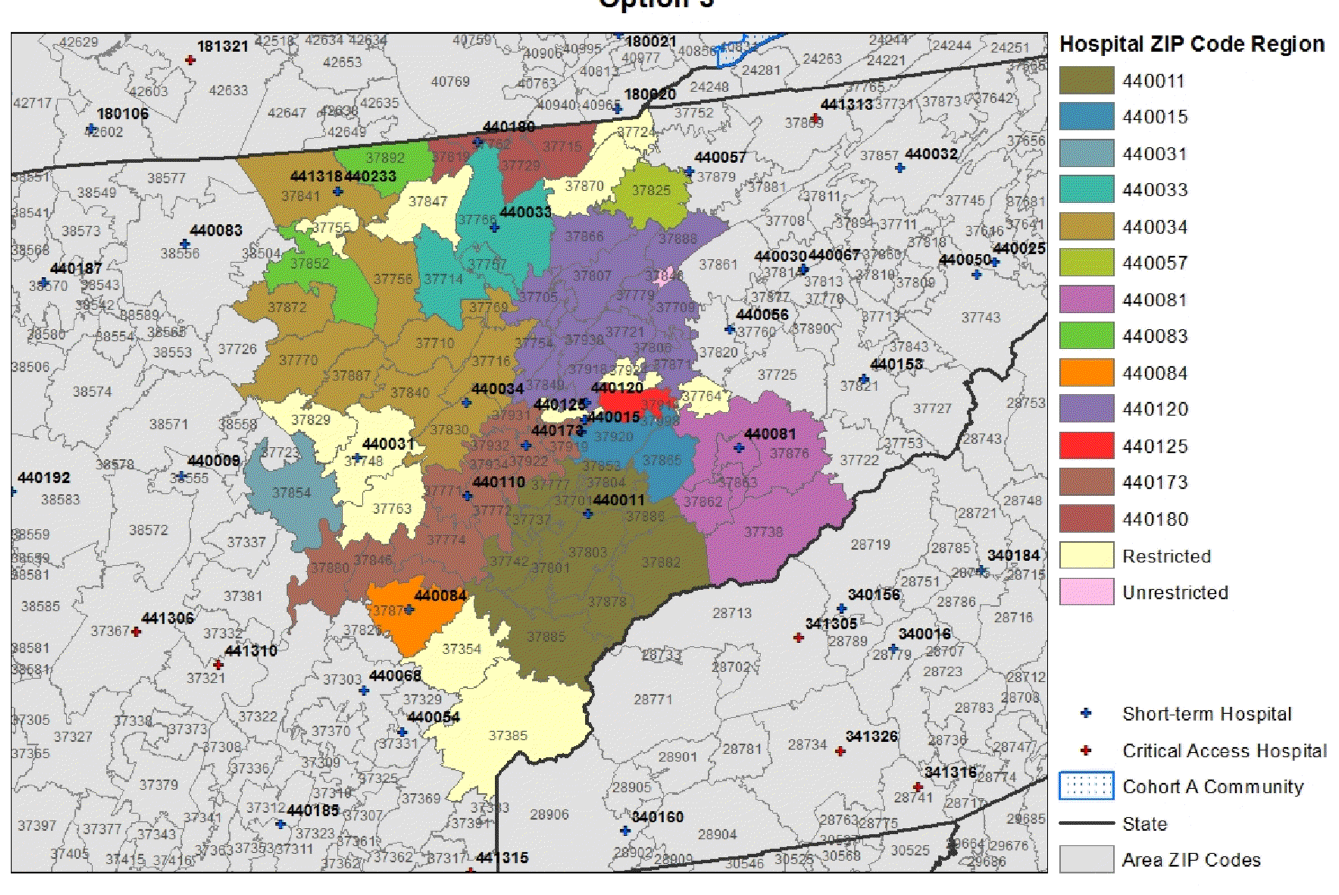
Community-Based Readmission Rates

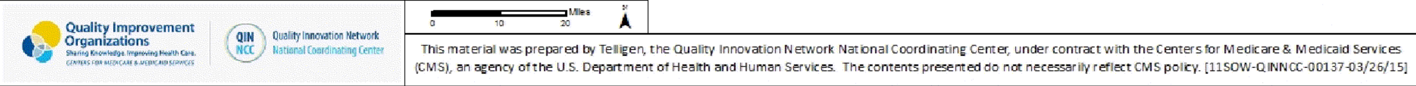
Community readmission rates differ from traditional hospital-based readmission rates. A readmission event is attributed to the residence of the beneficiary, not the hospital. These events are compiled at the **ZIP-code level**.

Rates are expressed using the geographic boundaries established by the Dartmouth Atlas Project—the Health Referral Region (HRR) and its smaller subunit, the Hospital Service Area (HSA)—as the units of analysis. The HRR rate is expressed as readmission events per 1,000 Medicare beneficiaries.

In comparison to the more familiar risk-standardized readmission rate used by the Centers for Medicare & Medicaid Services (CMS) and reported publicly via the Hospital Compare website, **the community-based readmission rates count how many times (not if) the individual was readmitted within 30-day windows**.

Knoxville Community Zip Code Area

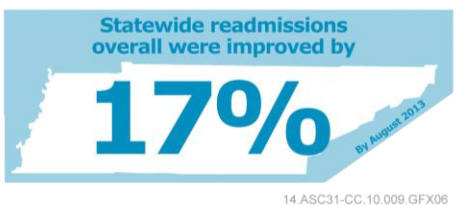




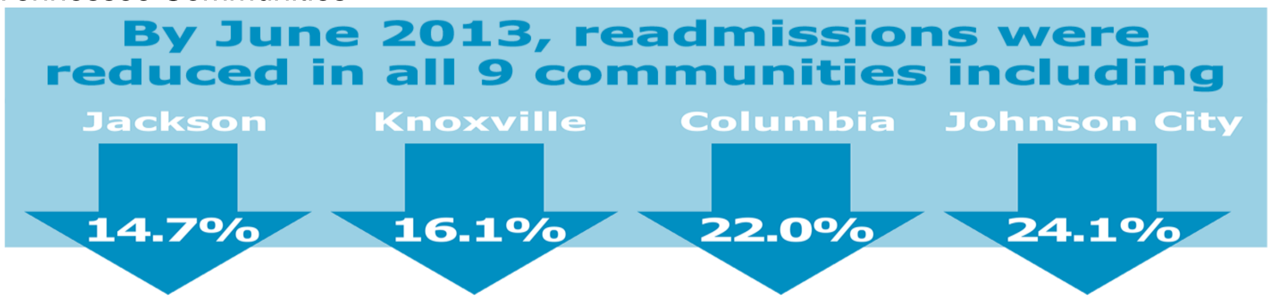
This material was prepared by Telligen, the Quality Innovation Network National Coordinating Center, under contract with the Centers for Medicare & Medicaid Services (CMS), an agency of the U.S. Department of Health and Human Services. The contents presented do not necessarily reflect CMS policy. [11SOW-QINNCC-00137-03/26/15]

Progress Timeline

Tennessee Statewide Readmission Success (2013)



Tennessee Communities



Dollars Saved by improving readmissions!

2015 – 2019 Goals **Tennessee Statewide Readmission** **Q4 2014 13.5%**

- Reduce Medicare hospital admission and readmission rates by 20 percent by 2019
- Increase patients with Medicare number of nights spent at home post discharge by 10 percent
- Reduce adverse drug events (ADEs) resulting from uncoordinated transitions of care

National
Quarterly Readmissions per 1,000 Beneficiaries

Readmissions per 1,000

18.5
17.5
16.5
15.5
14.5
13.5
12.5
11.5
10.5

Start of 11th SOW

Q1 2009 Q2 2009 Q3 2009 Q4 2009 Q1 2010 Q2 2010 Q3 2010 Q4 2010 Q1 2011 Q2 2011 Q3 2011 Q4 2011 Q1 2012 Q2 2012 Q3 2012 Q4 2012 Q1 2013 Q2 2013 Q3 2013 Q4 2013 Q1 2014 Q2 2014 Q3 2014 Q4 2014

Observed   Seasonally Adjusted

This material was prepared by Telligen, the Quality Innovation Network National Coordinating Center, under contract with the Centers for Medicare & Medicaid Services (CMS),an agency of the U.S. Department of Health and Human Services. The contents presented do not necessarily reflect CMS policy. [11SOW-QINNCC-00208-05/08/15]

Tennessee

Quarterly Readmissions per 1,000 Beneficiaries (Seasonally Adjusted)

National, State, State Cohort A, State Cohort B (where applicable), and Community

Start of 11th SOW

Readmissions per 1,000

22
21
20
19
18
17
16
15
14
13
12
11
10

Q1 2009, Q2 2009, Q3 2009, Q4 2009, Q1 2010, Q2 2010, Q3 2010, Q4 2010, Q1 2011, Q2 2011, Q3 2011, Q4 2011, Q1 2012, Q2 2012, Q3 2012, Q4 2012, Q1 2013, Q2 2013, Q3 2013, Q4 2013, Q1 2014, Q2 2014, Q3 2014, Q4 2014

National
State
State Cohort A
State Cohort B
Columbia
Cookeville
Nashville

This material was prepared by Telligen, the Quality Innovation Network National Coordinating Center, under contract with the Centers for Medicare & Medicaid Services (CMS),an agency of the U.S. Department of Health and Human Services. The contents presented do not necessarily reflect CMS policy. [11SOW-QINNCC-00208-05/08/15]

Tennessee
State
Acute Care Encounters per 1,000 Beneficiaries

Start of 11th SOW

Encounters per 1,000

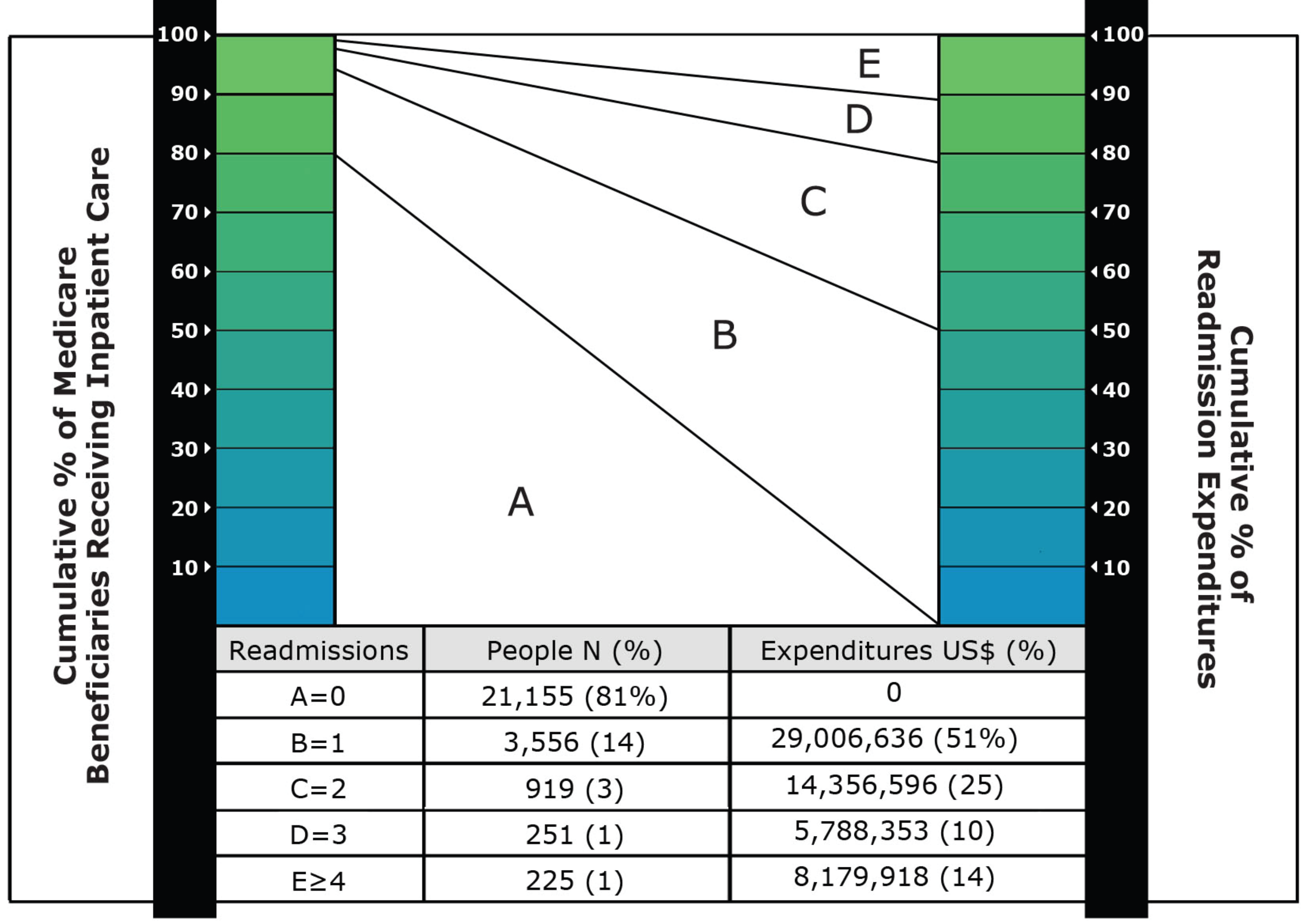
125
120
115
110
105
100
95
90
85
80
75
70
65
~
20
15
10

Q1 2009 Q2 2009 Q3 2009 Q4 2009 Q1 2010 Q2 2010 Q3 2010 Q4 2010 Q1 2011 Q2 2011 Q3 2011 Q4 2011 Q1 2012 Q2 2012 Q3 2012 Q4 2012 Q1 2013 Q2 2013 Q3 2013 Q4 2013 Q1 2014 Q2 2014 Q3 2014 Q4 2014

Observation Stays   ED Visits   Admissions

This material was prepared by Telligen, the Quality Innovation Network National Coordinating Center, under contract with the Centers for Medicare & Medicaid Services (CMS),an agency of the U.S. Department of Health and Human Services. The contents presented do not necessarily reflect CMS policy. [11SOW-QINNCC-00208-05/08/15]

Because the methodology used to calculate the community rate of readmission is highly sensitive to individuals with high personal rates of readmissions, successful outreach to a relatively smaller number of high utilizing patients can result in a significant decrease in the rate of readmission.

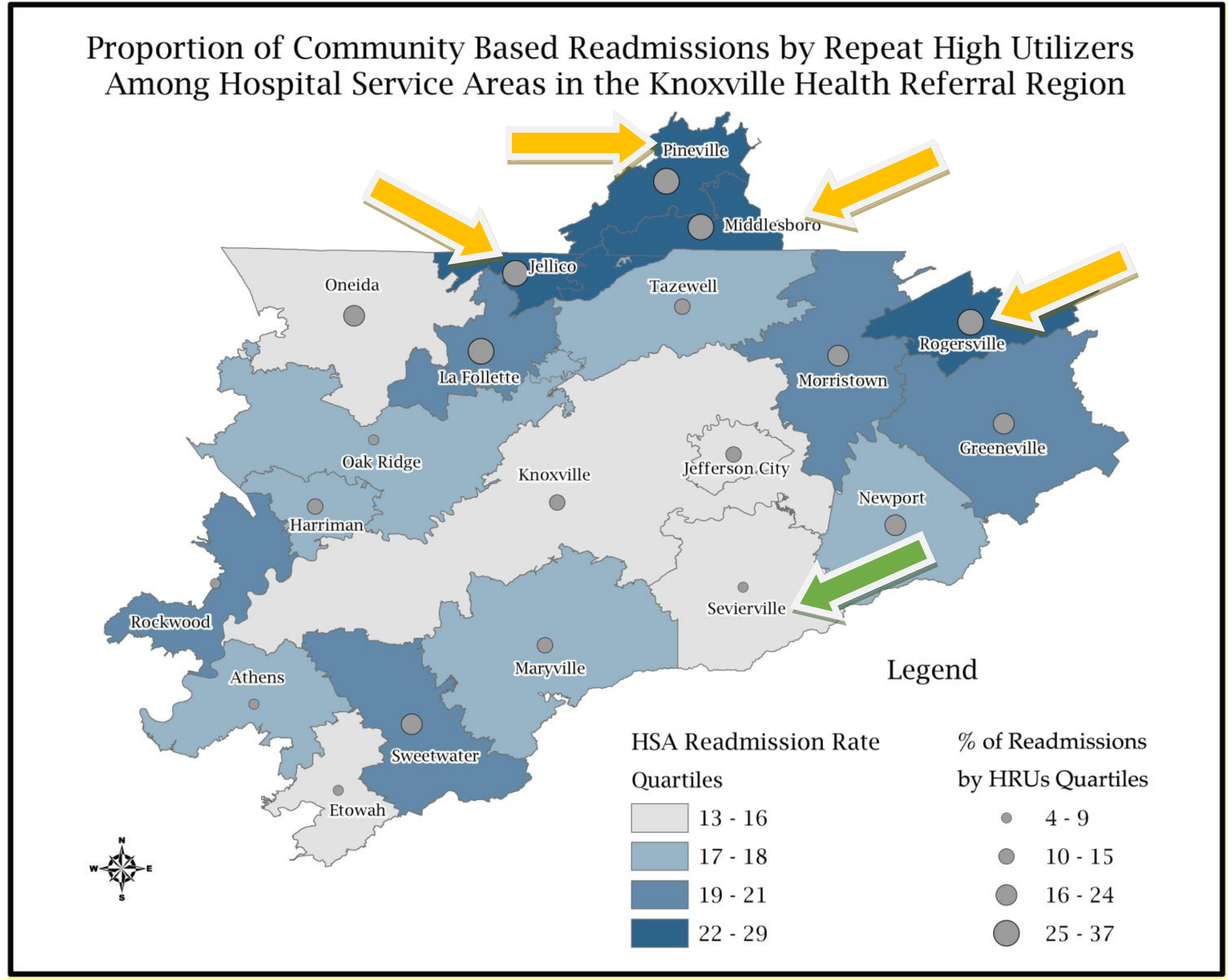


Readmissions	People N (%)	Expenditures US$ (%)
A=0	21,155 (81%)	0
B=1	3,556 (14)	29,006,636 (51%)
C=2	919 (3)	14,356,596 (25)
D=3	251 (1)	5,788,353 (10)
E≥4	225 (1)	8,179,918 (14)

2010 Knoxville HRR Readmissions Expenditures

Strategies

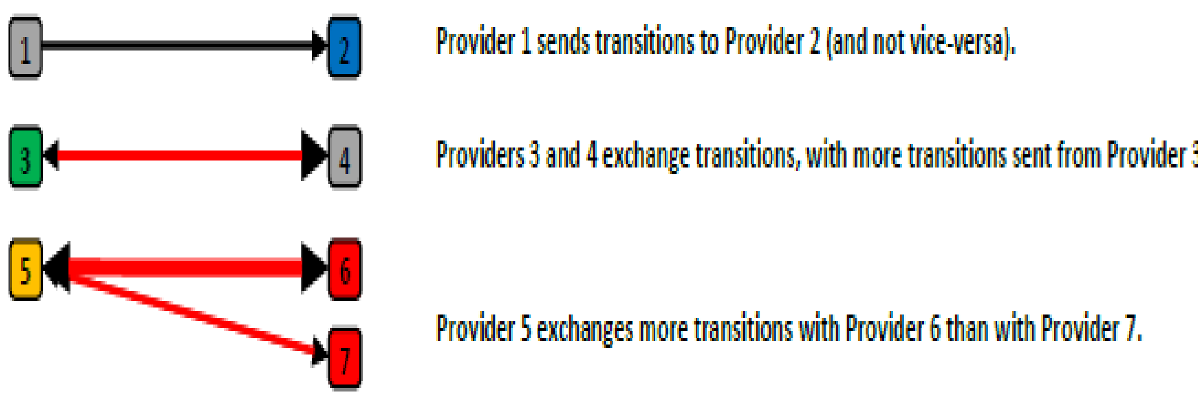
Spatial Analysis (SA)



- Using **Spatial Analysis** to explore the relationship between the rate of community-based readmissions and the proportion of readmissions that can be attributed to HRUs (High Readmission Utilizers) has important implications for developing interventions.
- The graduated dot symbol represents the proportion of all readmissions that are attributed to HRUs (4+readmissions).
- Rogersville, Middlesboro, Pineville, and Jellico HSAs have both high readmission rates and large proportions of readmissions due to HRUs.
- Readmission rates may be dramatically reduced by allocating resources to a target population likely to readmit multiple times.
- Also of importance is looking at areas like Sevierville that have a low overall readmission rate and a low proportion of readmissions by HRUs to identify potential factors that can be attributed to positive patterns of inpatient utilization.

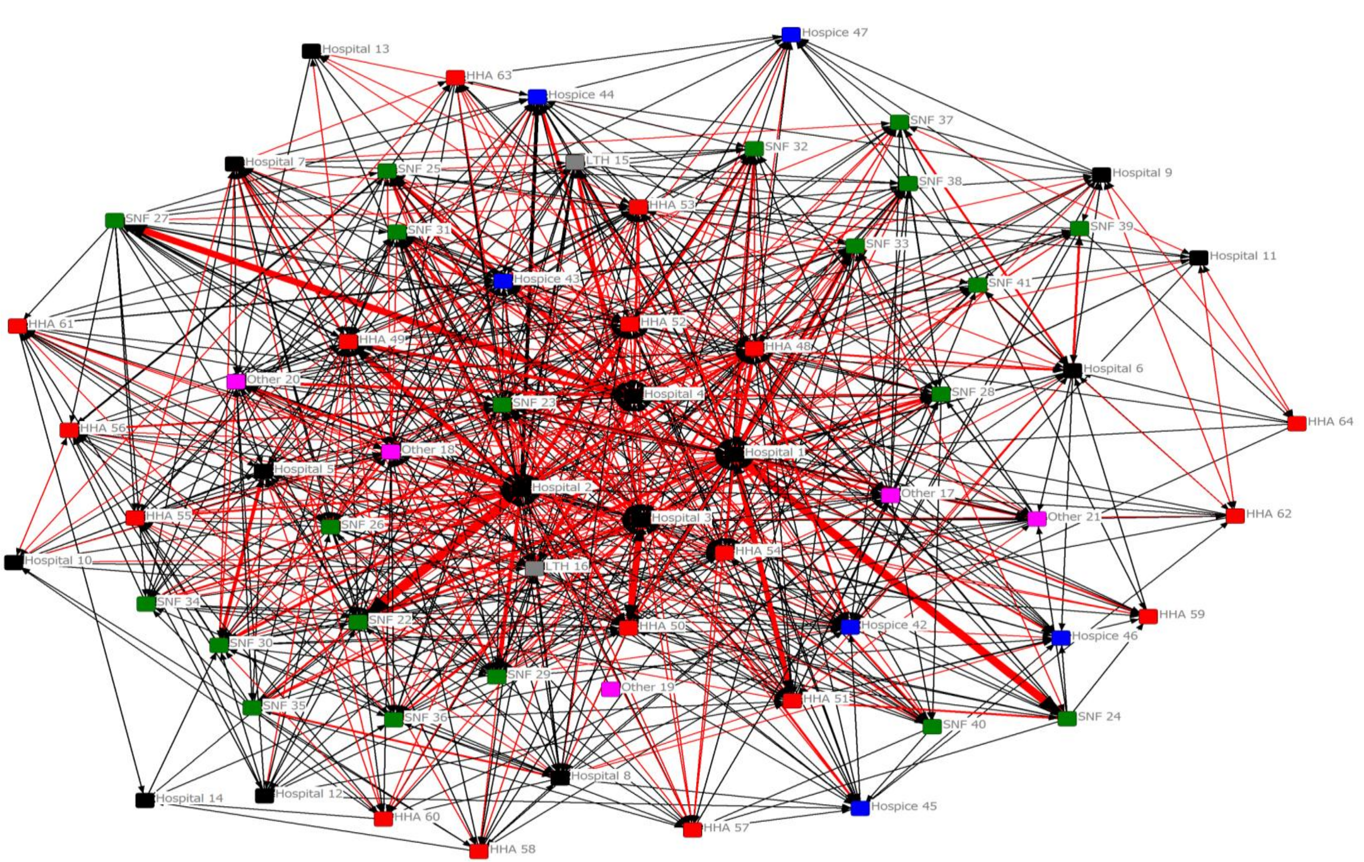
Social Network Analysis (SNA)

SNA characterizes relationships among actors in a network.
SNA enables the user to visualize the network as a diagram of interconnected nodes.
SNA can inform intervention strategies by identifying the sender-receiver relationships that account for a large proportion of the community's transitions.

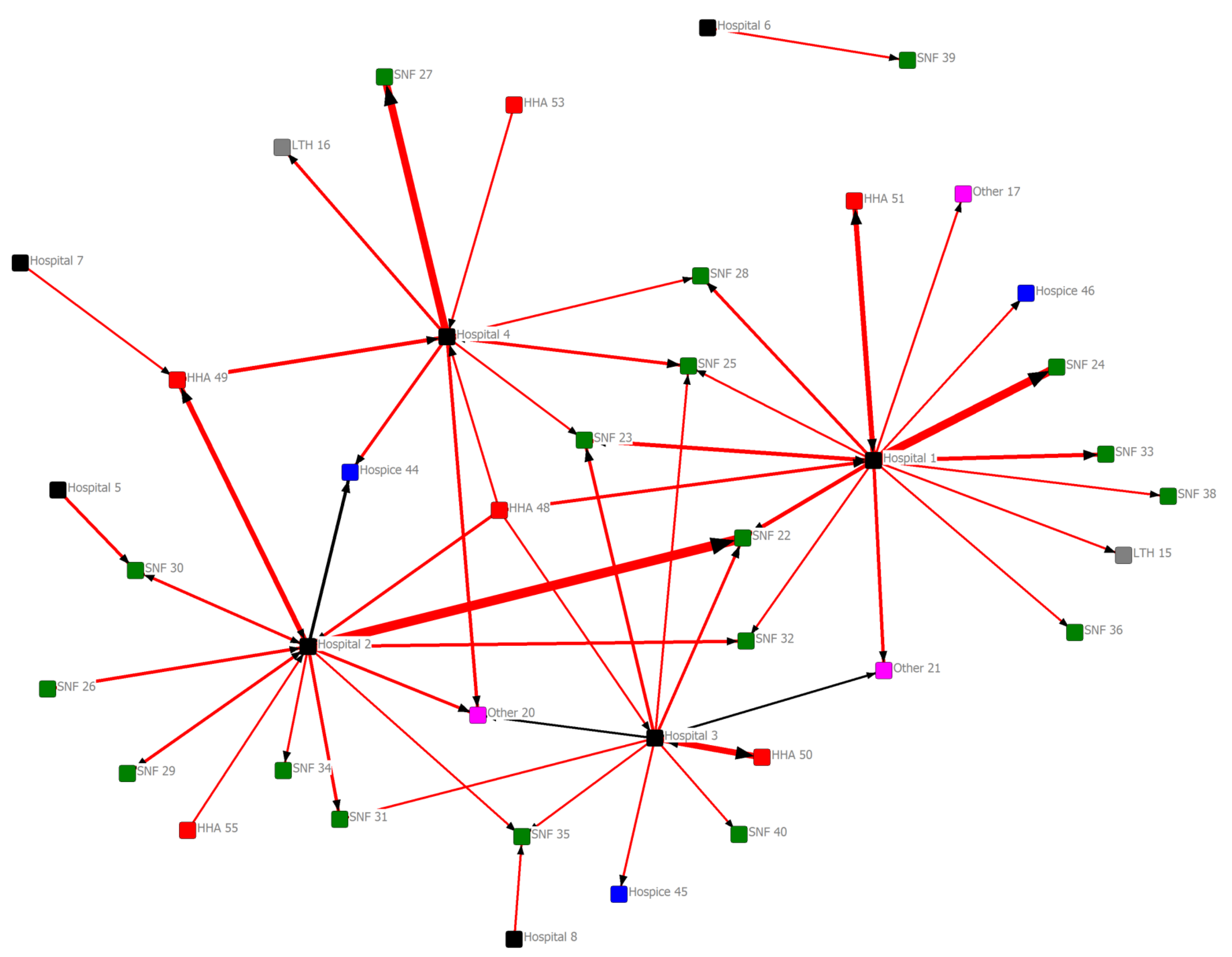


TN_08May2012_06

All providers (CY 2011). Arrows indicate one or more transitions shared.



Providers connected by a minimum of 30 transitions (CY 2011)



Key	Provider	Zip Code
Hospital 1	Tennova Healthcare	37917
SNF 24	Tennova Healthcare - TCU	37917
HHA 51	Tennova Home Health	37920
Hospital 2	Parkwest Medical Center	37923
SNF 22	NHC Healthcare, Farragut	37922

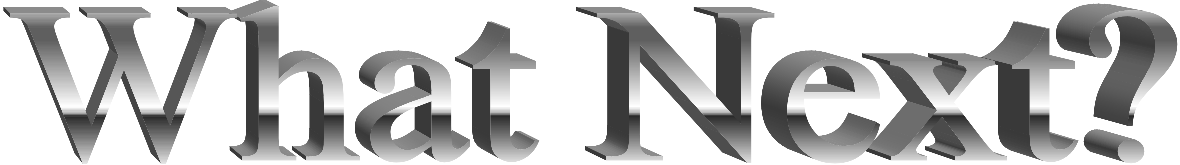
So What?

Spatial Analysis

- **Asks ‘where are the high utilizers?’**
- **Focus readmissions work on the ‘few’ that make a BIG difference**
- **Allows targeted interventions**

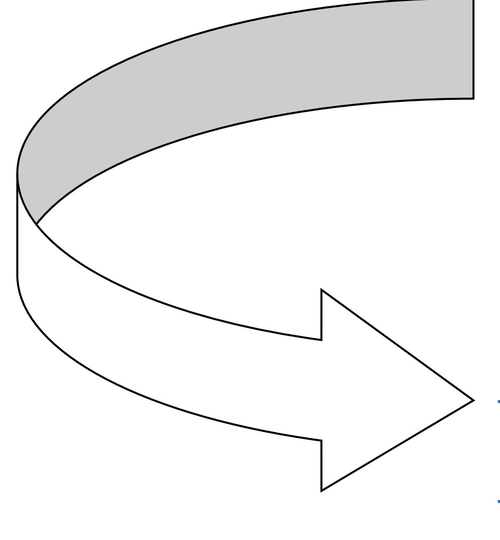
Social Network Analysis

- **Asks ‘who are providers/settings in the transition of care?’**
  - **‘Where are the patients going and coming from?’**
- **Focus readmissions work on key players in the game**
- **Allows relationship building and collaboration**

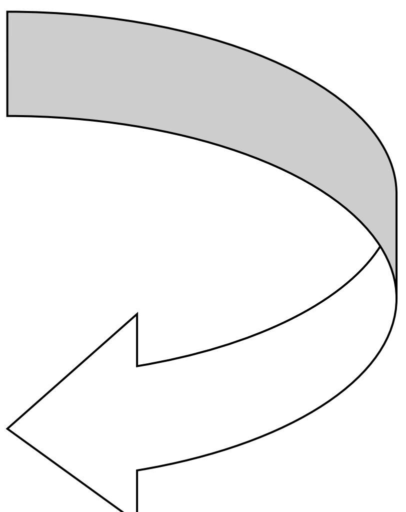


SWOT Analysis

Strengths	Weaknesses	Opportunities	Threats



Interventions



Results