



Population Health Assessment Engine

Population Health Assessment Engine Curriculum

BACKGROUND

01

Introduction to
Population Health

02

Introduction to
Geospatial Concepts

BEGINNER

03

Introduction to the
Population Health
Assessment Engine

04

How to use My
Community

05

How to use Community
HotSpots

ADVANCED

06

Getting the Most out of
My Community

07

Getting the Most out of
Community Hotspots

Overall goal for the PHATE Curriculum

To integrate community data, clinical data, and community resources in order to address social determinants of health and improve the health of patients and populations.

Target audience

- Anyone interested in learning about improving the health of populations
 - Providers
 - Staff
 - Learners
 - Residents
 - Medical students

Abbreviations

- PHATE: Population Health Assessment Engine
- HIPAA: Health Insurance Portability and Accountability Act

HOW TO USE MY COMMUNITY

BEGINNER 04

Nuts and Bolts 04: How to use My Community Learning Objectives

- Define service area
- Demonstrate competency in creating a service area map
- Demonstrate competency in creating a spreadsheet that can be uploaded into PHATE

Relevant family medicine milestones

Family Medicine Milestone
Identifies specific community characteristics that impact specific patients' health.
Recognizes social context and environment, and how a community's public policy decisions affect individual and community health.
Lists ways in which community characteristics and resources affect the health of patients and communities.
Identifies the roles of behavior, social determinants of health, and genetics as factors in health promotion and disease prevention.
Integrates practice and community data to improve population health.
Uses an organized method, such as a registry, to assess and manage population health.
Uses experience with patient panels to address population health.
Understands the role of registries in managing patient and population health.
Maintains key patient-specific databases, such as problem lists, medications, health maintenance, chronic disease registries.
Collaborates with other practices, public health, and community-based organizations to educate the public, guide policies, and implement and evaluate community initiatives.
Facilitates patients' and families' efforts at self-management of their chronic conditions, including use of community resources and services.
Partners with the community to improve population health.

Relevant nurse practitioner competencies

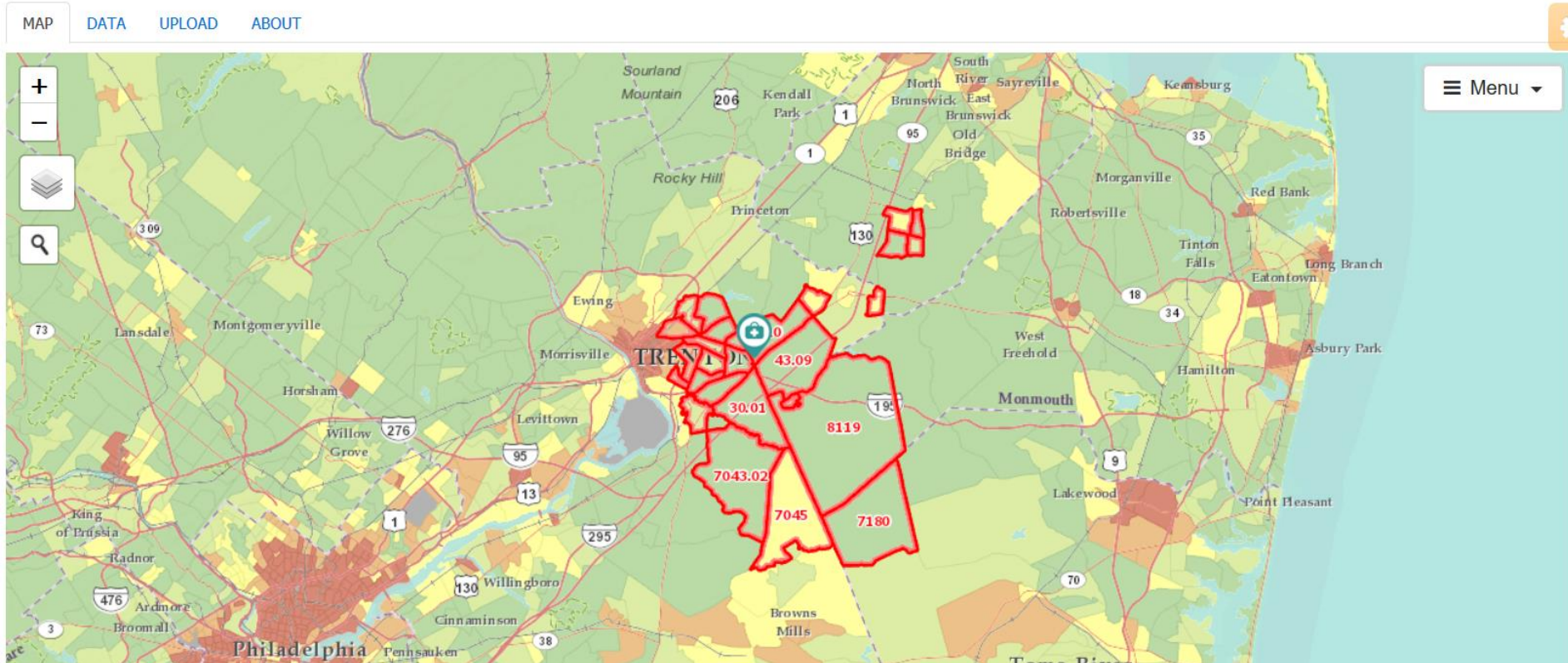
Competency
Analyze epidemiological, biostatistical, environmental, and other appropriate scientific data related to individual, aggregate, and population health.
Anticipates variations in practice and is proactive in implementing interventions to ensure quality
Use information technology and research methods appropriately to collect appropriate and accurate data to generate evidence for nursing practice, inform and guide the design of databases that generate meaningful evidence for nursing practice, analyze data from practice, design evidence-based interventions, predict and analyze outcomes, examine patterns of behavior and outcomes, and identify gaps in evidence for practice.
Integrates appropriate technologies for knowledge management to improve health care.
Uses technology systems that capture data on variables for the evaluation of nursing care.

Nuts and Bolts 04: How to use My Community

Outline

- I. What is a service area?
- II. Creating your service area map

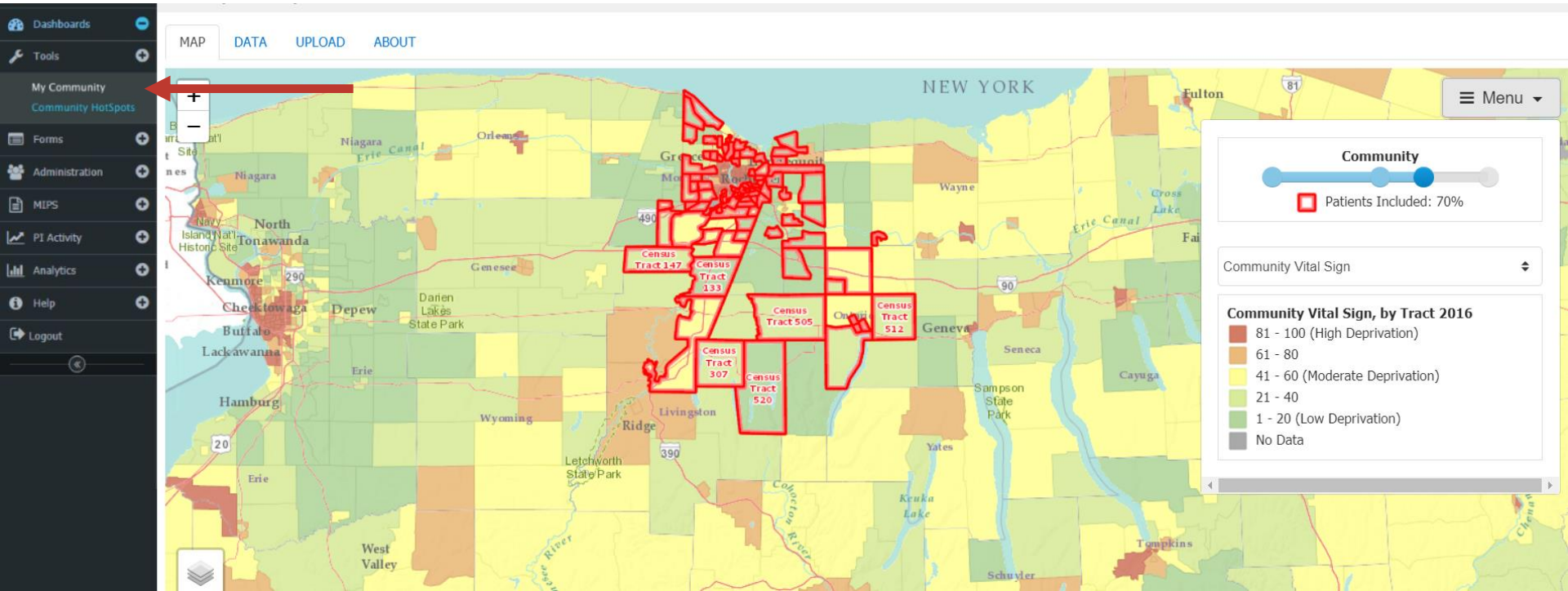
My Community

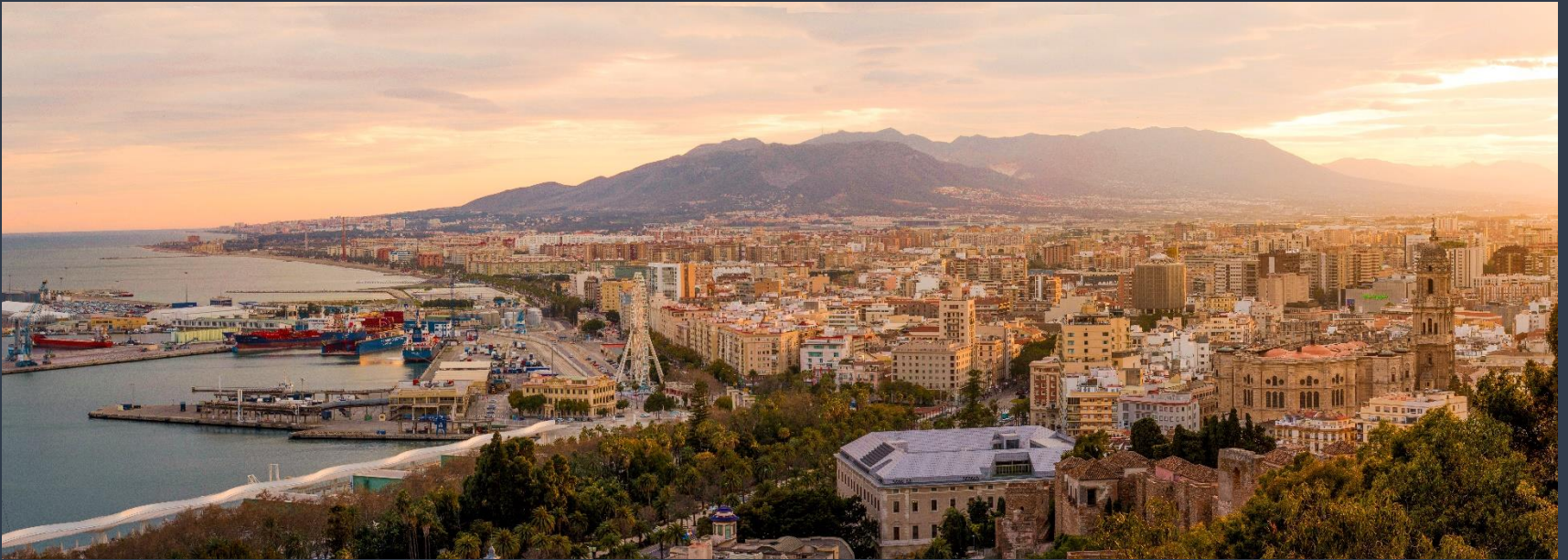


What you can do using My Community:

- View community characteristics
- View your clinic's service area
- View how your clinic's service area relates to community characteristics
- Download community characteristics

Community HotSpots





A service area is the community or communities served by the practice

Nutting PA. Community-Oriented Primary Care: From Principle to Practice. Albuquerque, NM: University of New Mexico Press, 1990.

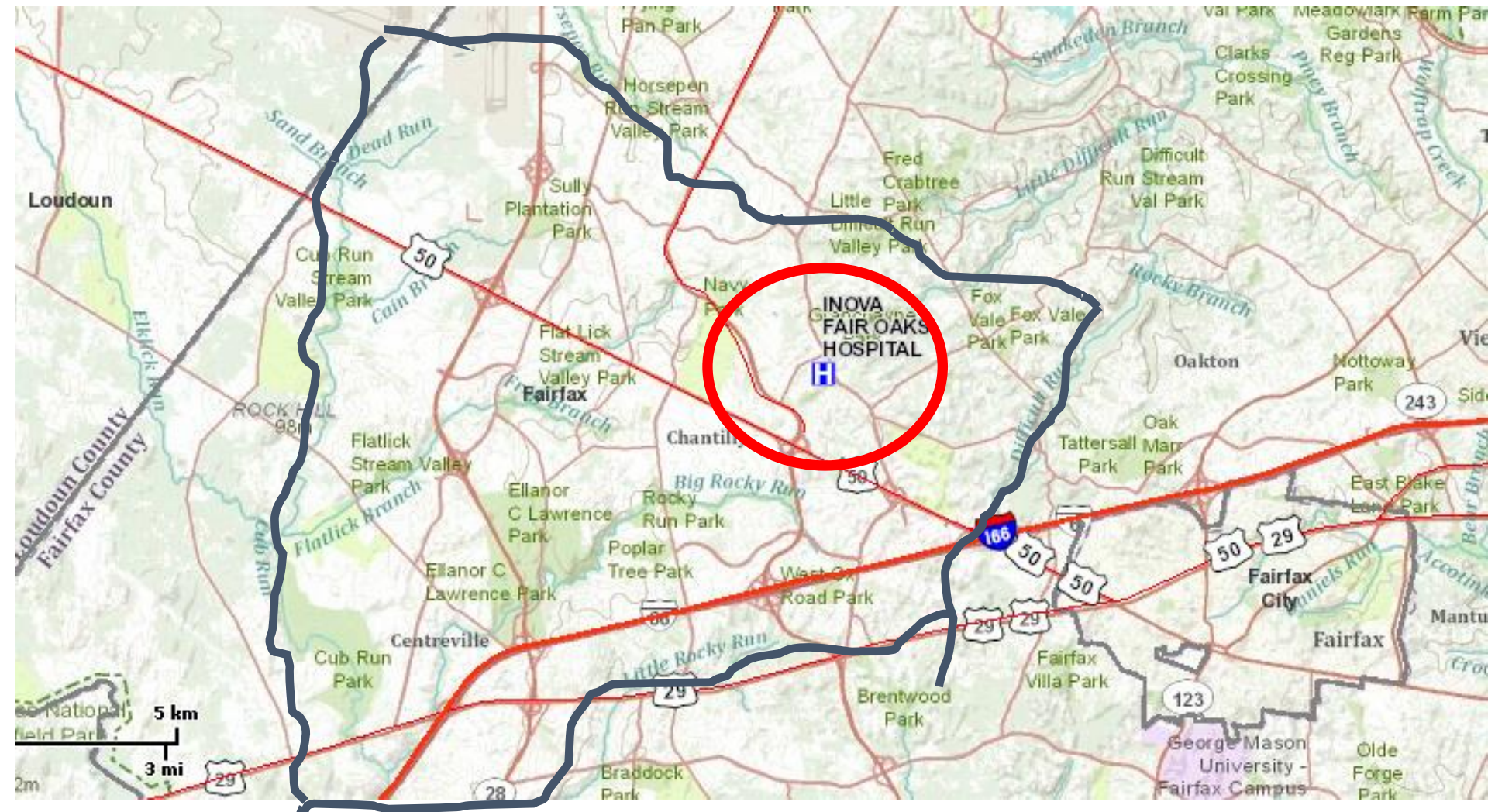
Service area

- Methods for service area definition:
 - Public agencies: school districts
 - Geographic borders: bodies of water
 - Social or economic function: garment district
 - Historical neighborhoods: Georgetown
 - Geographic retrofitting: the geographies where most of the practice patients live

Nutting PA. Community-Oriented Primary Care: From Principle to Practice. Albuquerque, NM: University of New Mexico Press, 1990.

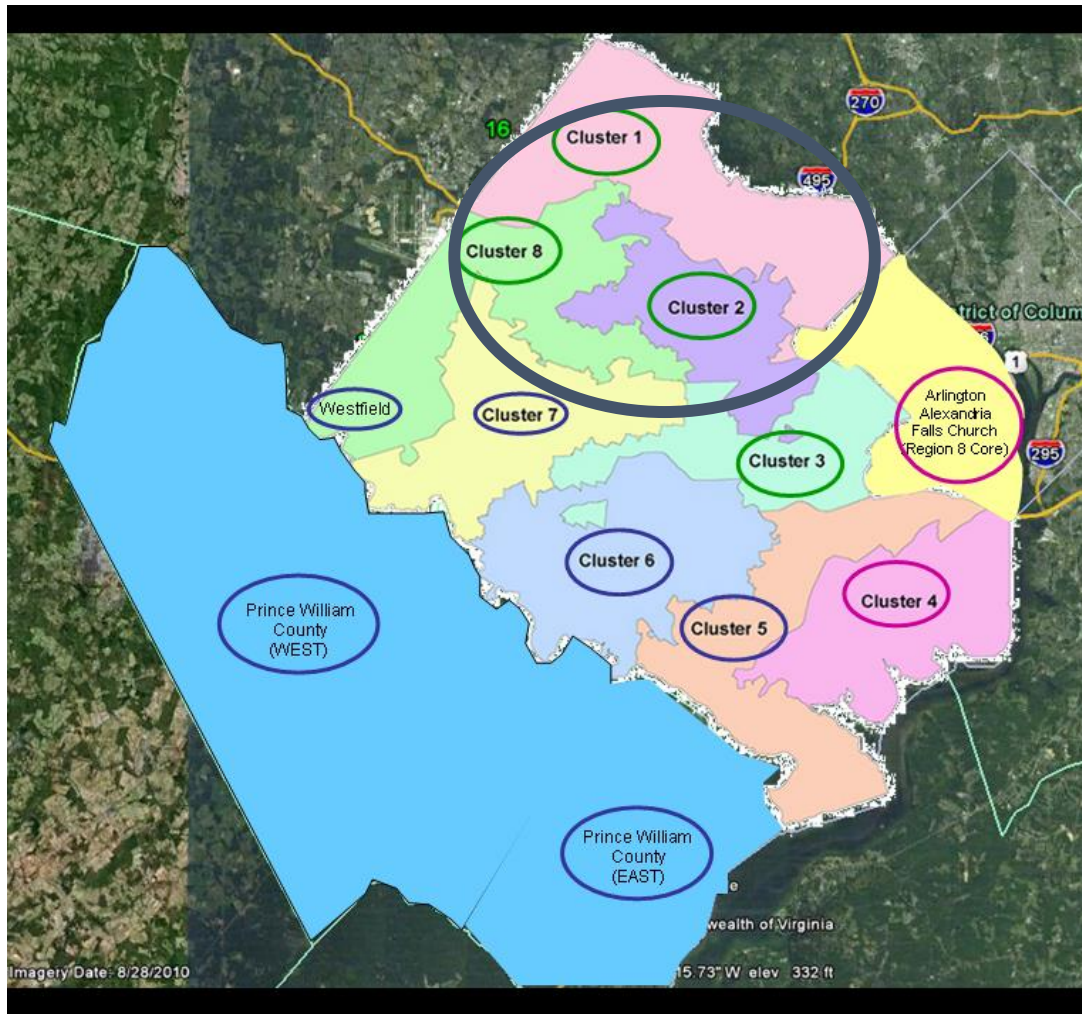
Service area

Using geographic boundaries



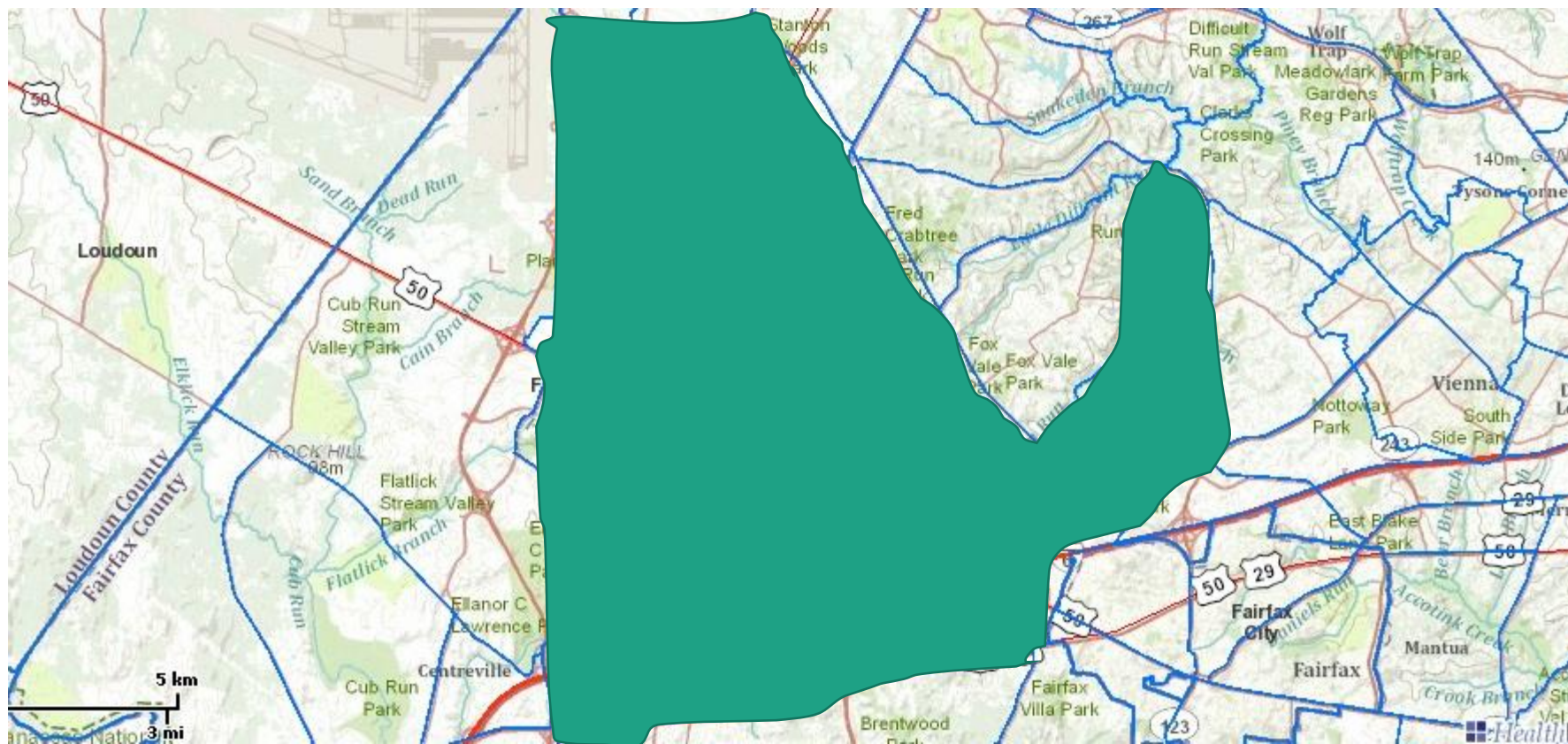
Service area

Using predefined boundaries



Service area

Geographic retrofitting



Geographic Retrofitting

440 June 2004

Family Medicine

Research Series

Geographic Retrofitting: A Method of Community Definition in Community-oriented Primary Care Practices

Fitzhugh Mullan, MD; Robert L. Phillips, Jr, MD, MSPH; Edward L. Kinman, PhD

Community-Oriented Primary Care

The screenshot shows the Robert Graham Center website. At the top left is the logo for the Robert Graham Center, which consists of a stylized flame icon and the text 'ROBERT GRAHAM CENTER'. To the right of the logo is a search bar with the text 'Search RGC' and a magnifying glass icon. Below the logo and search bar is a horizontal navigation menu with five items: 'ABOUT US', 'PUBLICATIONS & REPORTS', 'MAPS, DATA & TOOLS', 'VISITING SCHOLARS & FELLOWS', and 'PRESS & EVENTS'. The 'MAPS, DATA & TOOLS' item is highlighted with a dark blue background. Below the navigation menu is a sidebar on the left with a list of items: 'MAPS, DATA & TOOLS', 'Interactive Maps', 'Maps', 'Data Tables', 'Tools', 'Community Oriented Primary Care (COPC) Curriculum', and 'Population Health Curriculum'. The 'Community Oriented Primary Care (COPC) Curriculum' item is highlighted with a dark blue background. To the right of the sidebar is the main content area, which has the heading 'Community Oriented Primary Care (COPC) Curriculum'. Below the heading is the 'Purpose' section, which contains a paragraph of text. Below the 'Purpose' section is the 'Funding' section, which contains a paragraph of text.

ROBERT GRAHAM CENTER

Search RGC

ABOUT US | PUBLICATIONS & REPORTS | **MAPS, DATA & TOOLS** | VISITING SCHOLARS & FELLOWS | PRESS & EVENTS

MAPS, DATA & TOOLS

- Interactive Maps
- Maps
- Data Tables
- Tools
- Community Oriented Primary Care (COPC) Curriculum**
- Population Health Curriculum

Community Oriented Primary Care (COPC) Curriculum

Purpose

The Community Oriented Primary Care (COPC) curriculum was developed to inform trainees at educational health centers about the basic tenets of COPC and provide tools for students to understand how to set up and manage COPC implementations in their communities. Resources include slides and note sets; pre-activity and case study modules with sample data; walkthroughs of online geographic information systems (GIS) tools with sample data; and resource guides.

Funding

This project was funded by the National Association of Community Health Centers through their Cooperative Agreement with the Bureau of Primary Health Care. The curriculum was developed jointly by the Robert Graham Center and the Virginia Commonwealth University, Fairfax Family Medicine Residency Program. The work was guided by an advisory committee made up of COPC experts.

Why is the service area important?

- Better delivery of care
- Payment is increasingly tied to the health of populations
 - Accountable care organizations
 - Accountable health communities
 - Identifying and treating those at risk for poor health

Census Geography

- Census Tracts

- Primary purpose is to provide a stable set of geographic units for the presentation of statistical data
- Population size between 1,200 and 8,000 people, with an optimum size of 4,000 people
- Usually covers a contiguous area, but area varies widely
- Boundaries are delineated with the intention of being maintained over a long time so that longitudinal comparisons can be made
- Occasionally are split due to population growth or merged as a result of substantial population decline
- Boundaries generally follow visible and identifiable features



What is a service area?

Census tract	# pts	Cum. %	Census tract	# pts	Cum. %	Census tract	# pts	Cum. %
A	432	10.3%	L	167	78.5%	W	0	--
B	380	19.5%	M	146	82.0%	X	60	98.5%
C	349	27.8%	N	135	85.2%	Y	0	--
D	312	35.3%	O	120	88.1%	Z	0	--
E	301	42.5%	P	0	--	AA	27	99.1%
F	263	48.8%	Q	0	--	BB	21	99.6%
G	251	54.8%	R	99	90.5%	CC	15	100%
H	233	60.4%	S	96	92.8%	DD	0	--
I	208	65.4%	T	90	94.9%	EE	0	--
J	199	70.1%	U	0	--	FF	0	--
K	181	74.5%	V	89	97.1%	TOTAL	4,174	100%

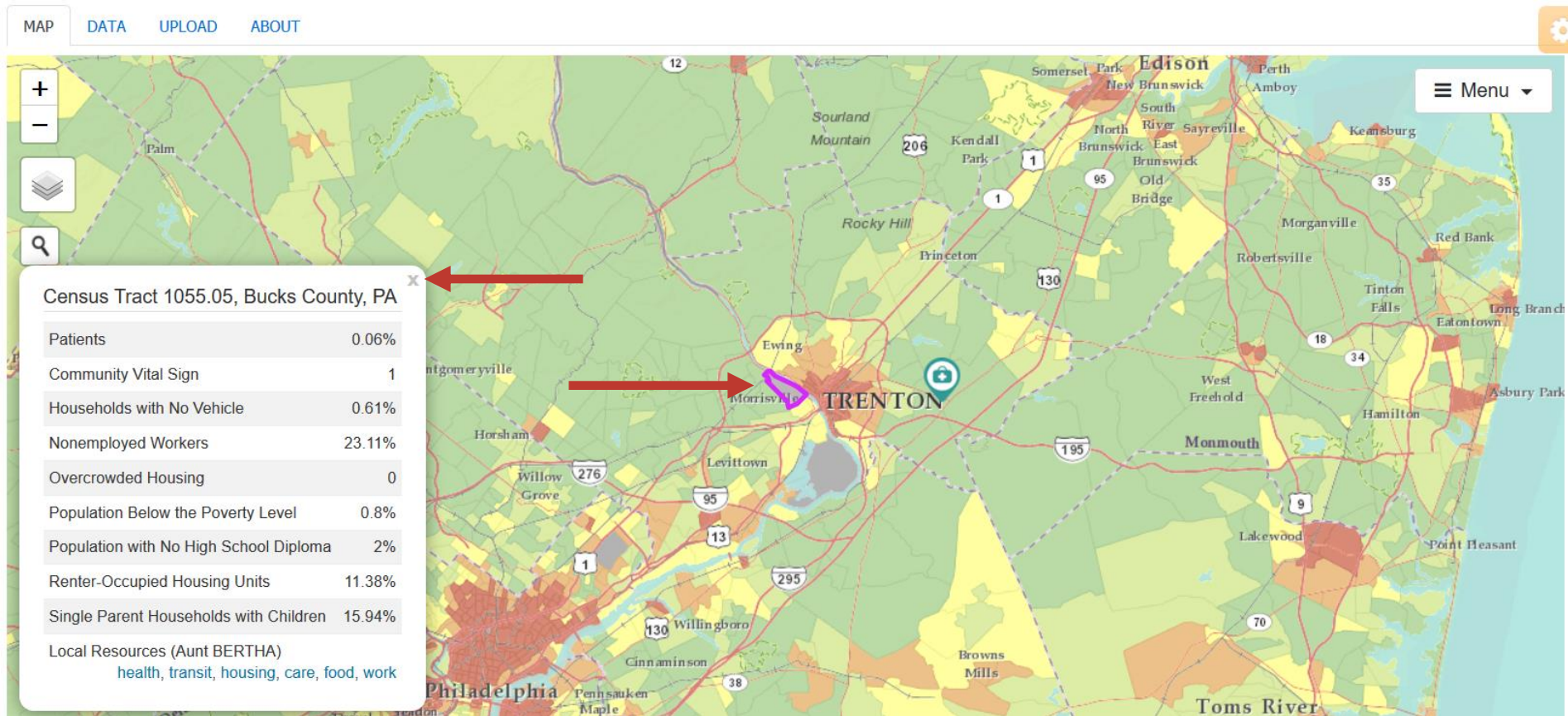
What is a service area?

- Service area = based on the number of patients per area; include the ones with the most patients first



AA	T	S	R	Q	P	BB	CC
Z	U	G	F	A	B	O	DD
Y	V	H	E	D	C	N	EE
X	W	I	J	K	L	M	FF

Community & Service Area



My Community

MAP DATA UPLOAD ABOUT



Download Table

State	County	Census Tract	Patients (%)	Community Vital Sign	Households with No Vehicle (%)	Nonemployed Workers (%)	Overcrowded Housing (%)	Population Below the Poverty Level (%)	Population with No High School Diploma (%)	Renter-Occupied Housing Units (%)	Single Parent Households with Children (%)	Local Resources (Aunt BERTHA)
US					9.09	32.43	3.33	15.47	13.48	36.1	34.61	
NJ					11.68	30.61	3.25	10.82	11.49	35.53	30.51	
NJ	Mercer	43.10	12.64	10	6.37	24.7	0.33	1.27	3.92	18.64	10.4	health, transit, housing, care, food, work
NJ	Mercer	43.09	5.78	3	2.37	24.53		1.07	3.23	14.53	11.67	health, transit, housing, care, food, work
NJ	Mercer	30.02	4.02	8	2.45	22.54		1.16	6.09	5.73	22.34	health, transit, housing, care, food, work
NJ	Mercer	30.06	3.45	5	6.95	19.7		0.63	3.74	7.33	7.67	health, transit, housing, care, food, work
NJ	Mercer	30.01	3.43	7	1.14	33.23	1	2.93	5.15	11.77	11.88	health, transit, housing, care, food, work

Community Resources

MAP DATA UPLOAD ABOUT



Download Table

State	County	Census Tract	Patients (%)	Community Vital Sign	Households with No Vehicle (%)	Nonemployed Workers (%)	Overcrowded Housing (%)	Population Below the Poverty Level (%)	Population with No High School Diploma (%)	Renter-Occupied Housing Units (%)	Single Parent Households with Children (%)	Local Resources (Aunt BERTHA)
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NJ	Mercer	43.10	12.64	10	6.37	24.7	0.33	1.27	3.92	18.64	10.4	health, transit, housing, care, food, work
NJ	Mercer	43.09	5.78	3	2.37	24.53		1.07	3.23	14.53	11.67	health, transit, housing, care, food, work
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NJ	Mercer	30.01	3.43	7	1.14	33.23	1	2.93	5.15	11.77	11.88	health, transit, housing, care, food, work

Community Resources

Zip or keyword or program name



Select Language



FOOD



HOUSING



GOODS



TRANSIT



HEALTH



MONEY



CARE



EDUCATION



WORK



LEGAL

Trenton, NJ (08691) / showing results for search: housing < 1 - 50 of 283 >

Sort by Best Match Closest

Program Filters

Personal Filters

Income Eligibility

Open Hours

- Open Now
- Open Late
- Open Early
- Open Weekends
- Open 24 Hours

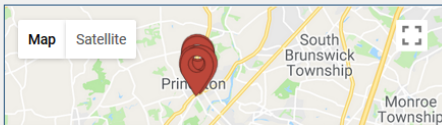
Cost

- Free
- Reduced Cost

Program communicates in

select language

Filter Search



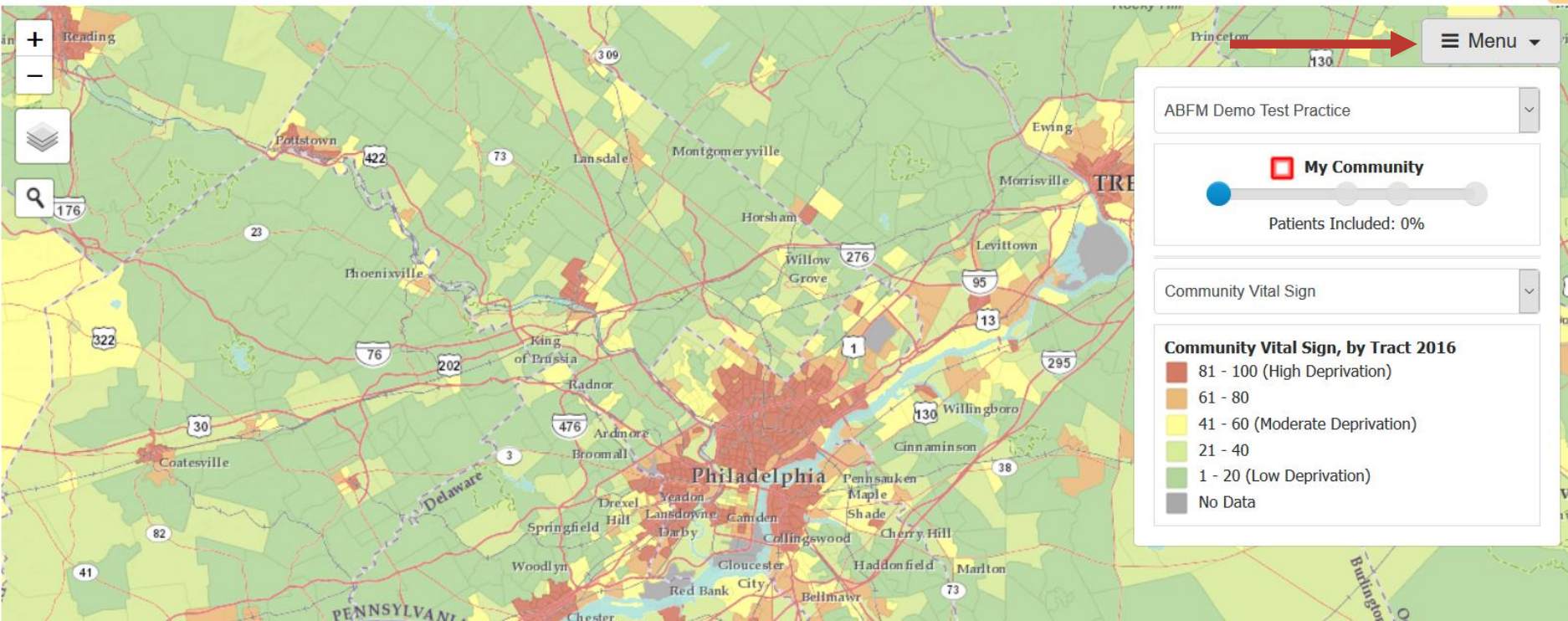
Best Matches

These programs contain all of the word(s) you searched in the provider name, program name, or description and are likely to be the most relevant matches.

Serves your local area

Menu

MAP DATA UPLOAD ABOUT



Menu

MAP DATA UPLOAD ABOUT

Menu

Web Demo Practice

Practice

- Web Demo Practice
- Construct My Community**
Select census tracts to define my community
Upload a table of patient addresses

Community Vital Sign

Community Vital Sign, by Tract 2016

- 81 - 100 (High Deprivation)
- 61 - 80
- 41 - 60 (Moderate Deprivation)
- 21 - 40
- 1 - 20 (Low Deprivation)
- No Data

Three ways to create service area maps

Users	Service area can be viewed automatically in PHATE	Service area can be selected by the user	Service area can be viewed by uploading addresses
Connected to the PRIME Registry	Yes	Yes	Yes (but PHATE automatically does this for you)
Not connected to PRIME and have addresses	No	Yes	Yes
Not connected to PRIME and do not have addresses	No	Yes	No

CREATING YOUR SERVICE AREA MAP

USING PRIME REGISTRY DATA

BEGINNER 04

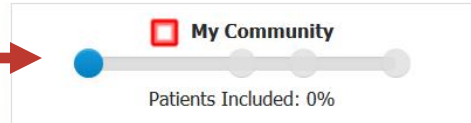
Community & Service Area

MAP DATA UPLOAD ABOUT

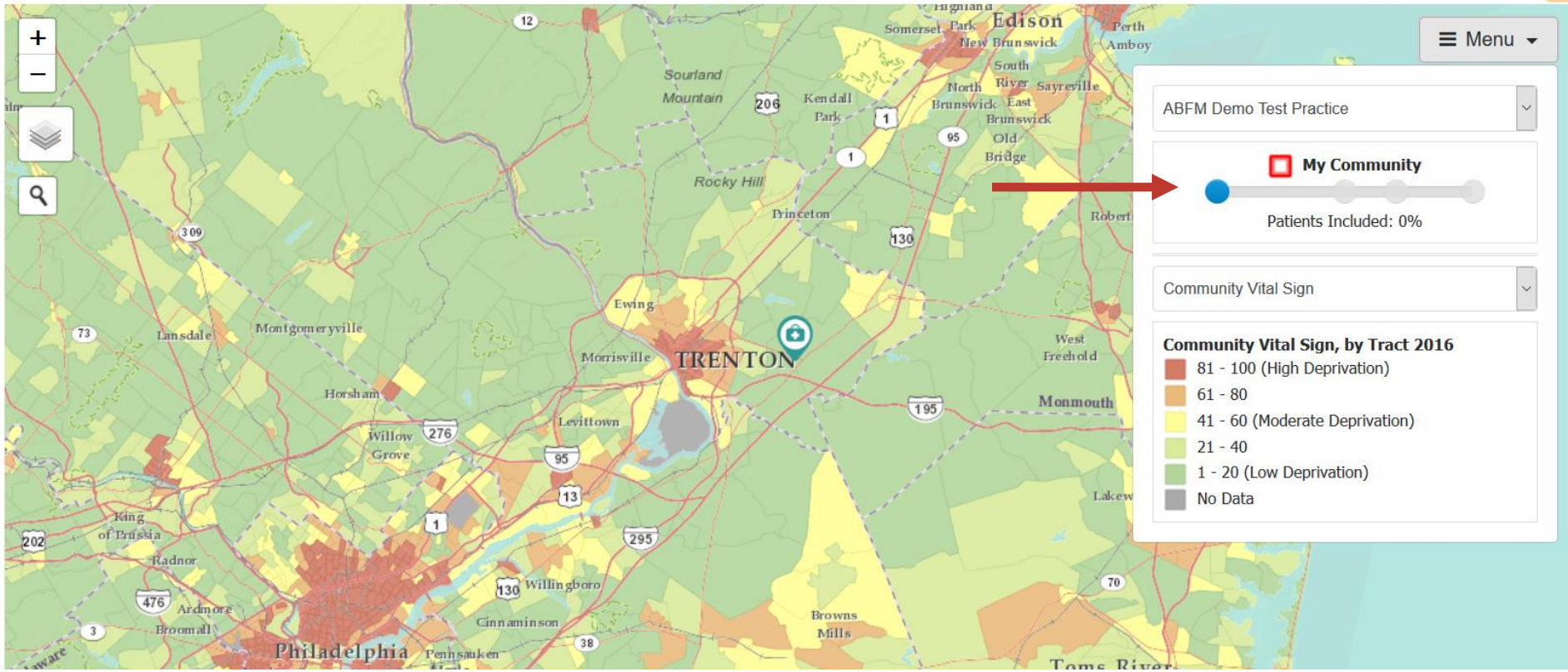


Menu

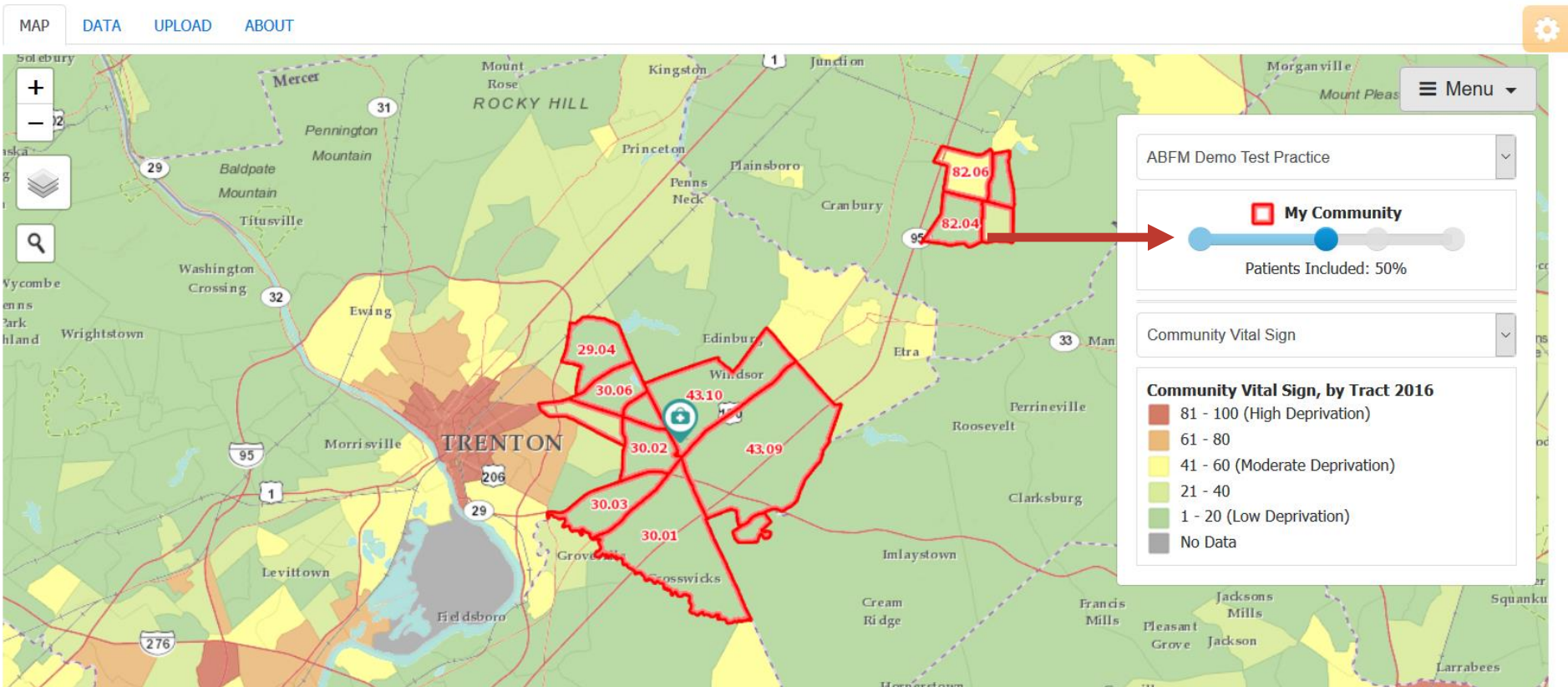
ABFM Demo Test Practice



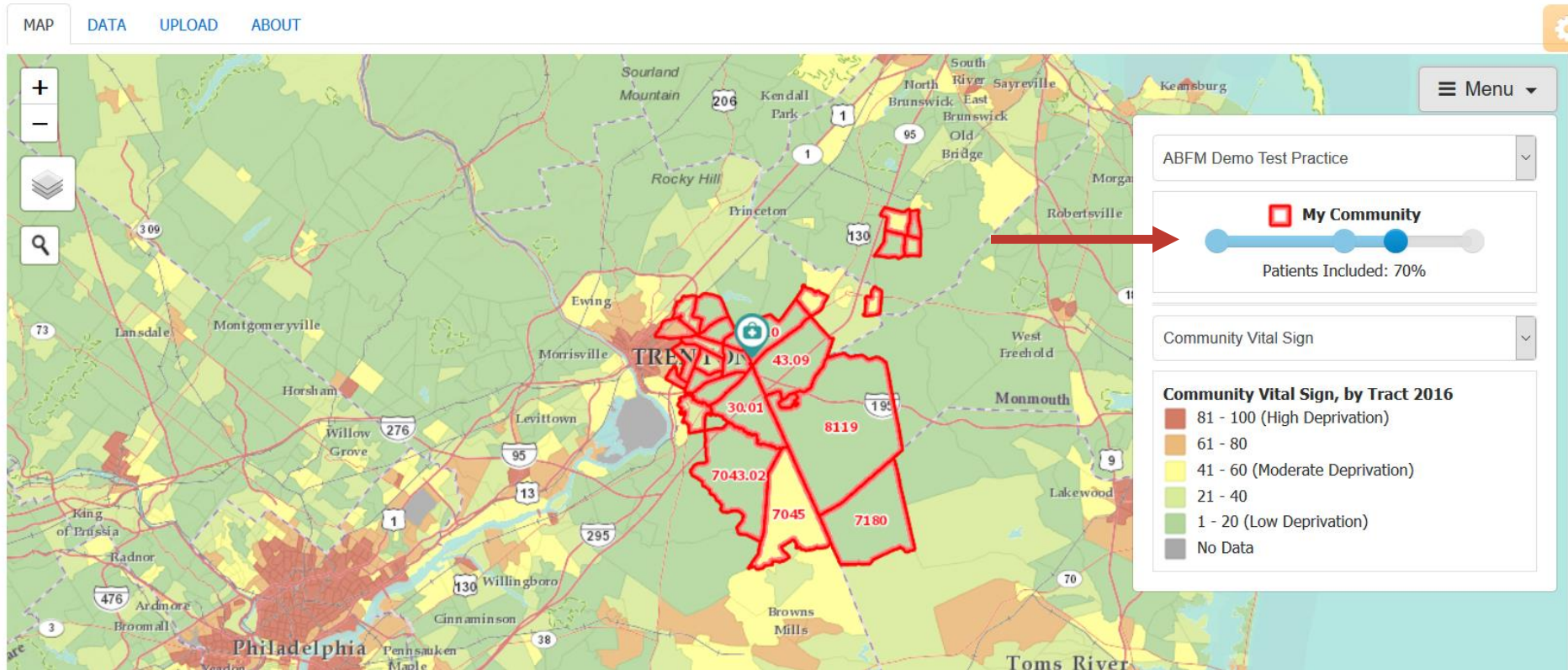
Community Vital Sign



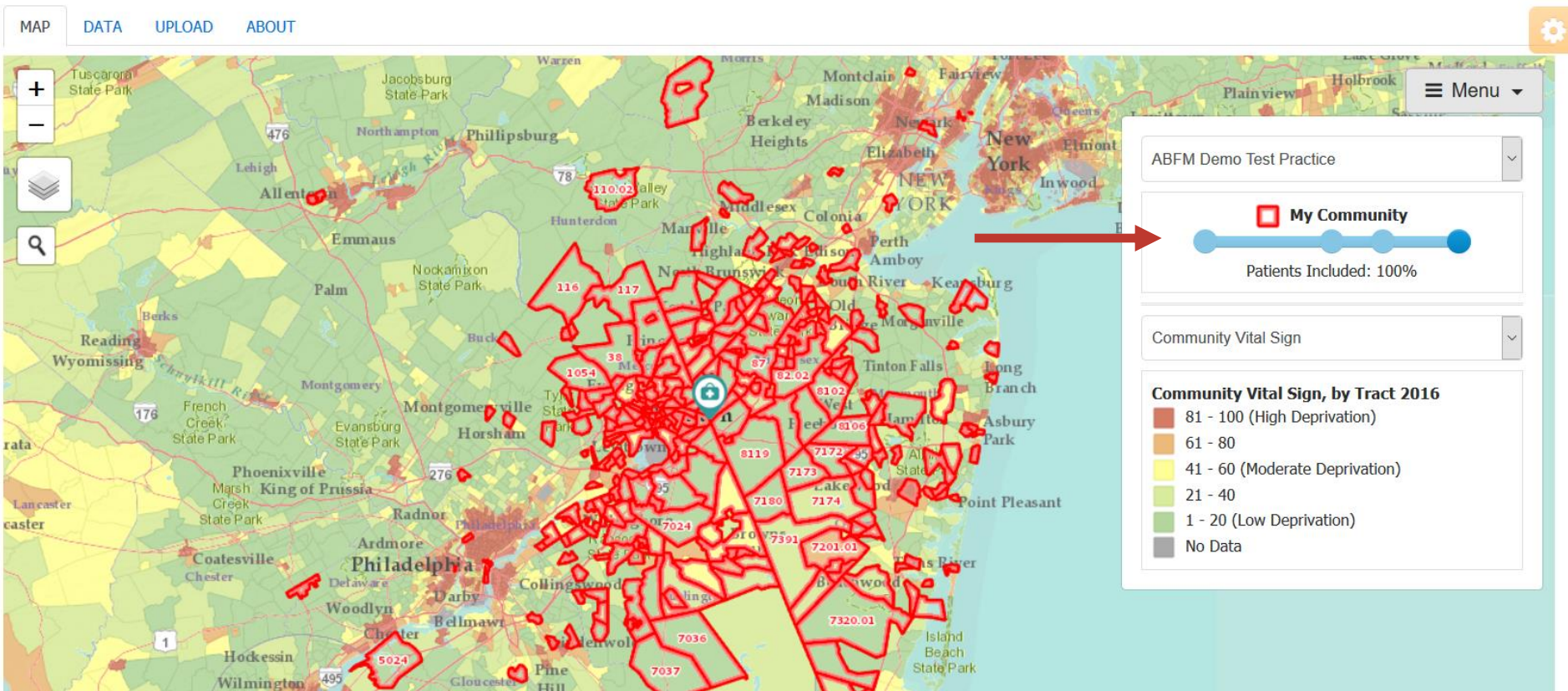
Community & Service Area



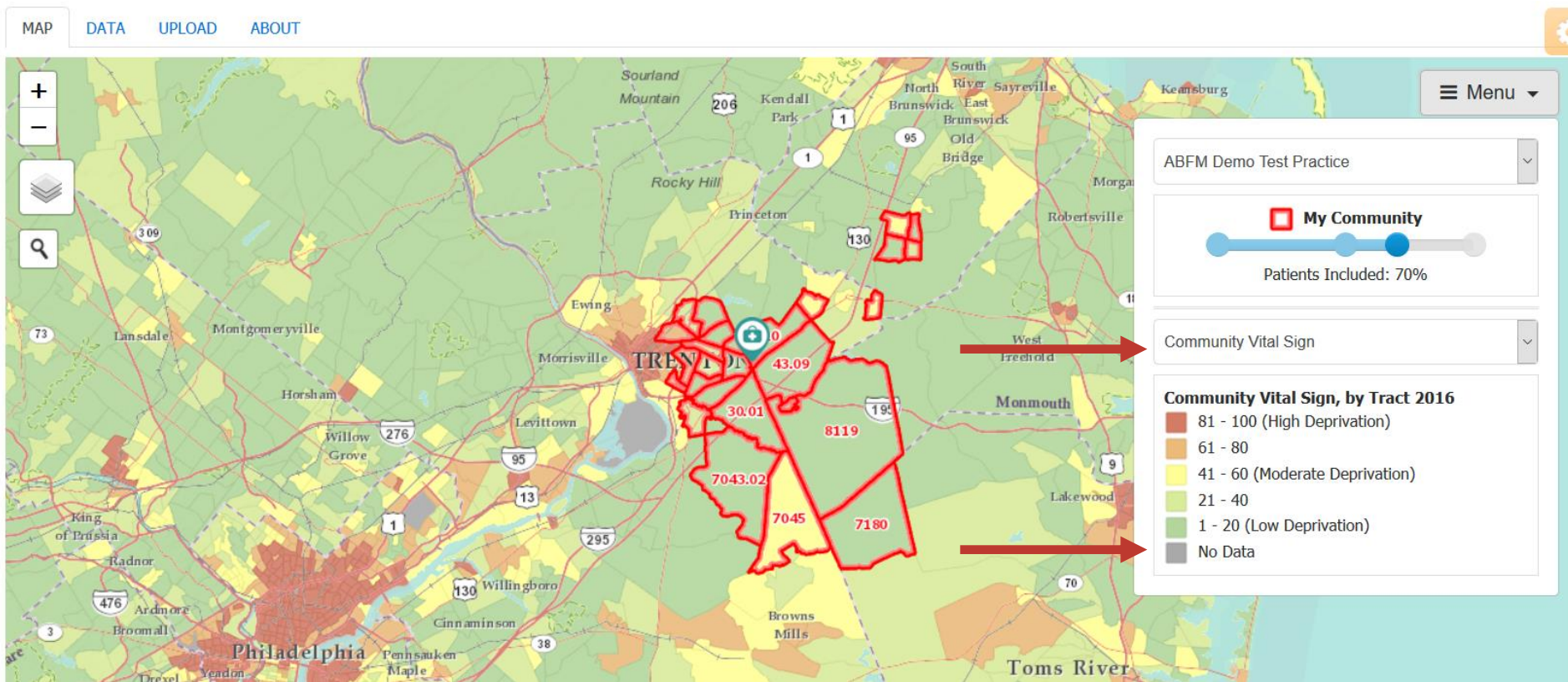
Community & Service Area



Community & Service Area



Community Variables



Social deprivation index

EXHIBIT 1

US Social Deprivation Index factors and weighting

Dimension of deprivation	Description of variables	Component weight
Single parent	Single-mother household	0.861
Poor	Population below poverty	0.828
No car	Rate of no car ownership	0.760
Education	Less than 12 years' schooling	0.753
Home ownership	Renter-occupied housing	0.734
Employment	Nonemployed	0.704
Crowding	Percent overcrowded	0.609
Race	Percent black	0.511
Age	High-need age group	0.379

SOURCE Butler DC, Petterson S, Phillips RL, Bazemore AW. Measures of social deprivation that predict health care access and need within a rational area of primary care service delivery (see Note 20 in text).

Phillips RL, Liaw W, Crampton P, et al. How Other Countries Use Deprivation Indices--And Why The United States Desperately Needs One. *Health Aff (Millwood)*. 2016;35(11):1991-1998. doi:10.1377/hlthaff.2016.0709.

CREATING YOUR SERVICE AREA MAP

SELECTING CENSUS TRACTS

BEGINNER 04

What do you know about where your patients **live**?

Think about...

Where they seek care

The stories they told you

Where they work or go to school

The pharmacies they used

Any administrative data you have seen

Selecting Census Tracts

MAP DATA UPLOAD ABOUT

Menu

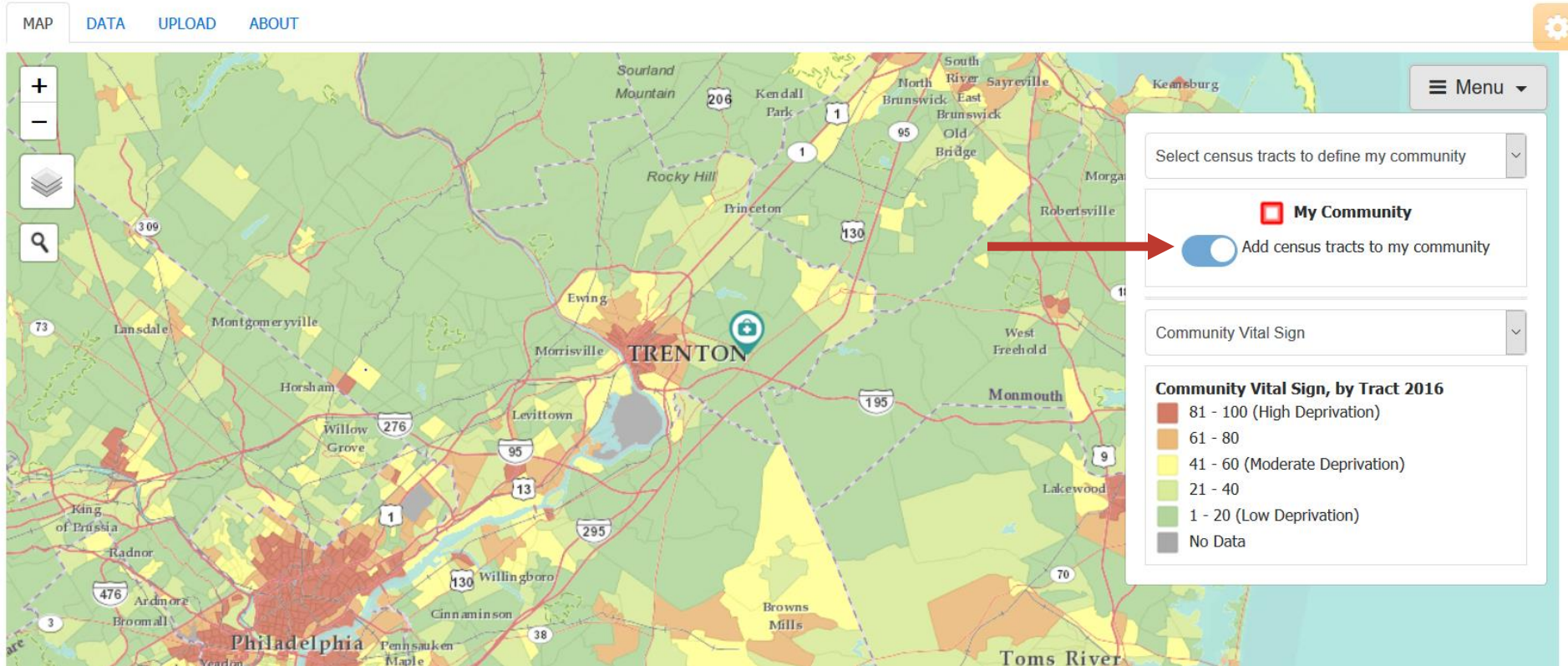
Select census tracts to define my community

- Institution14
- Institution15
- Institution16
- Institution17
- Institution18
- Institution19
- Institution2
- Institution20
- Institution21
- Institution3
- Institution4
- Institution5
- Institution6
- Institution7
- Institution8
- Institution9

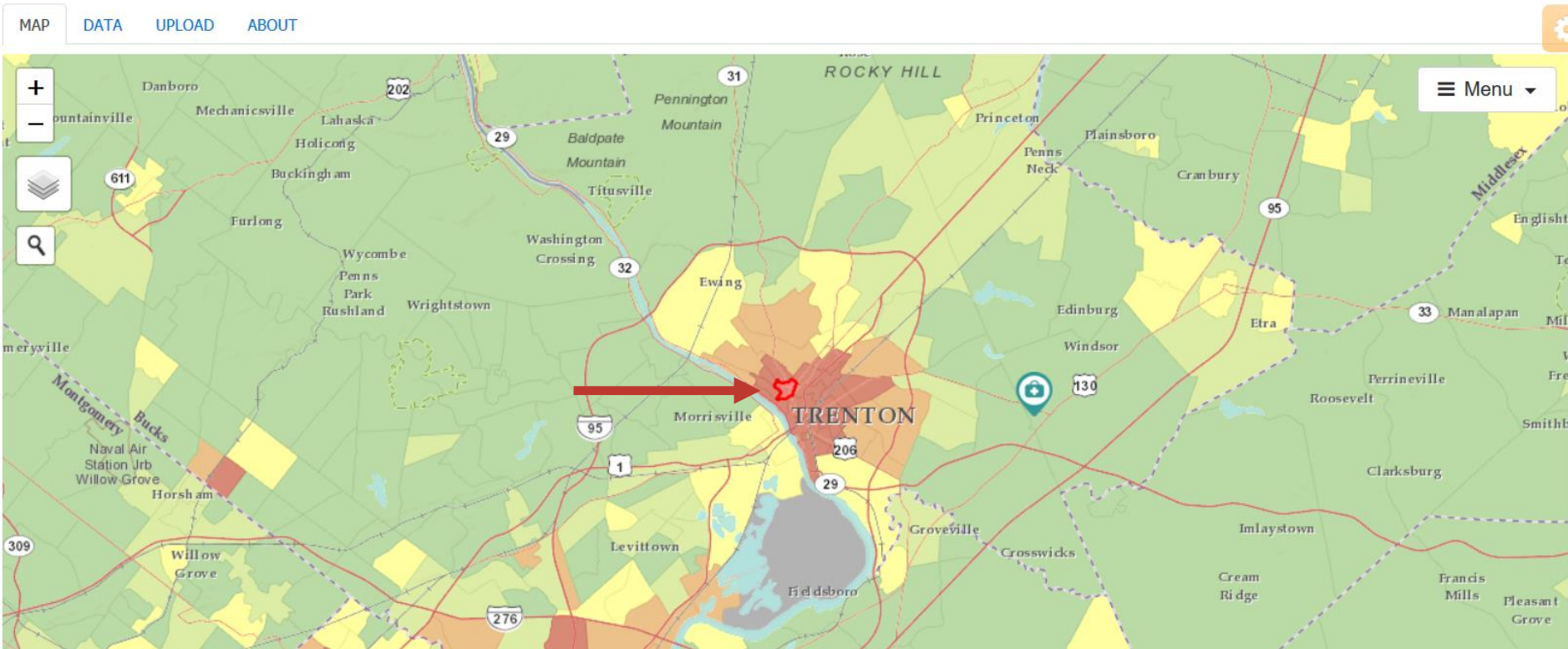
Construct My Community

- Select census tracts to define my community
- Upload a table of patient addresses

Selecting Census Tracts

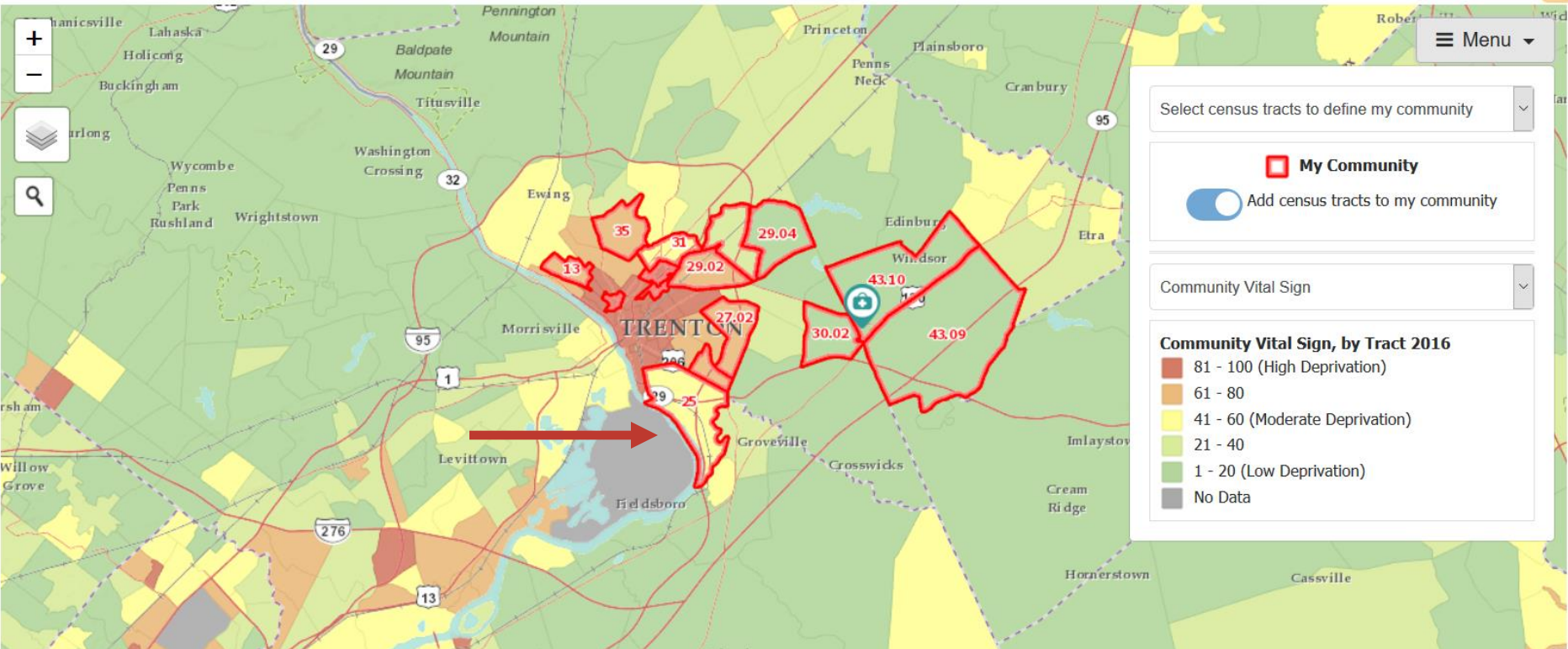


Selecting Census Tracts



Selecting Census Tracts

MAP DATA UPLOAD ABOUT



Menu

Select census tracts to define my community

My Community

Add census tracts to my community

Community Vital Sign

Community Vital Sign, by Tract 2016

- 81 - 100 (High Deprivation)
- 61 - 80
- 41 - 60 (Moderate Deprivation)
- 21 - 40
- 1 - 20 (Low Deprivation)
- No Data

Selecting Census Tracts

MAP DATA UPLOAD ABOUT

Census Tract 43.09, Mercer County, NJ

Patients	0
Households with No Vehicle	3%
Nonemployed Workers	2.37%
Overcrowded Housing	24.53%
Population Below the Poverty Level	0
Population with No High School Diploma	1.07%
Renter-Occupied Housing Units	3.23%
Single Parent Households with Children	14.53%
Local Resources (Aunt BERTHA)	11.67

Community Vital Sign, by Tract 2016

- 81 - 100 (High Deprivation)
- 61 - 80
- 41 - 60 (Moderate Deprivation)
- 21 - 40
- 1 - 20 (Low Deprivation)
- No Data

Menu

Select census tracts to define my community

My Community

Add census tracts to my community

Community Vital Sign

Selecting Census Tracts

MAP DATA UPLOAD ABOUT



Download Table

State	County	Census Tract	Patients (%)	Households with No Vehicle (%)	Nonemployed Workers (%)	Overcrowded Housing (%)	Population Below the Poverty Level (%)	Population with No High School Diploma (%)	Renter-Occupied Housing Units (%)	Single Parent Households with Children (%)	Local Resources (Aunt BERTHA)
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NJ	Mercer	29.02		63	9.2	27.73	2.34	8.14	8.85	48.55	55.98
NJ	Mercer	19		99	36.53	44.12	11.48	54.17	36.21	55.95	53.31
NJ	Mercer	18		92	17.16	43.66	8.89	30.36	27.52	62.95	48.26
NJ	Mercer	31		52	8.81	24.98	3.33	8.94	11.63	30.3	27.48
NJ	Mercer	35		66	19.21	30.29	2.6	14.27	12.12	29.77	26.99
NJ	Mercer	13		69	18.27	61.8	0.71	13.62	17.12	29.66	53.07
NJ	Mercer	27.02		69	11.28	31.67	3.88	12.31	11.99	60.55	36.08
NJ	Mercer	26.02		66	10.65	22.26	0.98	12.88	11.5	40.88	50.58
NJ	Mercer	25		48	5.18	33.36	3.68	4.39	14.57	23.92	27.26
NJ	Mercer	29.04		11	3.94	20.93		1.77	7.52	18.96	22.08
NJ	Mercer	29.03		33	3.71	30.46	2.21	11.59	13.74	12.14	19.88

CREATING YOUR SERVICE AREA MAP

UPLOADING ADDRESSES

BEGINNER 04

Menu

MAP DATA UPLOAD ABOUT

Census Tract 43.09, Mercer County, NJ

Patients	0
Households with No Vehicle	3%
Nonemployed Workers	2.37%
Overcrowded Housing	24.53%
Population Below the Poverty Level	0
Population with No High School Diploma	1.07%
Renter-Occupied Housing Units	3.23%
Single Parent Households with Children	14.53%
Local Resources (Aunt BERTHA)	11.67

Select census tracts to define my community

- Institution14
- Institution15
- Institution16
- Institution17
- Institution18
- Institution19
- Institution20
- Institution21
- Institution3
- Institution4
- Institution5
- Institution6
- Institution7
- Institution8
- Institution9

Construct My Community

- Select census tracts to define my community
- Upload a table of patient addresses

Creating your service area map using addresses

- 1) Obtain a list of patient addresses
- 2) Insert them into a properly formatted spreadsheet
- 3) Upload the addresses into PHATE
- 4) View your service area map

Step 1: Obtain a list of patient addresses

Step 2: Insert them into a properly formatted spreadsheet

	A	B	C	D
1	Address	City	State	ZIP
2	4020 Koehler Street #52	Houston	Texas	77007
3	1701 Chestnut Street	Houston	Texas	77009
4	1701 Chestnut Street	Houston	Texas	77009
5	1701 Chestnut Street	Houston	Texas	77009
6	1701 Chestnut Street	Houston	Texas	77009
7	4400 Fulton Street	Houston	Texas	77009
8	4400 Fulton Street	Houston	Texas	77009
9	1815 Gano Street	Houston	Texas	77009
10	1815 Gano Street	Houston	Texas	77009
11	1701 Chestnut Street	Houston	Texas	77009
12	1800 South Street #1	Houston	Texas	77009
13	6207 North Main Street	Houston	Texas	77009
14	6207 North Main Street	Houston	Texas	77009
15	6207 North Main Street	Houston	Texas	77009
16	6207 North Main Street	Houston	Texas	77009
17	901 Hays Street	Houston	Texas	77009
18	3506 North Main Street	Houston	Texas	77009
19	4400 Fulton Street	Houston	Texas	77009
20	1108 East 16th Street	Houston	Texas	77009
21	1108 East 16th Street	Houston	Texas	77009
22	1815 Gano Street	Houston	Texas	77009
23	1815 Gano Street	Houston	Texas	77009
24	1815 Gano Street	Houston	Texas	77009



Column labels:
Address
City
State
Zip

Health Insurance Portability and Accountability Act of 1996

- The spreadsheet should not include:
 - Patient medical record numbers
 - Names
 - Birthdates
 - Social security numbers
 - Health information
- For more information about HIPAA, please consult this document:
<https://www.hhs.gov/sites/default/files/privacysummary.pdf>

Step 3: Upload the addresses into PHATE

MAP DATA **UPLOAD** ABOUT

Upload Patient Locations

You may upload a table of patient addresses (street address, city, state and ZIP code) to find the community of your practice. Your table can be in Microsoft Excel (.xls, .xlsx) format or a Comma Separated Values (.csv) file.

The column names must be contained in the first row of your table. Your uploaded address data will only be used to find the census tracts that your patients reside, and will not be stored.

NO personally identifiable information should be uploaded, e.g., patient medical record number (MRN), name, birthdate, social security number, health information and etc..

Click the button below to select the data file you want to upload. Or drag the file from your local drive to the button.

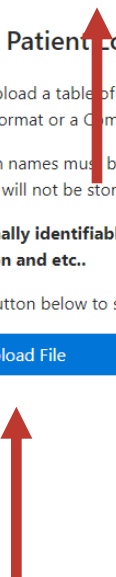
[Upload File](#)

My Uploads

Select a patient data to map the community

ABFM.xlsx (10/11/2017) ▾

[Map Community](#) [Delete Data](#)



Step 3: Upload the addresses into PHATE

MAP DATA **UPLOAD** ABOUT

Upload Patient Locations

Select Address Columns for Geocoding

Street Address	Address
City	City
State	State
ZIP Code	ZIP
Country (if global address)	

Start Geocoding

Cancel



Step 3: Upload the addresses into PHATE

MAP

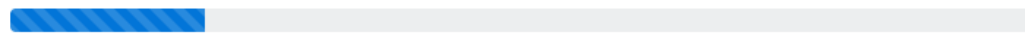
DATA

UPLOAD

ABOUT

Upload Patient Locations

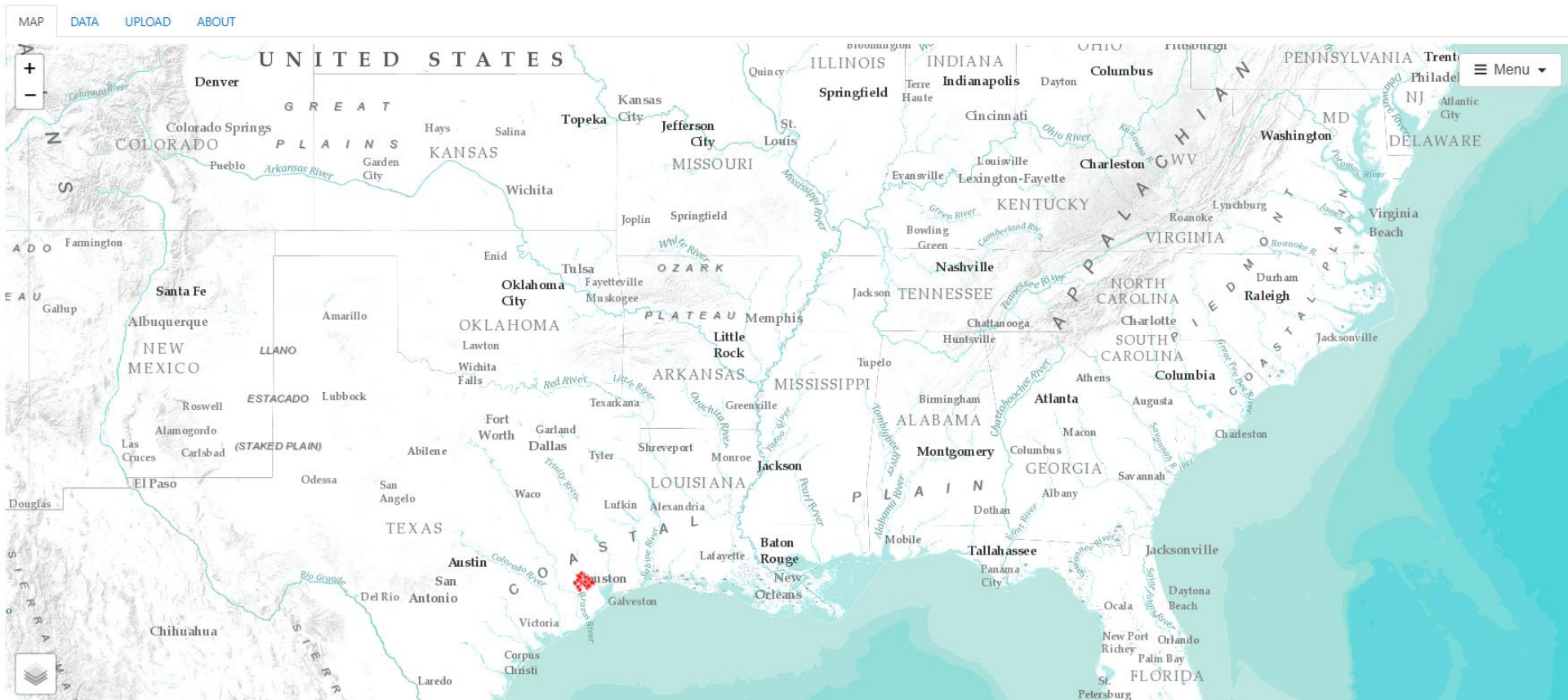
Processing uploaded data file and geocoding the addresses. Please be patient, this could take a few minutes.



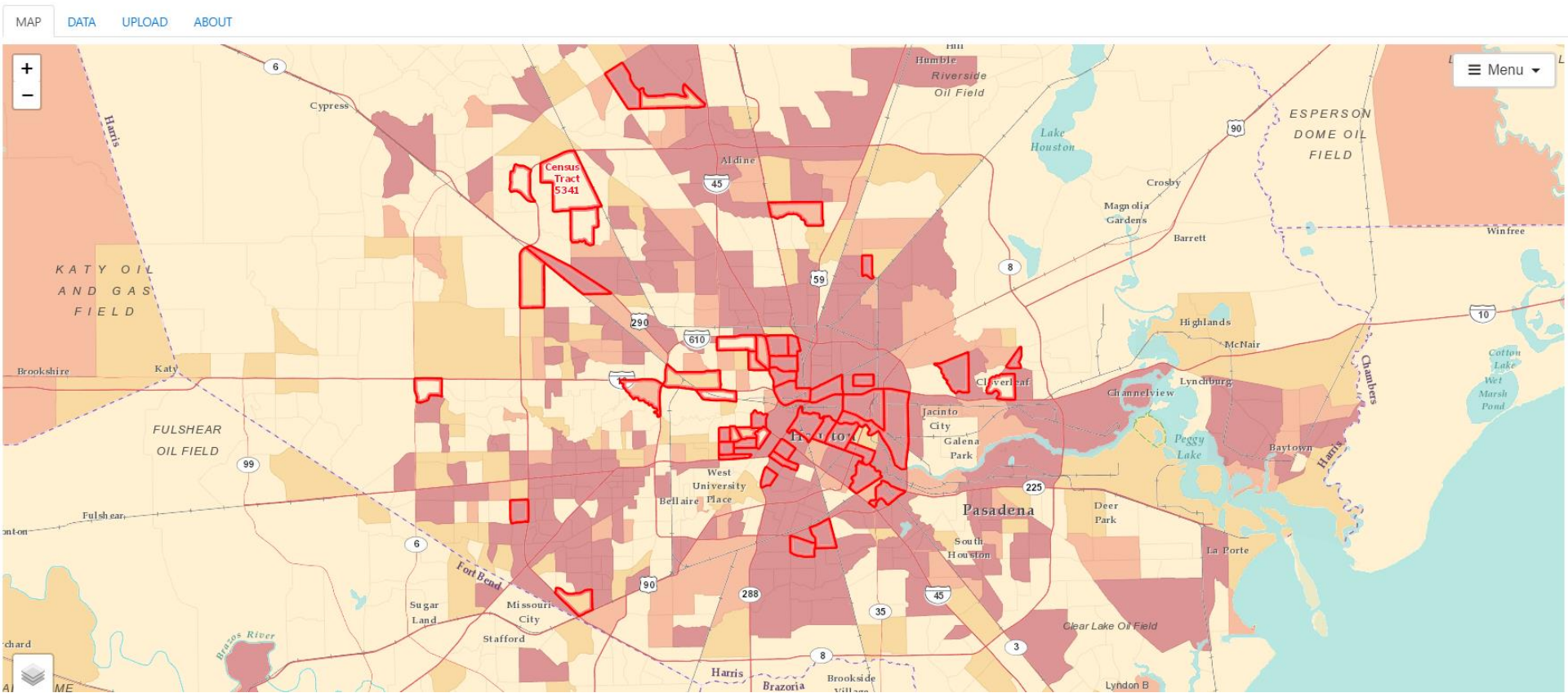
Records completed: 34 of 180

Cancel Geocoding

Step 4: View your service area map



Step 4: View your service area map



Take Home Points

- You can learn about your community and your practice's service area by using the My Community tool
- There are three ways to create your service area:
 - Using PRIME Registry data
 - Selecting census tracts
 - Uploading addresses

Nuts and Bolts 04: How to use My Community Learning Objectives

- Define service area
- Demonstrate competency in creating a service area map
- Demonstrate competency in creating a spreadsheet that can be uploaded into PHATE

Relevant family medicine milestones

Family Medicine Milestone
Identifies specific community characteristics that impact specific patients' health.
Recognizes social context and environment, and how a community's public policy decisions affect individual and community health.
Lists ways in which community characteristics and resources affect the health of patients and communities.
Identifies the roles of behavior, social determinants of health, and genetics as factors in health promotion and disease prevention.
Integrates practice and community data to improve population health.
Uses an organized method, such as a registry, to assess and manage population health.
Uses experience with patient panels to address population health.
Understands the role of registries in managing patient and population health.
Maintains key patient-specific databases, such as problem lists, medications, health maintenance, chronic disease registries.
Collaborates with other practices, public health, and community-based organizations to educate the public, guide policies, and implement and evaluate community initiatives.
Facilitates patients' and families' efforts at self-management of their chronic conditions, including use of community resources and services.
Partners with the community to improve population health.

Relevant nurse practitioner competencies

Competency
Analyze epidemiological, biostatistical, environmental, and other appropriate scientific data related to individual, aggregate, and population health.
Anticipates variations in practice and is proactive in implementing interventions to ensure quality
Use information technology and research methods appropriately to collect appropriate and accurate data to generate evidence for nursing practice, inform and guide the design of databases that generate meaningful evidence for nursing practice, analyze data from practice, design evidence-based interventions, predict and analyze outcomes, examine patterns of behavior and outcomes, and identify gaps in evidence for practice.
Integrates appropriate technologies for knowledge management to improve health care.
Uses technology systems that capture data on variables for the evaluation of nursing care.