



## Managing Well Being by Controlling Health Outcomes

# Presentation Overview

- The Existential Problem
- The Prime Directive
- About the National Minority Quality Forum
- Patient Advocacy Learning Communities

# The Existential Problem

# The Extinction Crisis



Our planet is now in the midst of its sixth mass extinction of plants and animals. Scientists estimate that 30 to 50 percent of all life on earth will be headed towards extinction in thirty-years.

# Its not Just About Climate Change

Stephen Hawking believes we have 100 years left on Earth – and he's not the only one.

He recommends humans find a new planet to live on within 100 years if humanity is to survive.

This need to migrate is being driven by climate change, overdue asteroid strikes, epidemics, population growth and growing scarcities of natural resources.

# The Health Care Manhattan Project

# The Postulating the Equilibrium

The existence of an equilibrium of conditions within whose boundaries human life has no predictable limit. While this equilibrium is maintained, sustained wellness is achievable and death is delayed.

I am also suggesting that this equilibrium is quantifiable and that by quantifying it, we can know it and one day achieve it.

# Governance and Well Being

# Preservation of Life as a Fundamental Principle

In his first draft of the Declaration of Independence Thomas Jefferson wrote: “We hold these truths to be sacred & undeniable; that all men are created equal & independent, that from that equal creation they derive right inherent & inalienable, among which are the preservation of life, & liberty, & the pursuit of happiness; that to secure these ends, governments are instituted among men, deriving their just powers from the consent of the governed...



# Conservation of Life is a Prime Directive of Government

In the final draft of the declaration preservation of life was shortened to life, but the founding principle that Jefferson articulated survived in that one word. Government was organized to conserve life and that life was equal, inherent & inalienable to each individual



# The Core Measurement

Life Expectancy From Birth by Census Tract							
Mean	N	1st Pctl	5th Pctl	10th Pctl	Lower Quartile	Median	90th Pctl
78.3	65,662	<b>68</b>	<b>71.5</b>	<b>73.1</b>	<b>75.8</b>	78.5	83.1

# About NMQF

# Community Health

Community health is a product of collaborative networks, where all members in a society contribute to and inform population health.

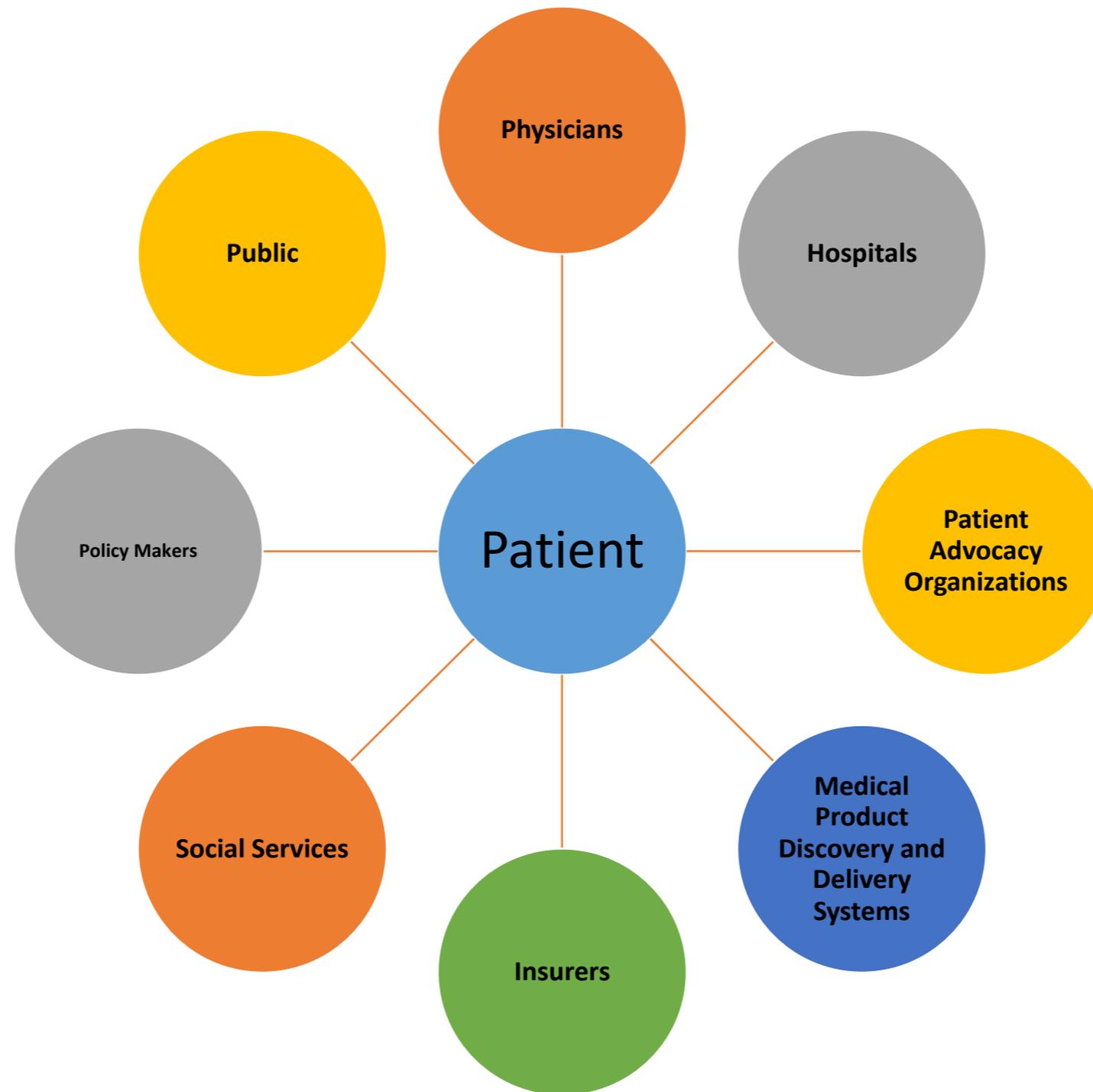
Not all of the members in these networks are health workers. Most of us are unaware that they play any active role, yet each has an effect on and a stake in the community's health.



# Community-Based Collaborative Care Network

Evidence Based Care

=



= Patient Outcome

# Measuring Network Functions

These collaborative networks can produce optimal or suboptimal results.

They can be optimized so they deliver effective medical care across diverse populations.

Performance measures can be developed that report on how well these networks are functioning collectively or well individual component is operating.

# Health Disparities as Suboptimal Performance

Health Disparities are a function of community-based collaborative networks operating suboptimally for a specific cohort.

It could be a collective malfunction or the dysfunction could reside in some component part.

# Optimizing Community Collaboratives

# The National Minority Quality Forum (NMQF)

Founded in 1998, NMQF is a non-profit Washington, D.C.-based, health care research and education organization whose mission is to measure the performance of community-based collaborative networks so as to optimize their ability to control health outcomes for the communities they serve.

# The National Minority Quality Forum (NMQF)



The Forum has developed a comprehensive database comprised of over **5 billion** patient records, which it uses to define disease prevalence, costs and outcomes for demographic subpopulations at the zip code level

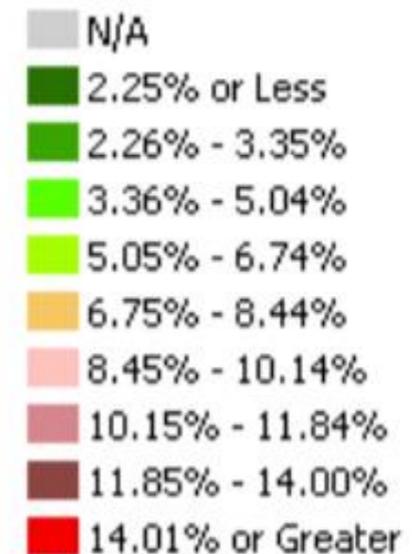
# GIS-Based Data Visualization

NMQF develops **maps** to provide demographic intelligence about acute and chronic disorders at the zip code level – segmented by age, gender, race/ethnicity – to:

- Map any index disease by prevalence, cost, outcomes, comorbidities, socioeconomic status or other data type for any state, MSA, congressional and state legislative districts
- Define where the unmet needs exist
- Forecast trends using predictive analytics
- Produce customized reports to support educational, advocacy and policy efforts



Prevalence of Diabetes, Washington-Arlington-Alexandria, DC-VA-MD-WV, 2014, Overall



# Key Learnings



**Geography matters**

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**Predictable forces shape markets**

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**Consumption patterns can be shaped**

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**Resource management can be improved**

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## **Patient Advocacy Learning Communities**

# The Big Data Challenge for Patient Advocate Organizations

Big data and machine learning are powering health care as medicine is increasingly digitized.

Health-care data is voluminous, dynamic, and complicated to manage. It is also costly to maintain and requires expertise to access and use big data analytics to study.

The majority of tools available to work with Big data are complex and hard to use, and most organizations don't have the in-house expertise to perform the required data analysis and manipulation to draw out the answers that are sought.

# Patient Advocacy Learning Communities (PALc): An Overview

PALc is an interactive, data warehouse and data visualization system that is designed to give patient advocates the power of big-data analytics in a user-friendly environment at a price that is affordable.

PALc data sets draw upon the National Minority Quality Forum's 5 billion patient records, which permits custom built data archives that provide a comprehensive view of health-care patterns and utilization over multiple years for user specified condition(s).

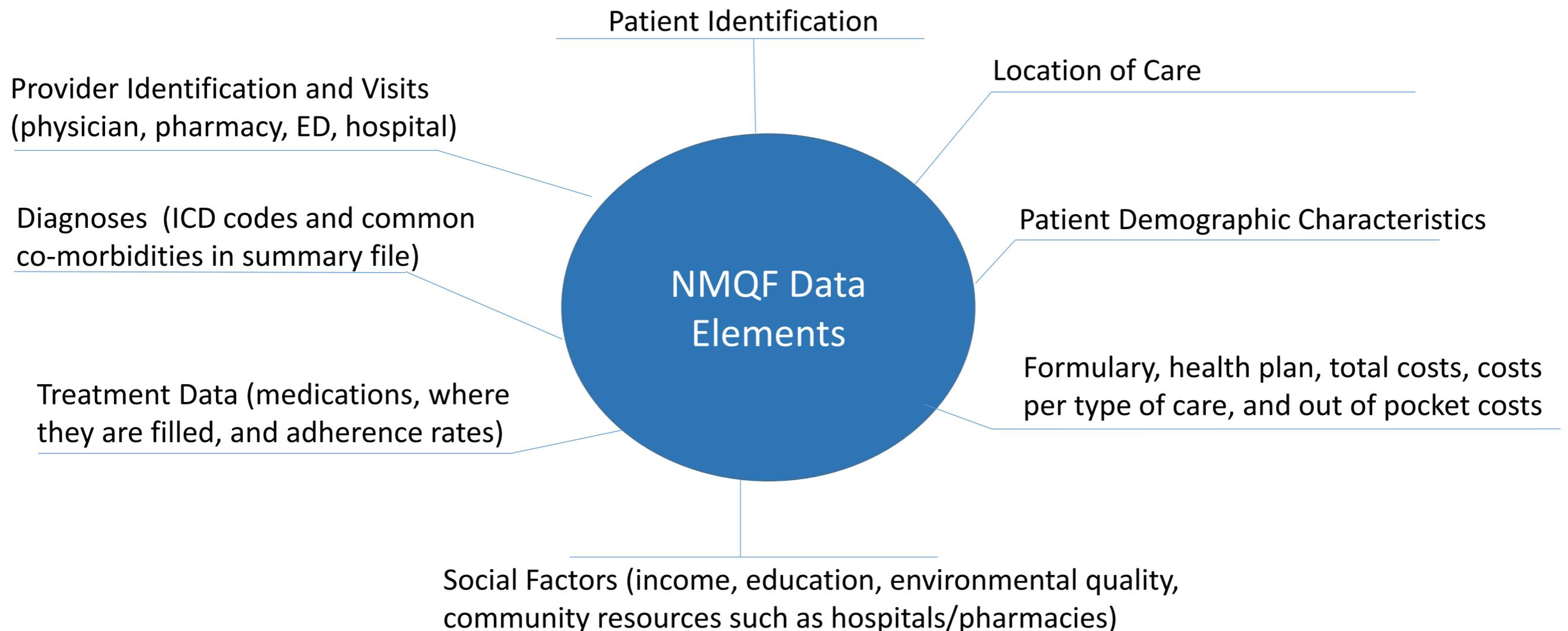
PALc permits querying the customized data archive through point-and-click analytical tools that require only basic internet skills.

PALc also offers more sophisticated users analytical tools (including augmented intelligence) to more deeply explore these data sets.

PALc provide communities tools where cross functional teams can discovery and quickly share new knowledge.

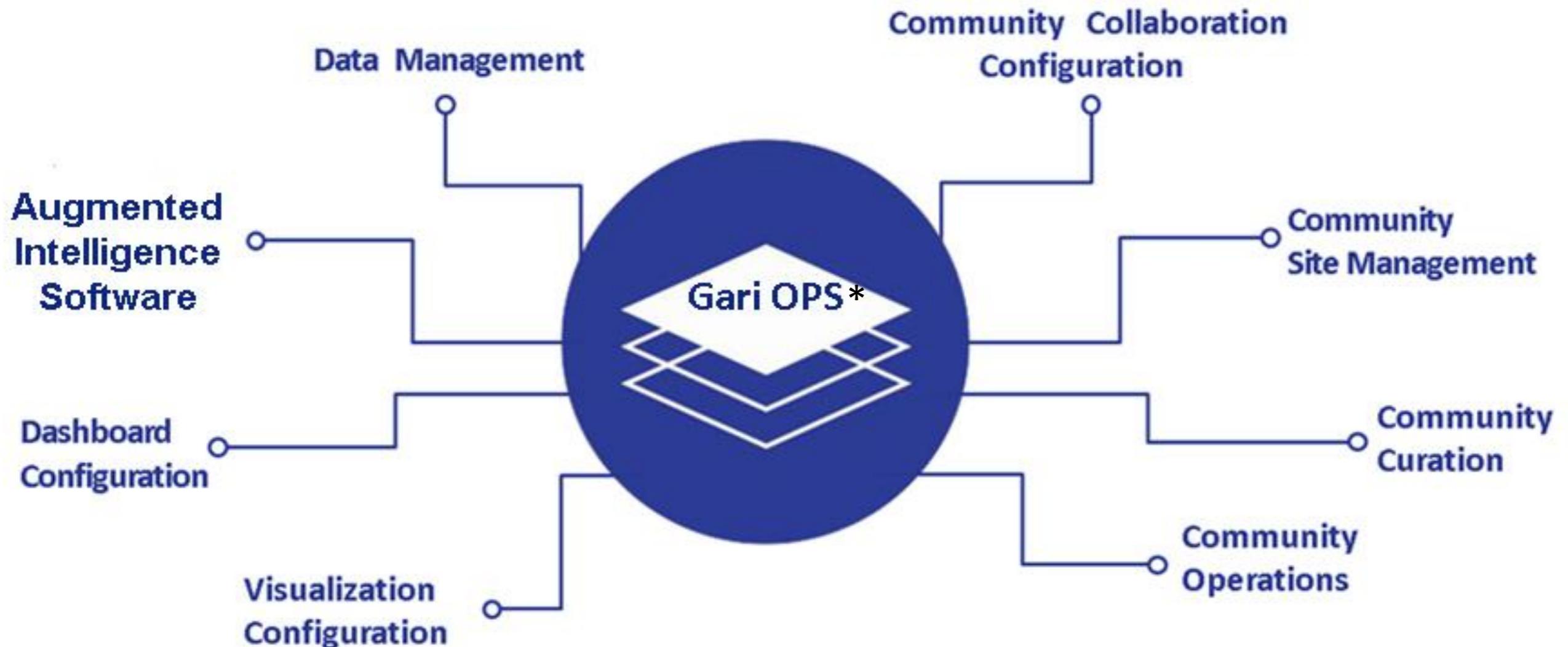
# PALc Data Powers Decision Making

PALc data can be aggregated by patient cohort, provider, and zip code, congressional and state legislative districts, and payer, permitting longitudinal studies. Data is available to identify trends and patterns for seventy-two thousand (72,000) conditions.



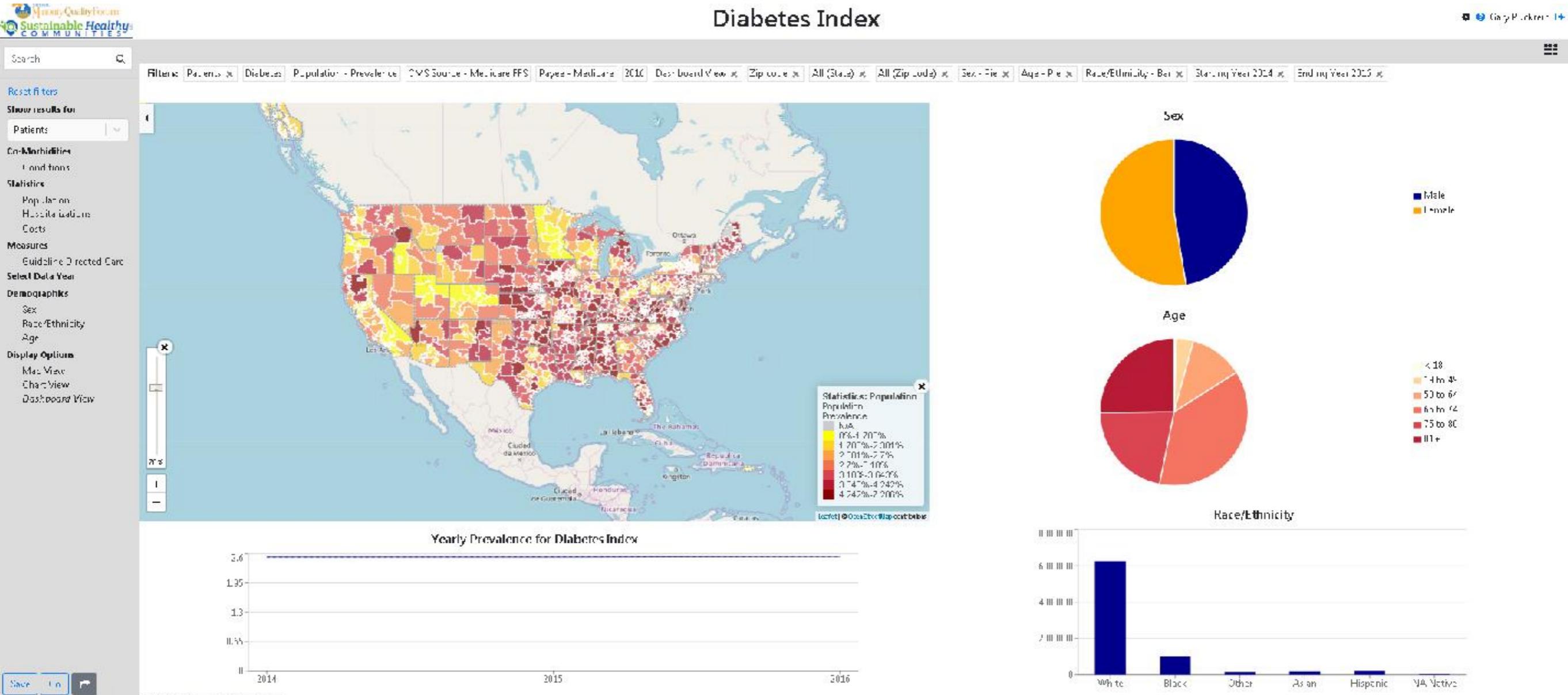
# PALc: Core Functions

PALc is an interactive, data warehouse and data visualization system that presents queries in a pictorial or graphical format, enabling decision makers to see patterns and concepts visually, and to activate non-technical internal and external partners by sharing those visualizations through community building tools.



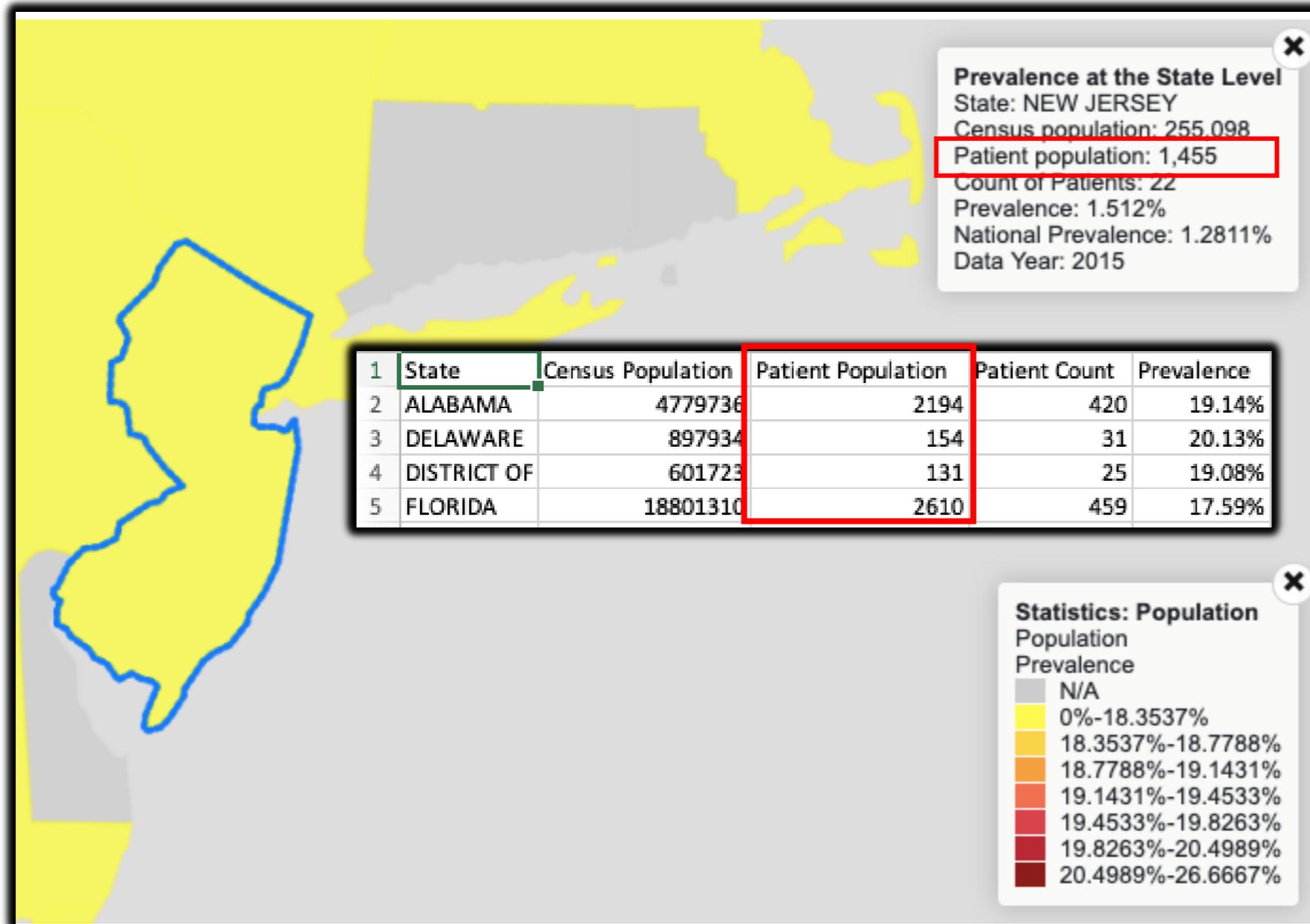
\*PALc's operating system is called G.A.R.I

# MYPALc Dashboard

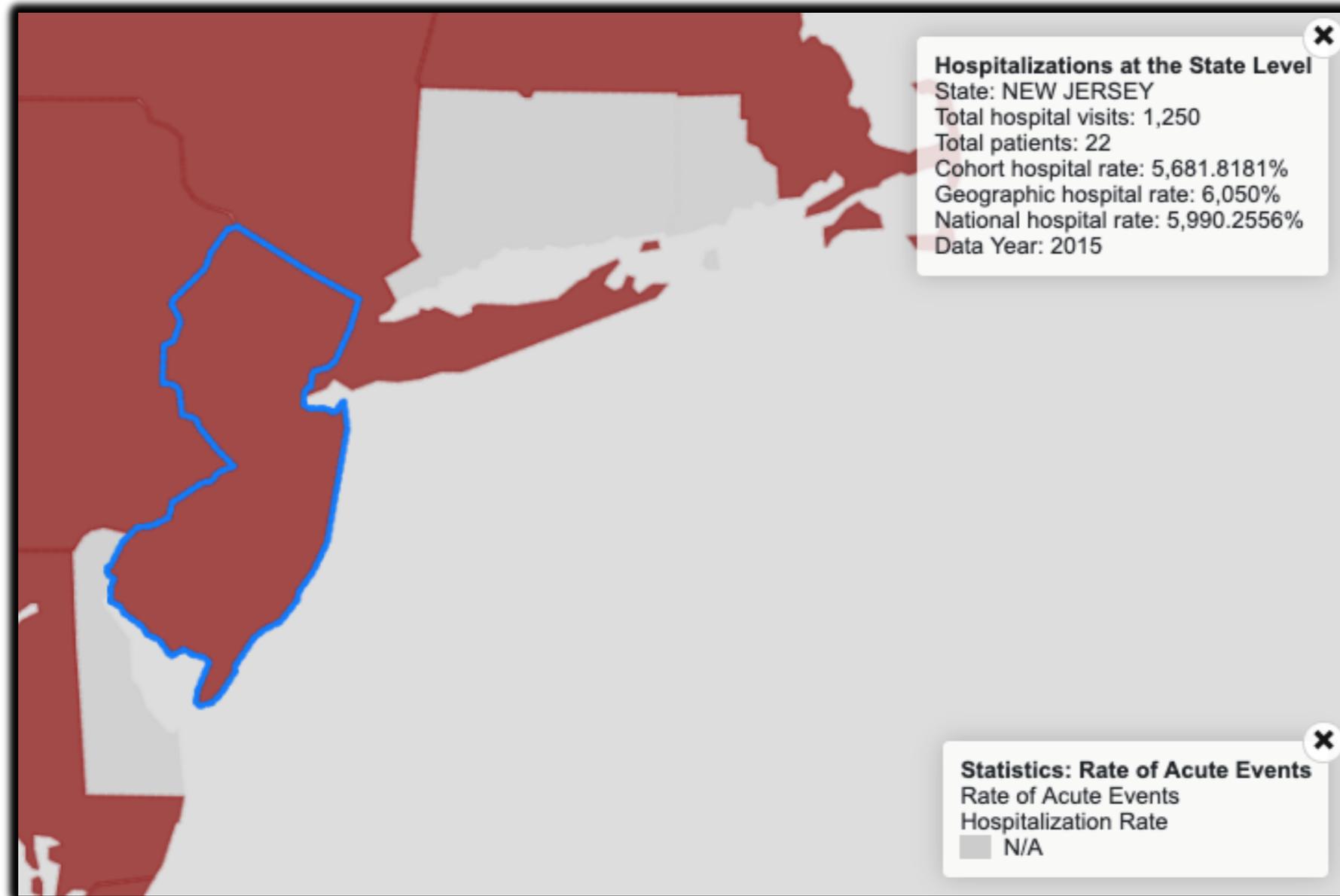


## Prevalence Calculation

**Prevalence** is calculated based on the total Medicare population count.



## Hospitalization Rate Statistic

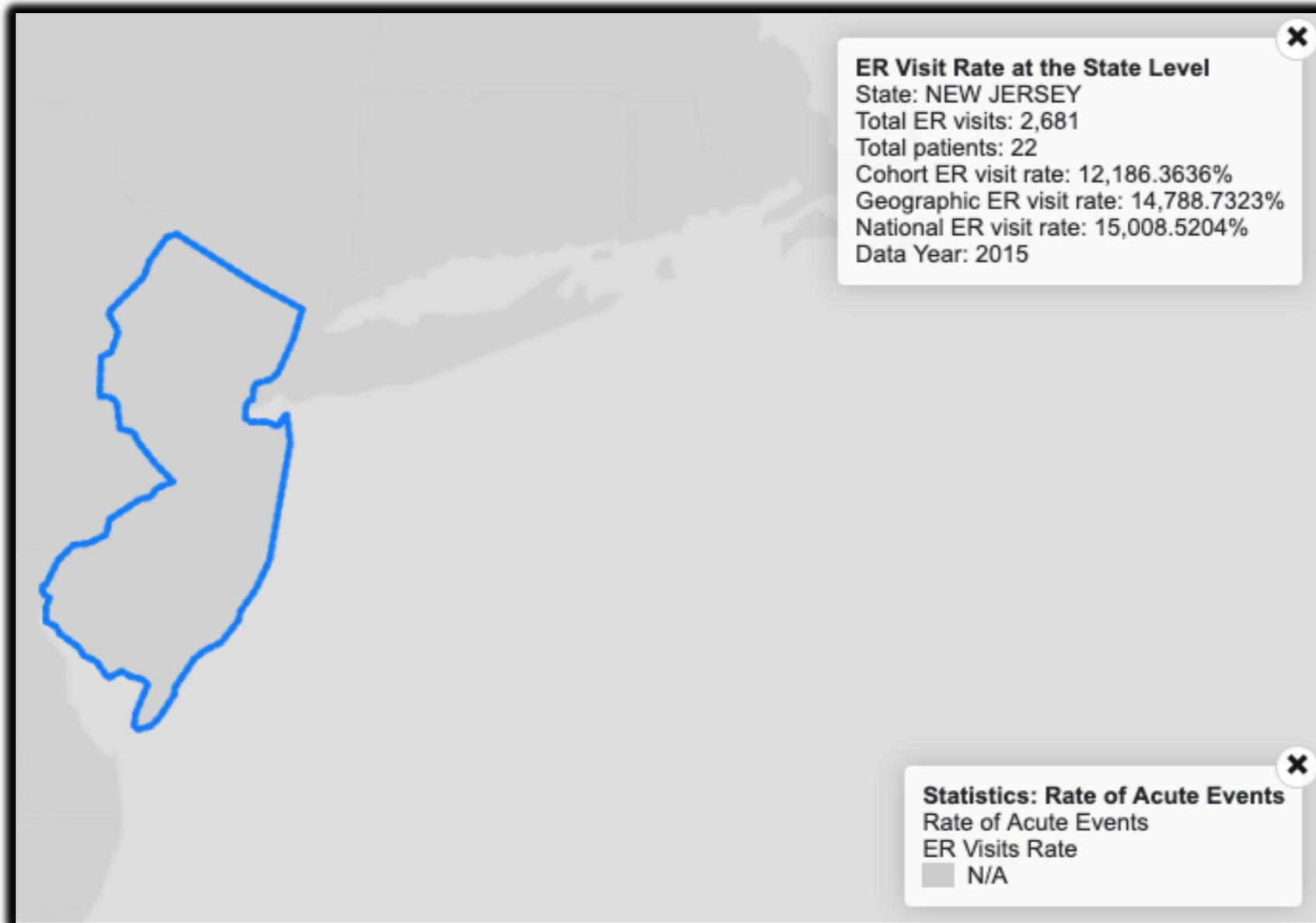


The Hospitalization rate statistic will map the average number of hospital visits for the requested filters (geo, demographics, co-morbidities, consumption group class).

The data banner includes:

- Total # hospital visits
- Total # patients
- Cohort hospital rate is based on demographic selections
- Geographic hospital rate is based on all demographics w/in the geo area
- National hospital rate is all demographics and all geo's.

## ER Visit Rate Statistic

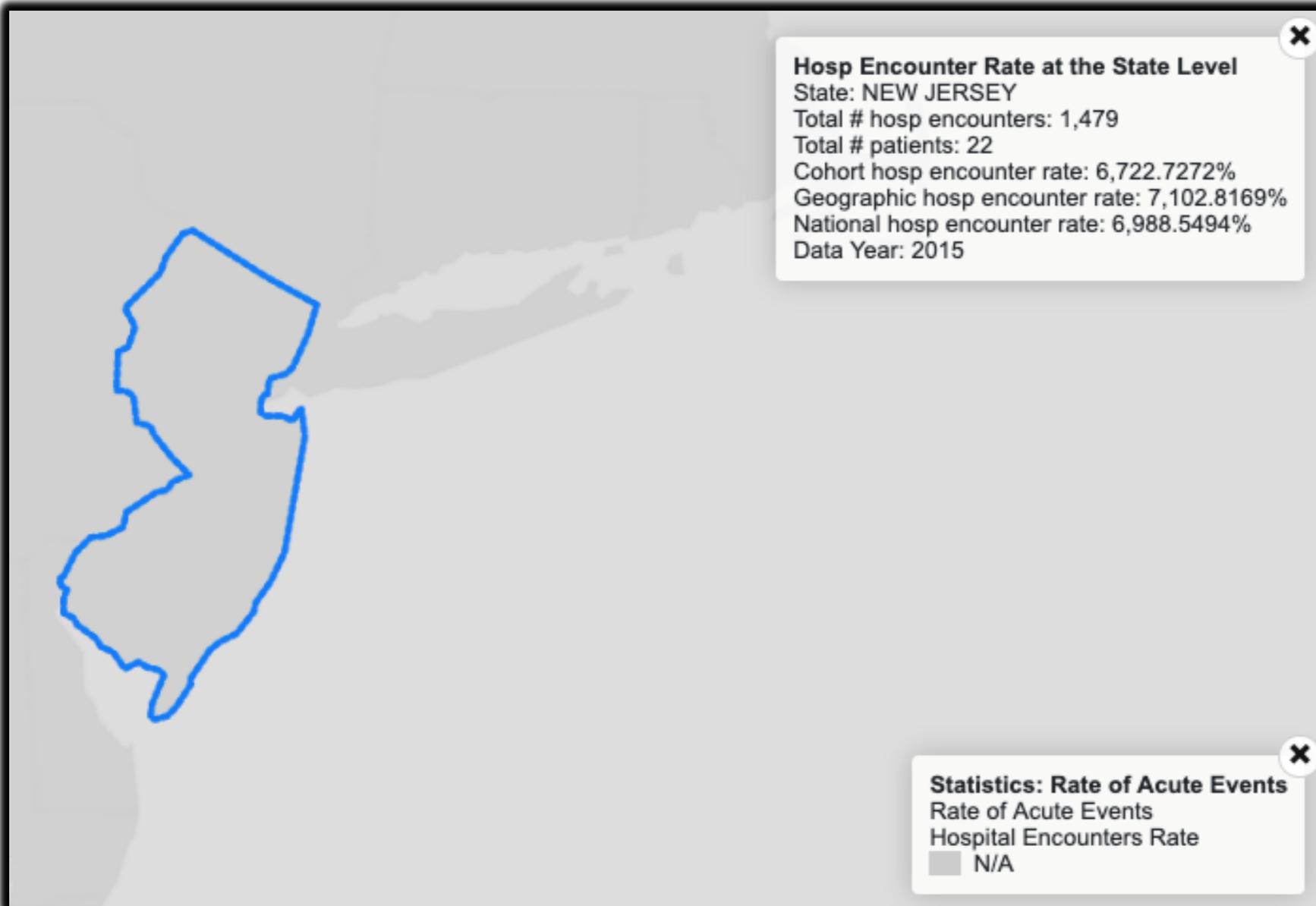


The ER visit rate statistic will map the average number of ER visits for the requested filters (geo, demographics, co-morbidities, consumption groups).

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- Total # ER visits
- Total # patients
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## Hospital Encounters Rate Statistic

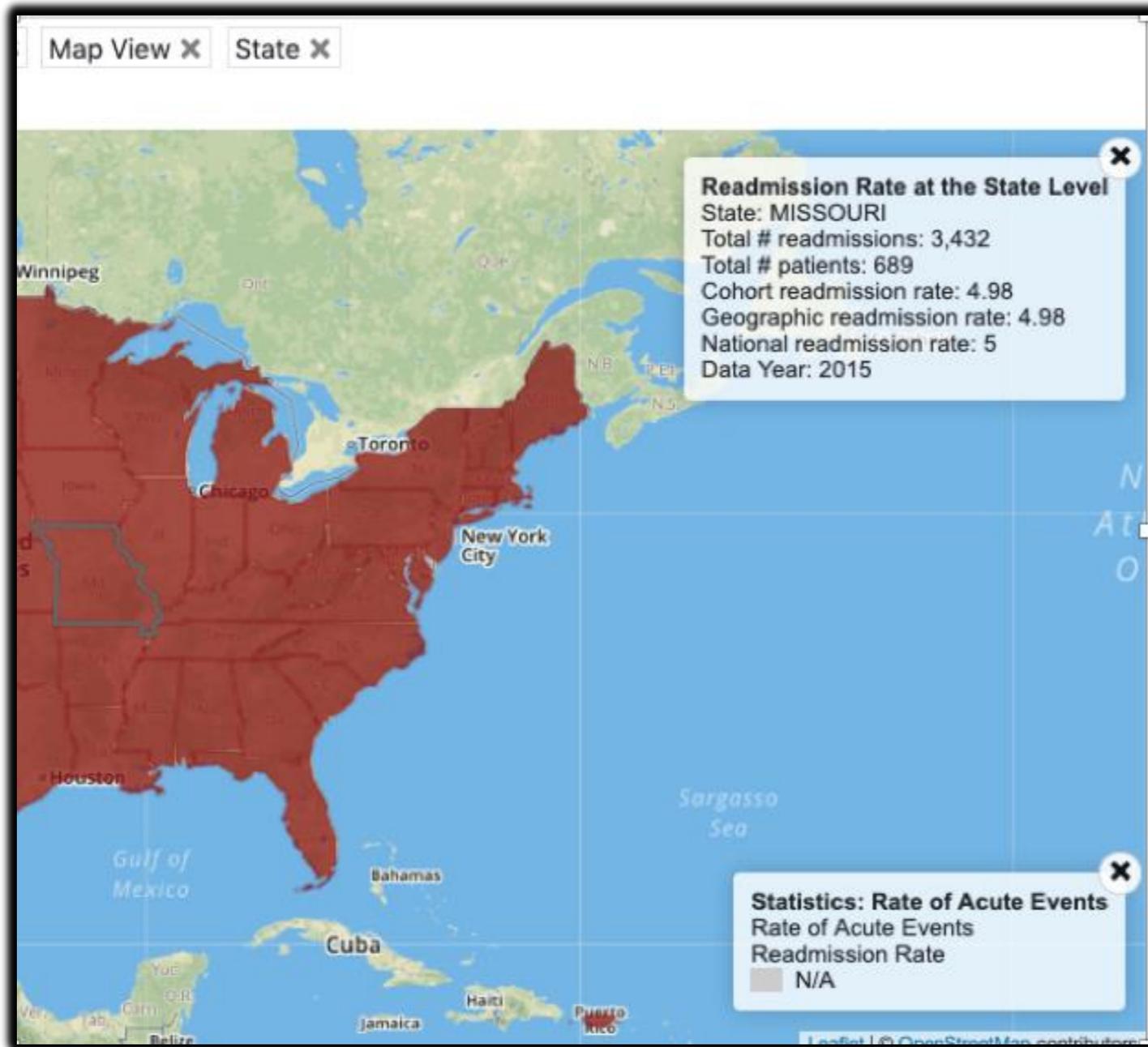


The hospital encounters rate statistic will map the average number of hospital encounters for the requested filters (geo, demographics, co-morbidities, consumption groups).

The data banner includes:

- Total # hosp encounters
- Total # patients
- Cohort hosp encounter rate is based on demographic selections
- Geographic hosp encounters rate is based on all demographics w/in the geo area
- National hosp encounters rate is all demographics and all geo's.

## Hospital Readmission Rate Statistic

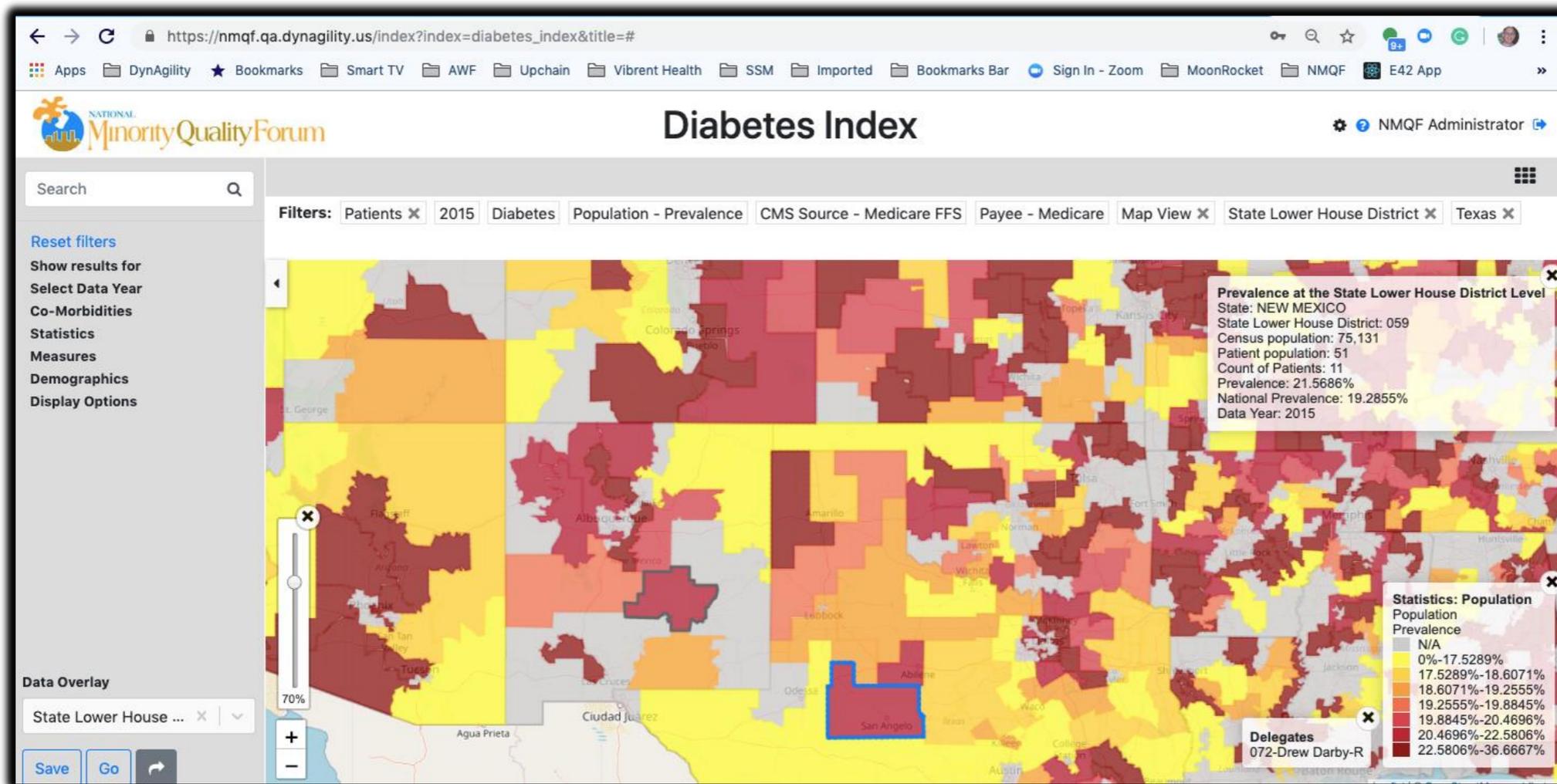


The hospital readmission rate statistic will map the average number of hospital readmissions for the requested filters (geo, demographics, co-morbidities, consumption groups).

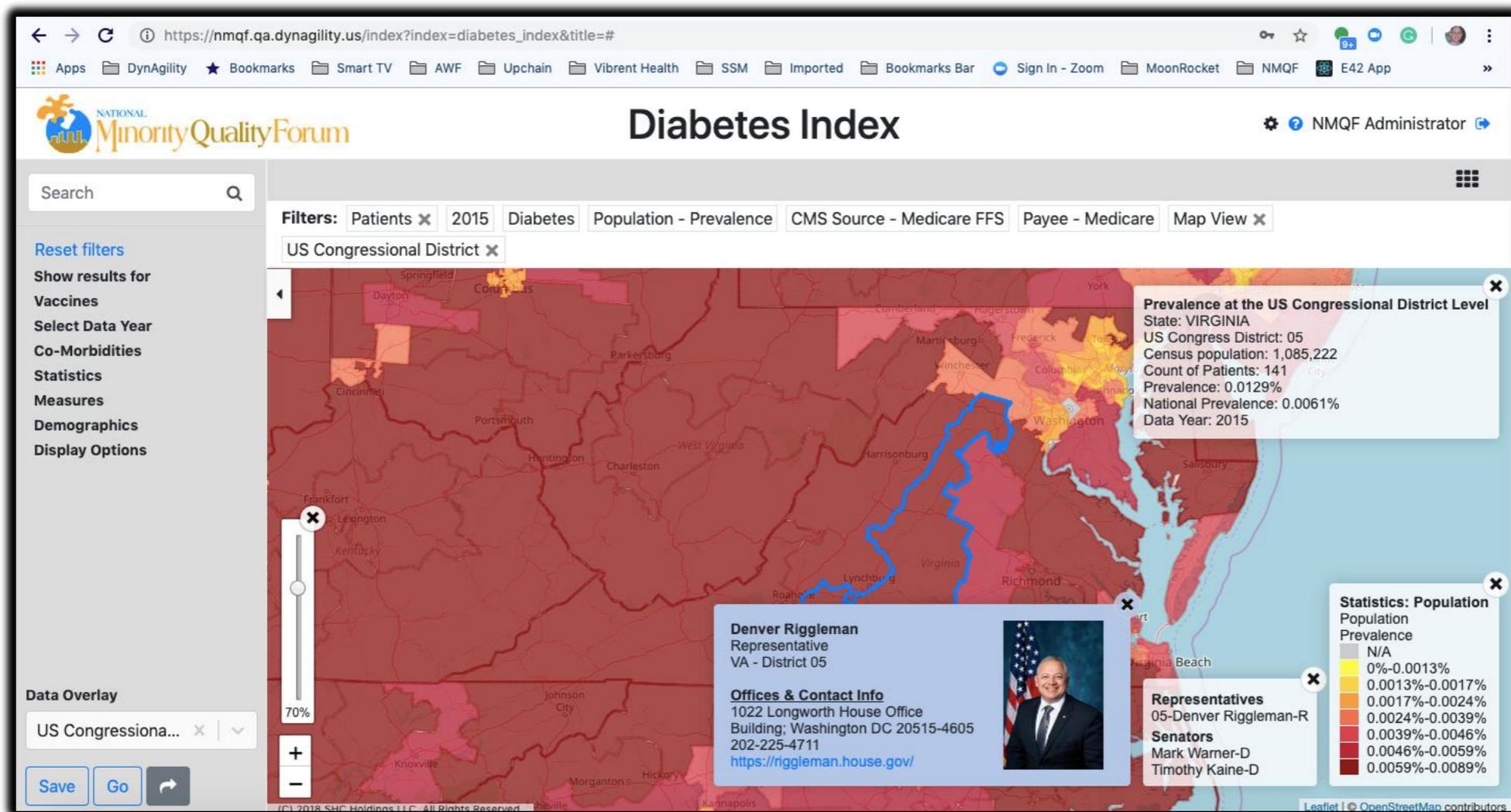
The data banner includes:

- Total # readmissions
- Total # patients
- Cohort readmission rate is based on demographic selections
- Geographic readmission rate is based on all demographics w/in the geo area
- National readmission rate is all demographics and all geo's.

This is an example of a prevalence map for state lower house. When you select “State Lower House” in the left pane dropdown field, you can then click on a district and you will immediately see a popup window to the left of the legend with the name of the delegate. If you click on the delegate’s name, you will see another popup window to the left of the Delegate list. This second window has more details on the delegate. See Congressional overlay slide for an example of this.



This is an example of a prevalence map for US congressional district. After the map renders, you can select “US Congressional” in the left pane dropdown field, you can then click on a district and you will immediately see a popup window to the left of the legend with the name of the congress person and the 2 state senators. If you click on any of the names, you will see another popup window to the left of the congressional list. This second window has more details on the congress person or senator. If you click on the web link, a new browser window will open showing their web site.



This is an example of the legislator web site that will open in a new browser tab when clicked from within the Index legislator overlay.

The screenshot shows a web browser window displaying the profile page for Senator Michael J. Hough. The browser's address bar shows the URL: `mgaleg.maryland.gov/webmga/frmMain.aspx?pid=sponpage&tab=subject6&id=hough&stab=01`. The browser's toolbar includes various icons for navigation and applications. The website header features the Maryland General Assembly logo and navigation links for the Executive and Judicial Branches. A search bar is present with a 'Translate' button. The main navigation menu includes links for Home, Hearing Schedule, Legislation by Session, Budget, Statutes, Legislators (which is highlighted), Committees, Publications, Floor Proceedings, and Legislative Services. Social media icons for Facebook, Twitter, and YouTube are also visible.

The profile page for Senator Michael J. Hough is titled 'Senator Michael J. Hough' and 'District 4, Frederick and Carroll Counties'. It indicates the '2019 Regular Session'. The page has three tabs: 'Main' (selected), 'Session Legislation', and 'Biography'. On the left side of the profile, there is a portrait photograph of Senator Hough. To the right of the photo is a table of contact and biographical information.

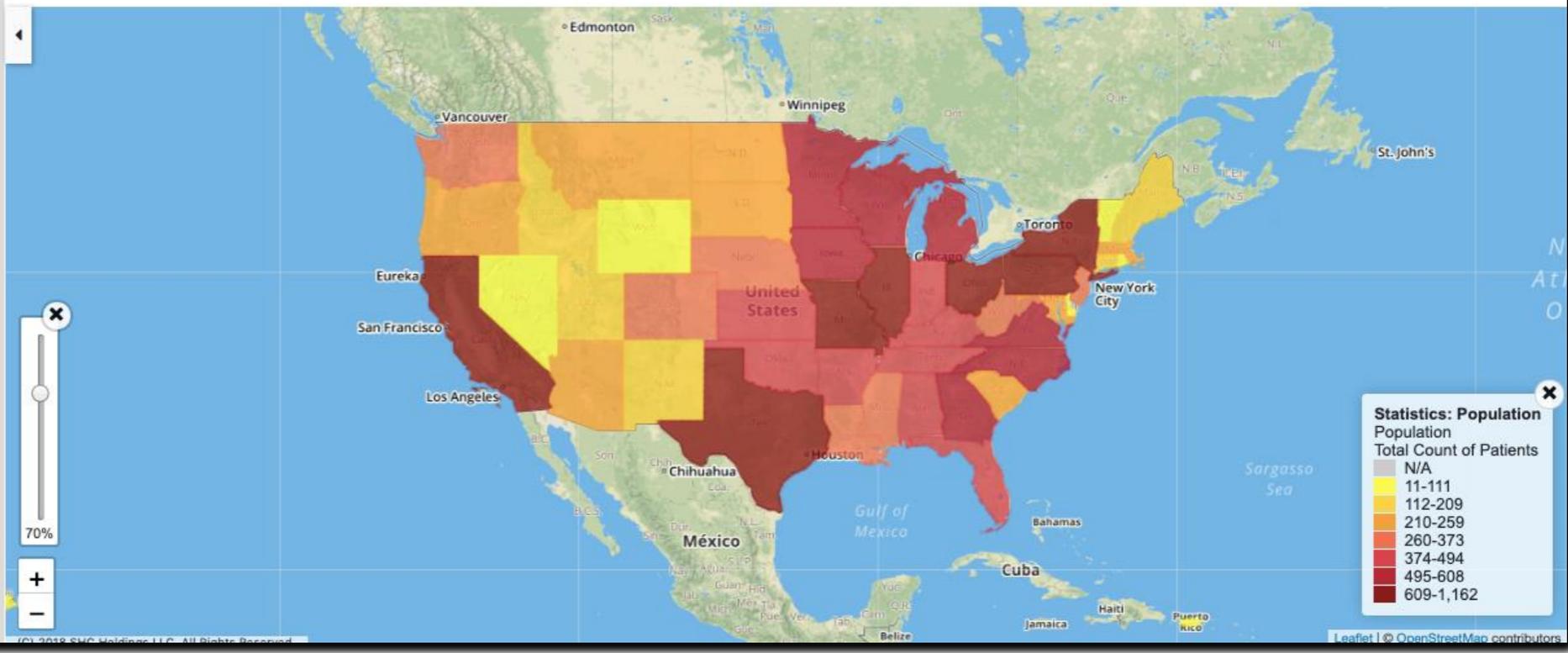
<b>Annapolis Address:</b>	403 James Senate Office Building 11 Bladen Street Annapolis, MD 21401  Phone: 410-841-3704   301-858-3704   Toll-free in MD: 1-800-492-7122 ext. 3704 Fax: 410-841-3713   301-858-3713
<b>Interim Address:</b>	3510 Worthington Blvd. Suite 301 Frederick, MD 21704  Phone: 301-874-3068
<b>Contact:</b>	<a href="#">Contact Online</a> or send email to: <a href="mailto:michael.hough@senate.state.md.us">michael.hough@senate.state.md.us</a>
<b>Tenure:</b>	First elected to the Maryland House of Delegates, 2010. Member of the House since 2011. First elected to the Maryland Senate in 2014. Member since 2015.
<b>Current Assignments:</b>	2015- Judicial Proceedings Committee 2015- Maryland Veterans Caucus (2011-2015, House Member) 2018- Vice Chair, Frederick County Delegation
<b>Party Affiliation:</b>	Republican

# Diabetes Index

Search

Filters: Patients X 2015 Diabetes Total Count of Patients CMS Source - Medicare FFS Map View X State X

- Reset filters
- Show results for
- Select Data Year
- Co-Morbidities
- Statistics
- Measures
- Demographics
- Display Options



Data Overlay

Select data to display

Save Go

# Integration of User Data



## Alzheimer's Index



### Pre-aggregated data files

Name	Filename	Year	Geo	Statistic	Date Added	Indexes	Status
There is no data to display							

# Patient Advocacy Learning Communities (PALc): An Overview

## Learning Communities

- Diabetes Working Group
- Sickle Cell Working Group
- Biden Cancer Initiative
- Musculoskeletal Disease
- Heart Failure
- Vaccine

## Community Managers

- Us Against Alzheimer's Disease
- Lupus Alliance
- US Bone and Joint Initiative

# PALc: Moving toward the Equilibrium

Produce Congressional and State Legislative District Report Cards

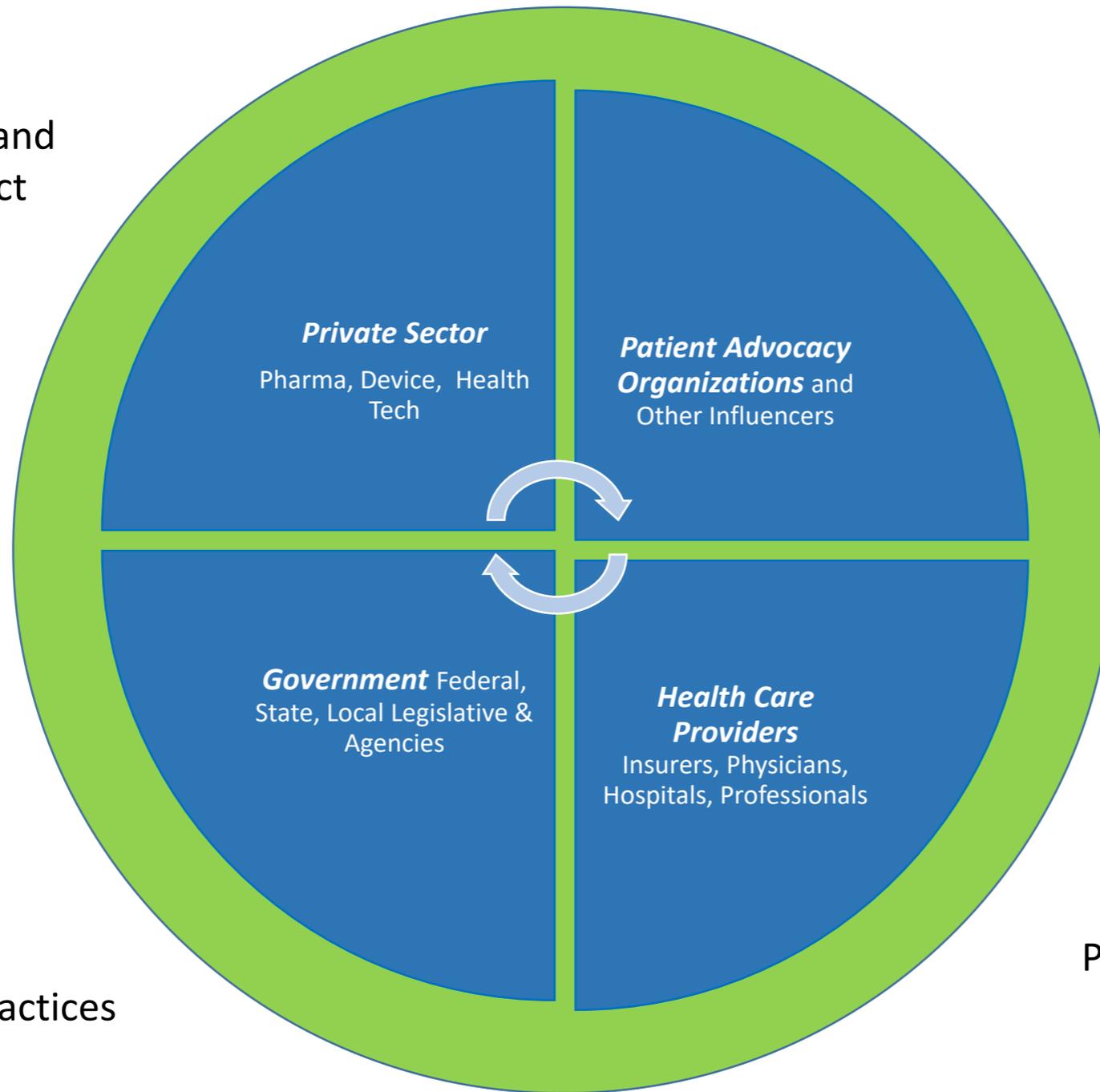
Publish Health Economic Studies

Inform Policy

Assess performance and impact

Measure Acute Event Risk Reduction

Identify programmatic improvements and best practices



Greater evidence to support community practices

Support updates to current educational programs and campaigns

Identifies trends/opportunities for interventions and access

Provide evidence for value-based decision making