



# Population Health Assessment Engine

# Population Health Assessment Engine Curriculum

## BACKGROUND

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01

Introduction to  
Population Health

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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

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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

# GETTING THE MOST OUT OF COMMUNITY HOTSPOTS

ADVANCED 07

# Next Level Stuff 07: Getting the Most out of Community HotSpots

## Learning Objectives

- List three hot spot census tracts
- Describe how hot spots relate to community characteristics
- List three ways to address hot spots

# Relevant family medicine milestones

<b>Family Medicine Milestone</b>
Identifies specific community characteristics that impact specific patients' health.
Collaborates with the participants necessary to address important health problems for both individuals and communities.
Identifies the roles of behavior, social determinants of health, and genetics as factors in health promotion and disease prevention.
Mobilizes team members and links patients with community resources to achieve health promotion and disease prevention goals.
Partners with the community to improve population 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.
Integrates practice and community data to improve population health.
Uses an organized method, such as a registry, to assess and manage population health.
Facilitates patients' and families' efforts at self- management of their chronic conditions, including use of community resources and services.
Uses experience with patient panels to address population health.
Uses quality markers to evaluate the care of patients with chronic conditions.
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.
Identifies health inequities and social determinants of health and their impact on individual and family health.
Collaborates with other practices, public health, and community- based organizations to educate the public, guide policies, and implement and evaluate community initiatives.
Recognizes inefficiencies, inequities, variation, and quality gaps in health care delivery.
Tracks and monitors disease prevention and health promotion for the practice population.

# Relevant nurse practitioner competencies

<b>Competency</b>
Uses technology systems that capture data on variables for the evaluation of nursing care.
Anticipates variations in practice and is proactive in implementing interventions to ensure quality
Applies clinical investigative skills to improve health outcomes.
Analyze epidemiological, biostatistical, environmental, and other appropriate scientific data related to individual, aggregate, and population health.
Use information technology and research methods appropriately to collect appropriate and accurate data to generate
Integrates appropriate technologies for knowledge management to improve health care.
Ensure accountability for quality of health care and patient safety for populations with whom they work.
Use conceptual and analytical skills in evaluating the links among practice, organizational, population, fiscal, and policy issues
Develop and evaluate care delivery approaches that meet current and future needs of patient populations based on scientific findings in nursing and other clinical sciences, as well as organizational, political, and economic sciences.

# Next Level Stuff 07: Getting the Most out of Community HotSpots

## Outline

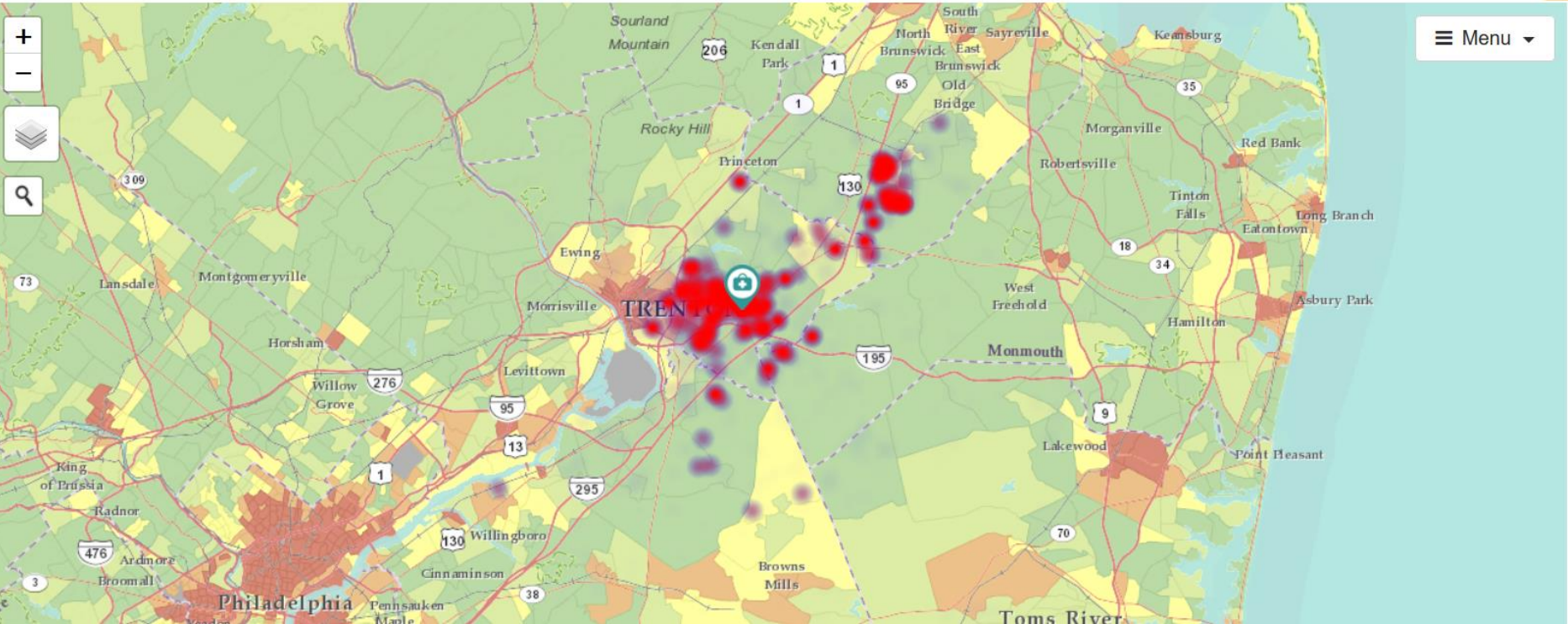
- I. Learning about hot spots
- II. Integrating My Community and Community HotSpots
- III. What can be done about hot spots?

# Community HotSpots

MAP DATA ABOUT

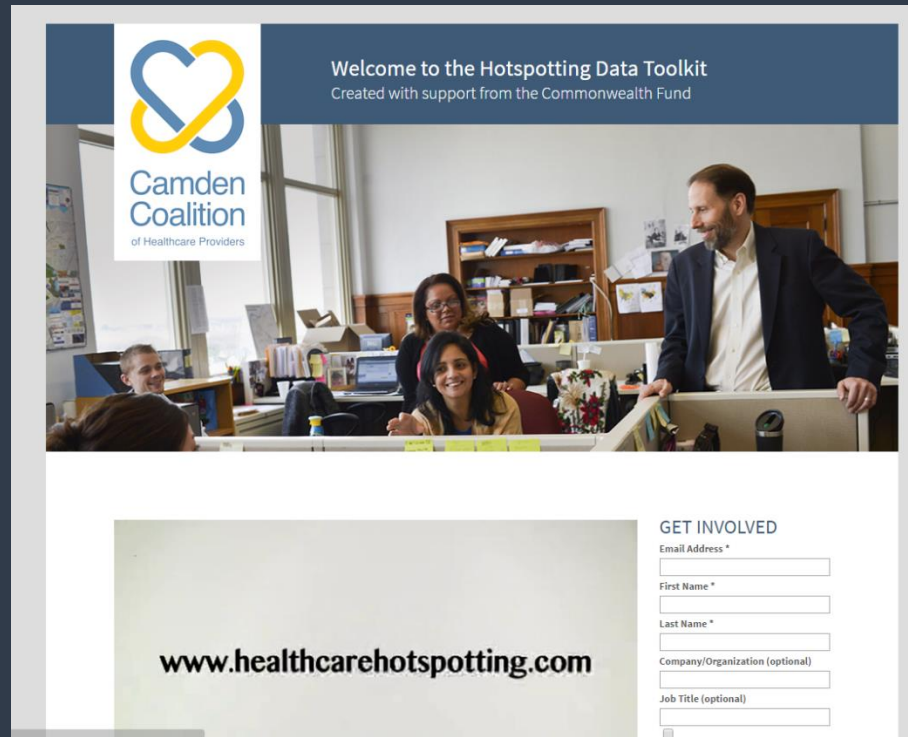


Menu ▾



What you can do using Community HotSpots:

- View community characteristics
- View hot spots (clusters of poor disease control or gaps in quality) from your electronic health record data
- View how hot spots relate to community characteristics
- Download community characteristics



## Hotspotting

The use of data to reallocate resources to a small subset of high-need, high-cost patients

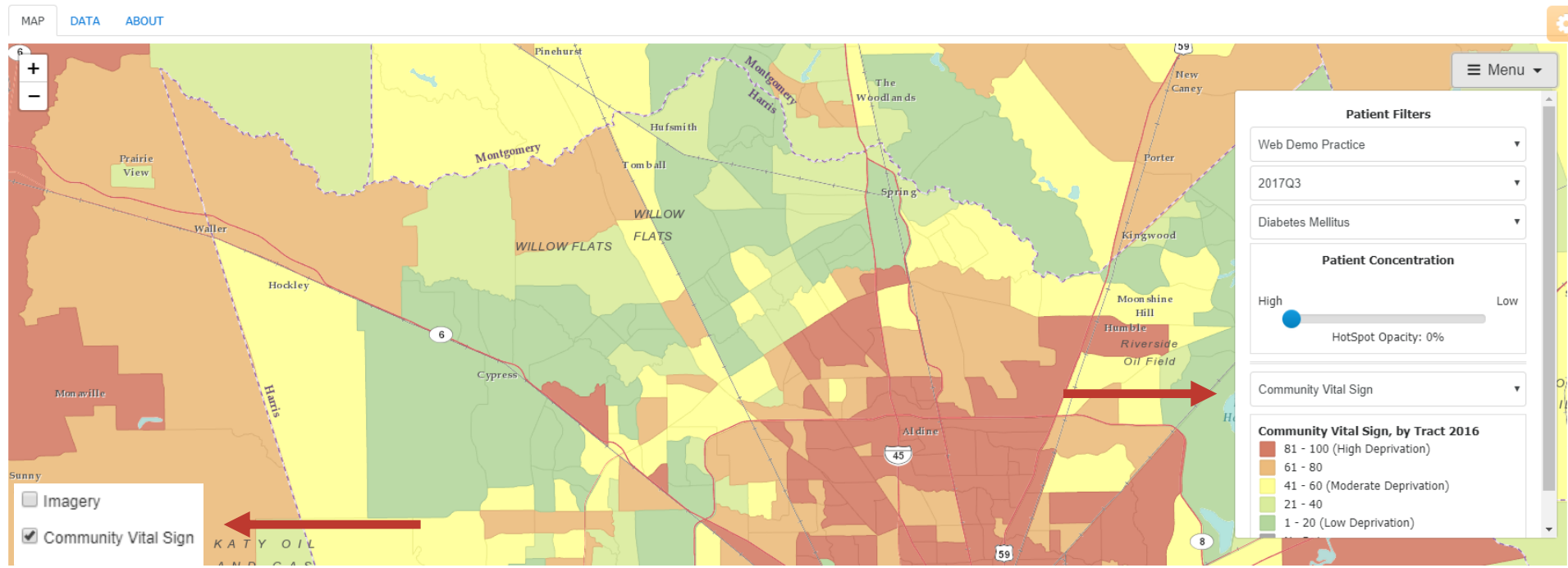


**Why** did you select these  
census tracts?

**What** do you know about  
these neighborhoods?

# Identifying Hot Spots

## Activity #1



Consider the census tracts that you wrote down.

Does having the additional neighborhood data

**change your prediction** about where the hot spots

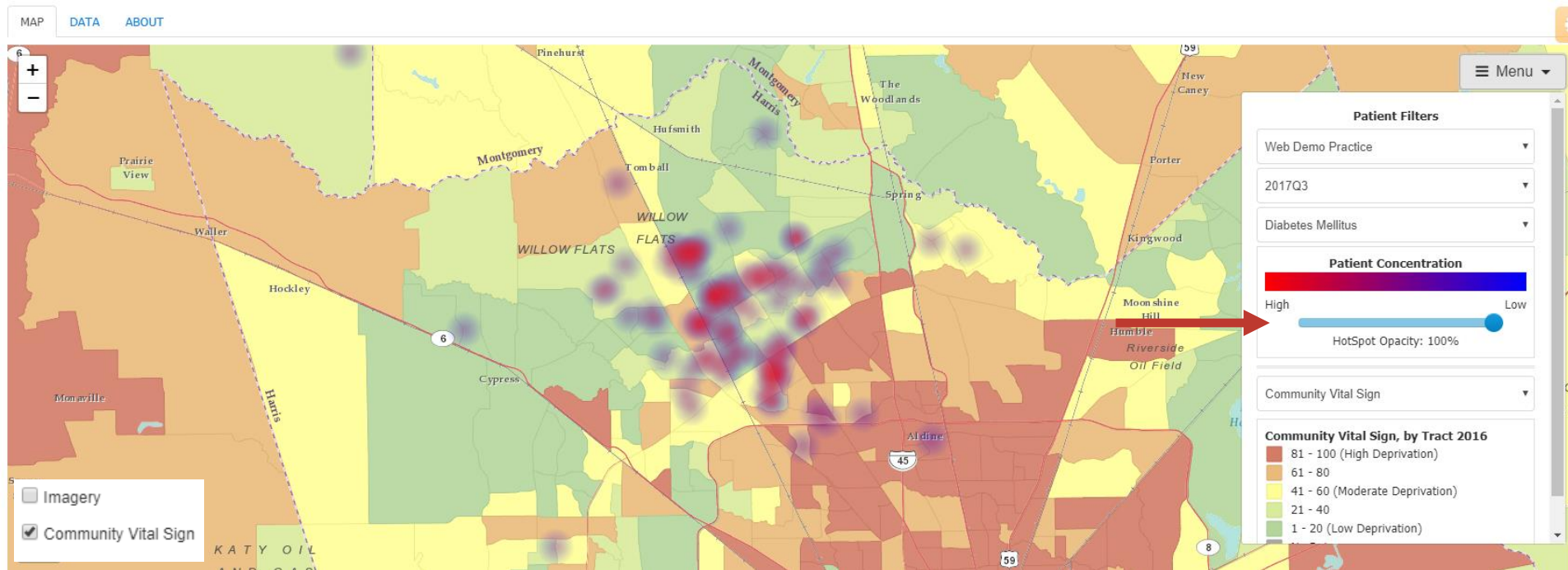
will be located?

If so, how did your prediction **change**?

If not, why did it **not change**?

# Identifying Hot Spots

## Activity #1

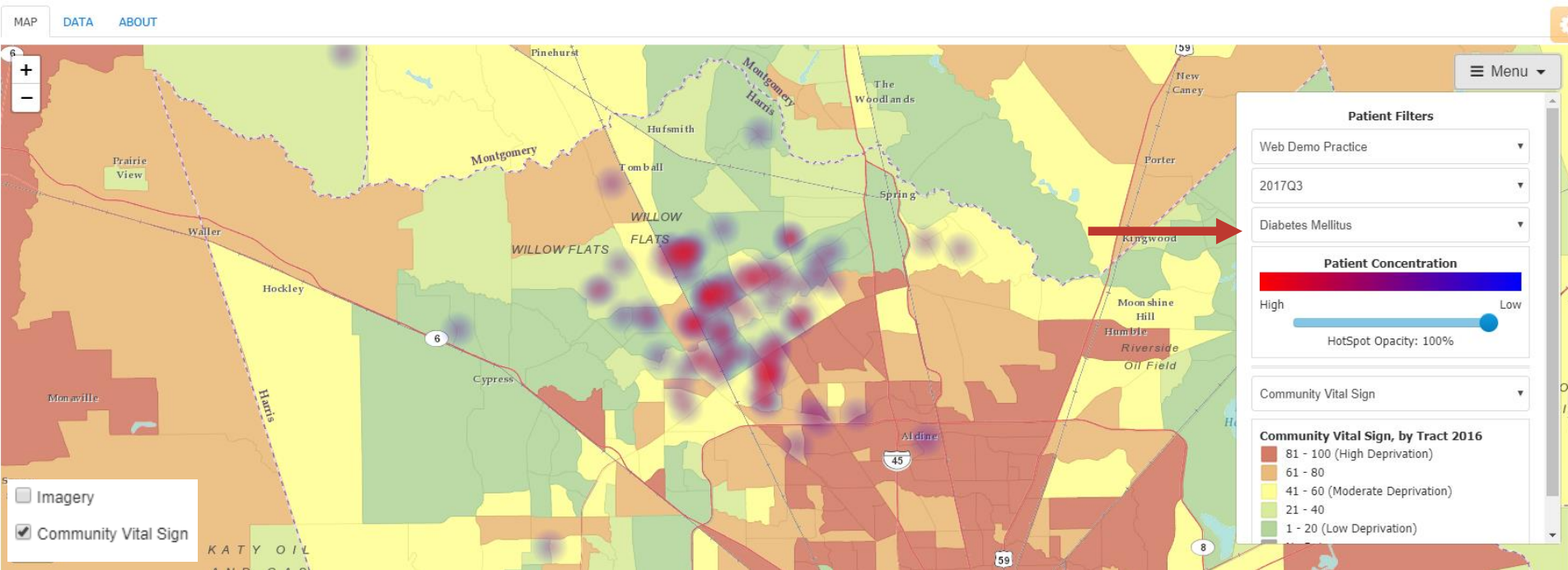


**Compare** your predicted list of hot spot census tracts with the actual census tracts.

To what extent are they **similar and different?**

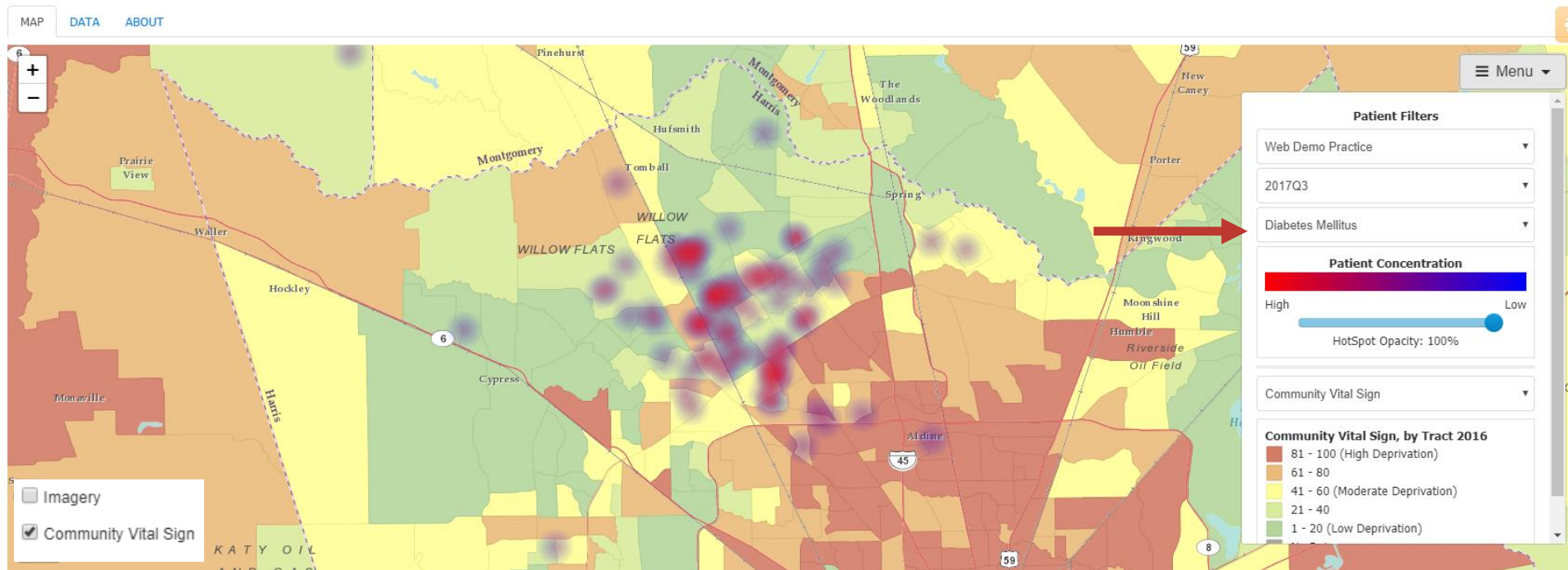
# Identifying Hot Spots

## Activity #1



# Identifying Hot Spots

## Activity #1

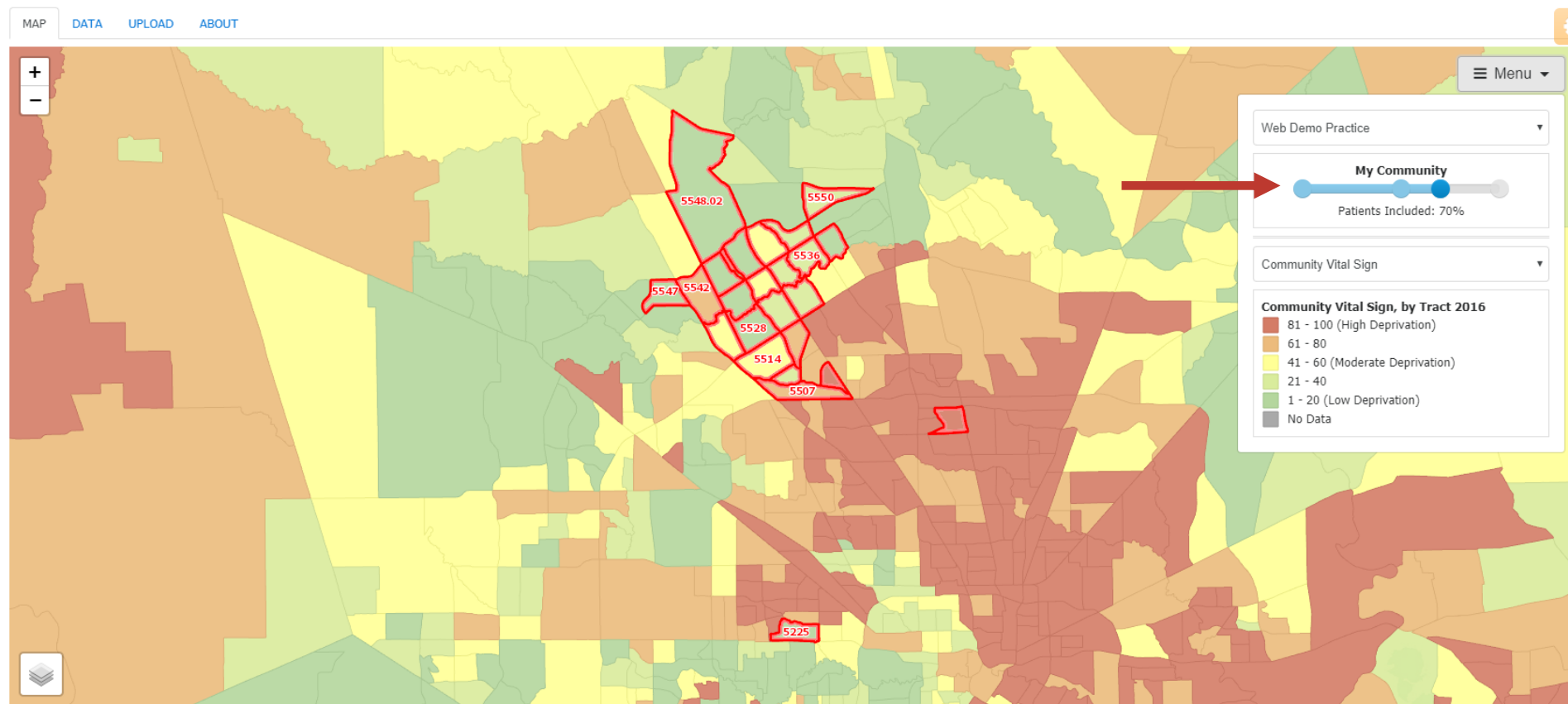


How did the map **change**?

**What** accounts for any differences?


# Integrating My Community and Community HotSpots

## Activity #2



# Integrating My Community and Community HotSpots

## Activity #2

MAP DATA UPLOAD ABOUT 

[Download Table](#)

State	County	Census Tract	Patients (%)	Community Vital Sign	Households with No Vehicle (%)	Overcrowded Housing (%)	Population Below the Poverty Level (%)	Population with No High School Diploma (%)	Renter-Occupied Housing Units (%)	Single Parent Households with Children (%)	Unemployed Workers (%)	Local Resources	Aunt BERTHA
US					9.09	3.33	15.47	13.48	36.1	34.61	8.28		
NM					5.96	3.53	21.01	16.32	31.94	41.35	9.22		
TX					5.8	4.87	17.25	17.93	37.77	34.05	7.01		
TX	Harris	5548.02	9.47	18	0.38	0.68	9.29	6.74	18.17	11.69	6.88	health, transit, housing, care, food, work	
TX	Harris	5514	5.26	42	3.72	0.85	4.34	14.77	45.2	31.05	1.85	health, transit, housing, care, food, work	
TX	Harris	5539	4.21	7	1.06		2.5	3.43	8.41	33.17	6.04	health, transit, housing, care, food, work	
TX	Harris	5541.02	4.21	14	1.43	1.91	4.19	8.59	11.22	24.01	3.39	health, transit, housing, care, food, work	
TX	Harris	5527	4.21	44	10.86	0.75	8	3.82	65.62	29.24	3.86	health, transit, housing, care, food, work	
TX	Harris	5538.02	4.21	45	2.67	2.6	10.2	13.73	33.94	27.39	4.44	health, transit, housing, care, food, work	
TX	Harris	5540.02	3.16	6	0.72	0.79	6.48	5.18	4.07	16.4	5.22	health, transit, housing, care, food, work	
TX	Harris	5528	3.16	18	4.03	0.34	2.93	3.91	42.22	24.31	5.24	health, transit, housing, care, food, work	
TX	Harris	5542	3.16	61	3.11	4.55	9.32	13.93	58.96	42.21	7.19	health, transit, housing, care, food, work	
TX	Harris	5225	2.11	2	2.09	0.23	2.31	3.65	7.95	11.4	1.95	health, transit, housing, care, food, work	
TX	Harris	5547	2.11	10	2.79	0.83	2.53	2.76	22.24	14.96	3.64	health, transit, housing, care, food, work	
TX	Harris	5535	2.11	14	1.29	0.43	4.01	10.3	15.64	20.76	5	health, transit, housing, care, food, work	

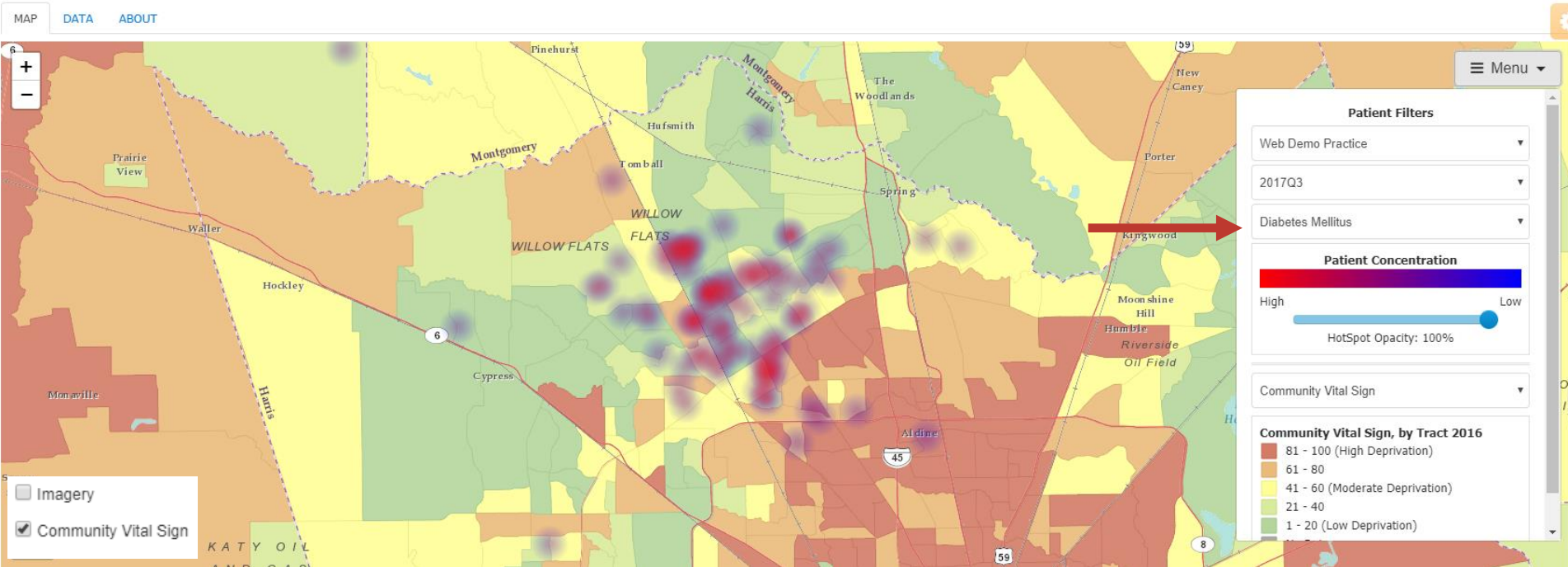
# Integrating My Community and Community HotSpots

## Activity #2

	A	B	C	D	E	F	G	H	I	J	K	L	M
	State	County	Census Tract	Patients (%)	Community Vital Sign	Households with No Vehicle (%)	Overcrowded Housing (%)	Population Below the Poverty Level (%)	Population with No High School Diploma (%)	Renter-Occupied Housing Units (%)	Single Parent Households with Children (%)	Unemployed Workers (%)	Local Resources (Aunt BERTHA)
1													
2	US					9.09	3.33	15.47	13.48	36.1	34.61	8.28	
3	NM					5.96	3.53	21.01	16.32	31.94	41.35	9.22	
4	TX					5.8	4.87	17.25	17.93	37.77	34.05	7.01	
5	TX	Harris	5548.02	9.47	18	0.38	0.68	9.29	6.74	18.17	11.69	6.88	health, transit, housing, care, food, work
6	TX	Harris	5514	5.26	42	3.72	0.85	4.34	14.77	45.2	31.05	1.85	health, transit, housing, care, food, work
7	TX	Harris	5539	4.21	7	1.06		2.5	3.43	8.41	33.17	6.04	health, transit, housing, care, food, work
8	TX	Harris	5538.02	4.21	45	2.67	2.6	10.2	13.73	33.94	27.39	4.44	health, transit, housing, care, food, work
9	TX	Harris	5527	4.21	44	10.86	0.75	8	3.82	65.62	29.24	3.86	health, transit, housing, care, food, work
10	TX	Harris	5541.02	4.21	14	1.43	1.91	4.19	8.59	11.22	24.01	3.39	health, transit, housing, care, food, work
11	TX	Harris	5540.02	3.16	6	0.72	0.79	6.48	5.18	4.07	16.4	5.22	health, transit, housing, care, food, work
12	TX	Harris	5542	3.16	61	3.11	4.55	9.32	13.93	58.96	42.21	7.19	health, transit, housing, care, food, work
13	TX	Harris	5528	3.16	18	4.03	0.34	2.93	3.91	42.22	24.31	5.24	health, transit, housing, care, food, work
14	TX	Harris	5538.01	2.11	23	3.4	4.23	9.07	10.21	13.85	11.53	2.64	health, transit, housing, care, food, work
15	TX	Harris	5513	2.11	24	1.82	1.56	4.63	13.93	17.72	22.14	2.97	health, transit, housing, care, food, work
16	TX	Harris	5225	2.11	2	2.09	0.23	2.31	3.65	7.95	11.4	1.95	health, transit, housing, care, food, work
17	TX	Harris	5530.01	2.11	39	5.06		6.91	15.05	35.07	40.62	4.81	health, transit, housing, care, food, work
18	TX	Harris	5535	2.11	14	1.29	0.43	4.01	10.3	15.64	20.76	5	health, transit, housing, care, food, work
19	TX	Harris	5512	2.11	66	6.18	1.95	16.23	16.68	47.4	35.07	5.07	health, transit, housing, care, food, work
20	TX	Harris	5536	2.11	28	4.44		3.03	4.77	48.04	18.88	10.89	health, transit, housing, care, food, work
21	TX	Harris	5529	2.11	37	3.55		11.76	4.99	34.51	60.93	5.39	health, transit, housing, care, food, work
22	TX	Harris	5550	2.11	30	2.12	4.04	4.92	13.69	20.98	26.04	5.22	health, transit, housing, care, food, work
23	TX	Harris	5547	2.11	10	2.79	0.83	2.53	2.76	22.24	14.96	3.64	health, transit, housing, care, food, work
24	TX	Harris	5541.01	1.05	4	0.48		2.87	5.38	1.19	16.84	5.99	health, transit, housing, care, food, work
25	TX	Harris	5507	1.05	62	1.89	8.32	14.72	23.9	20.31	46.09	6.1	health, transit, housing, care, food, work
26	TX	Polk	2103.01	1.05	50	1.42	0.77	17.7	23.72	15.83	35.7	12.71	health, transit, housing, care, food, work
27	TX	Harris	5540.01	1.05	53	11.57	6.44	7.97	9.55	57.17	33.81	4.69	health, transit, housing, care, food, work
28	TX	Harris	5508	1.05	93	9.17	6.9	27.55	26.35	52.37	51.55	14.68	health, transit, housing, care, food, work
29	TX	Harris	2225.02	1.05	87	7.69	8.4	28.72	43.52	25.1	49.45	12.24	health, transit, housing, care, food, work
30	TX	Harris	5537	1.05	40	1.28	6.06	12.58	7.46	28.53	22.94	6.03	health, transit, housing, care, food, work
31	TX	Fayette	9705	1.05	46	3.6	1.57	12.48	23.69	22.89	22.9	1.32	health, transit, housing, care, food, work

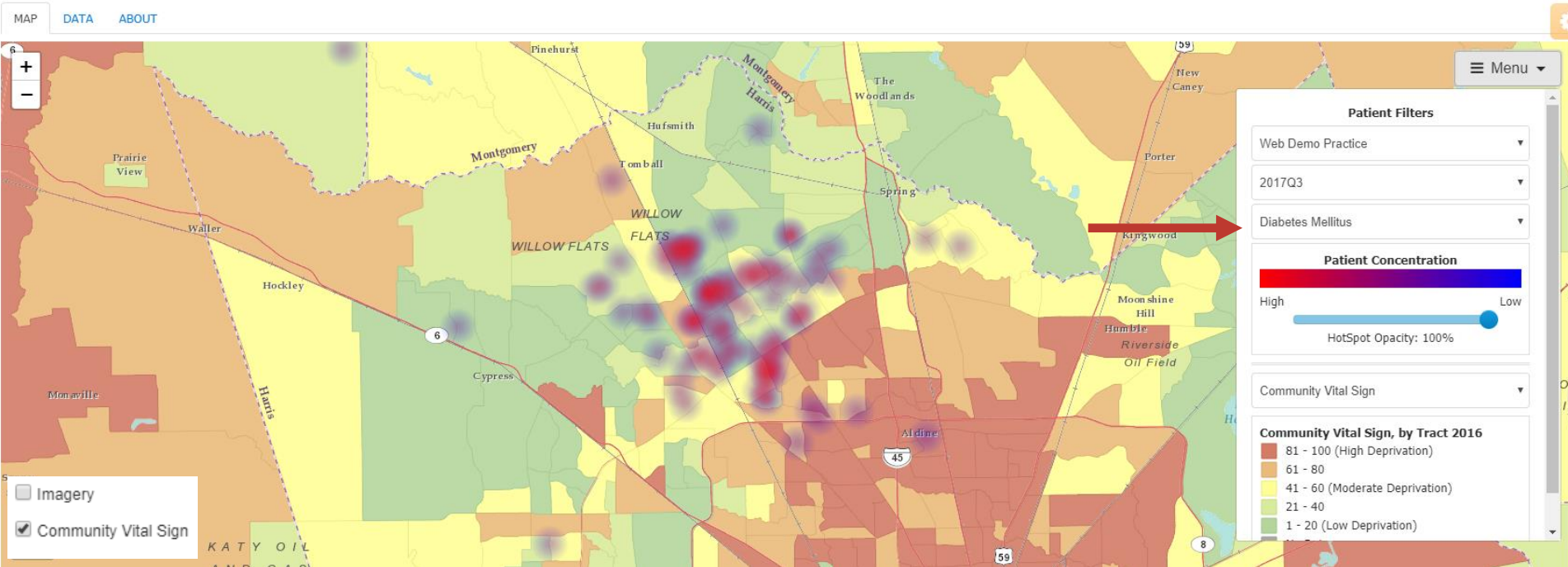
# Integrating My Community and Community HotSpots

## Activity #2



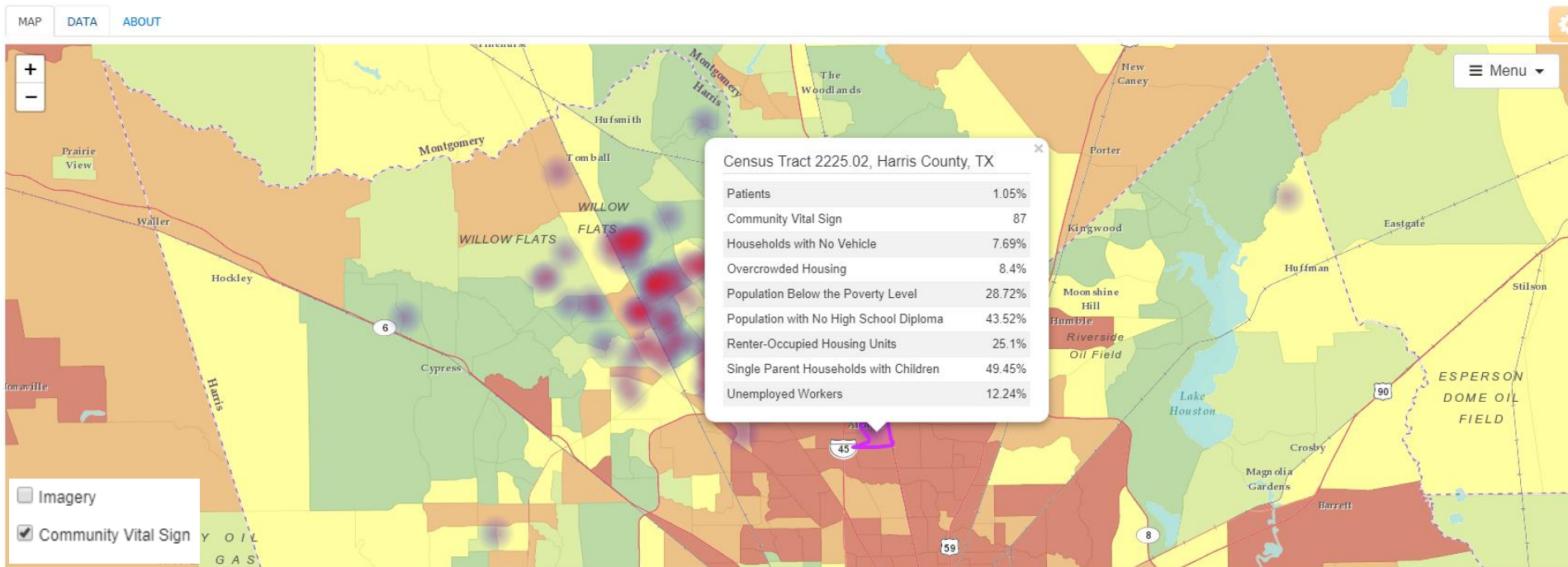
# Integrating My Community and Community HotSpots

## Activity #2



# Integrating My Community and Community HotSpots

## Activity #2



**What** do you know about  
these neighborhoods?

**Compare** the community characteristics of the hot spot census tracts with the other census tracts in the 70% service area.

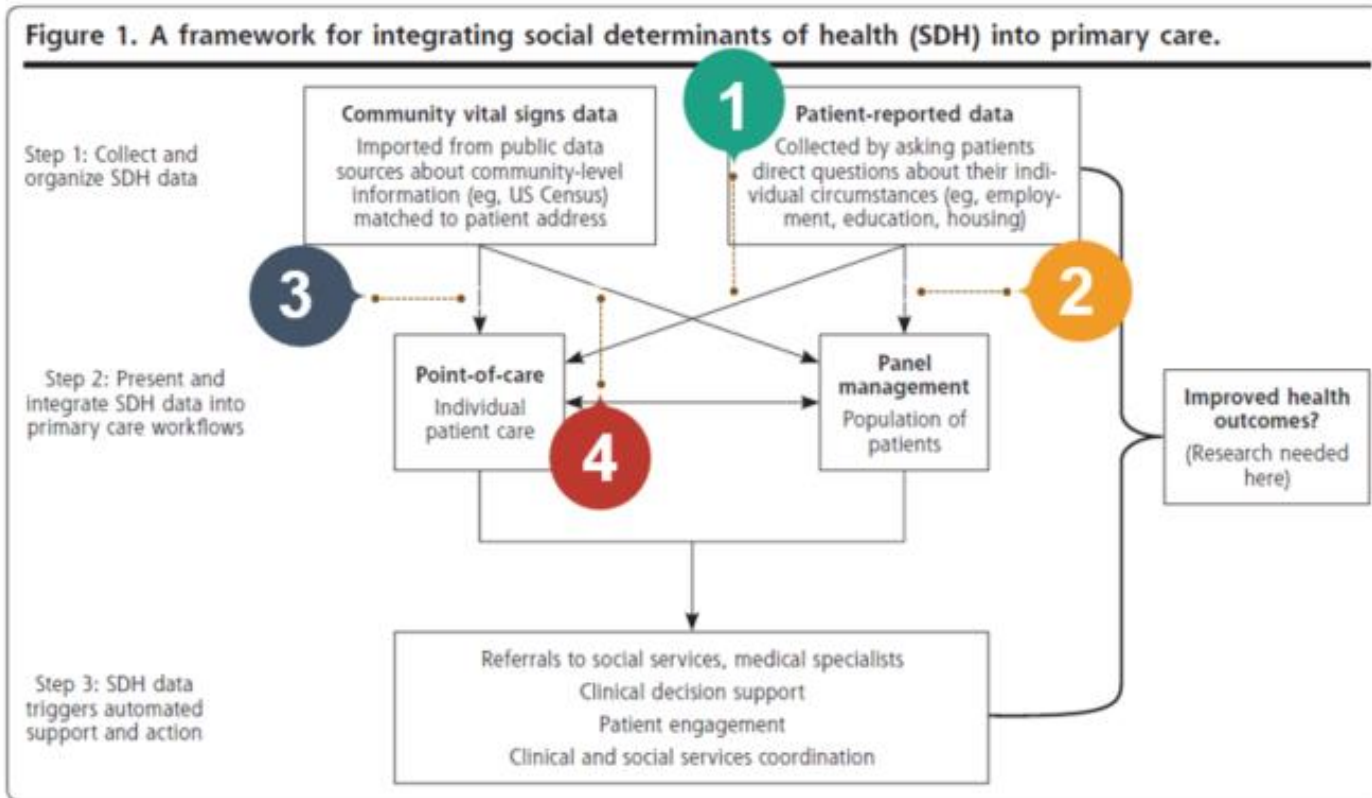
How are they **similar**? How are they **different**?

**Compare** the community characteristics of the hot spot census tracts with state and national averages.

How are they **similar**? How are they **different**?

# What can be done about hot spots?

## Activity #3



DeVoe JE, Bazemore AW, Cottrell EK, et al. Perspectives in Primary Care: A Conceptual Framework and Path for Integrating Social Determinants of Health Into Primary Care Practice. *Ann Fam Med.* 2016;14(2):104-108. doi:10.1370/afm.1903.

What can be done about hot spots?

## Activity #3

What are **three ways** you can change delivery to address hot spots?

# What can be done about hot spots?

## Activity #3



Download Table

State	County	Census Tract	Patients (%)	Community Vital Sign	Households with No Vehicle (%)	Overcrowded Housing (%)	Population Below the Poverty Level (%)	Population with No High School Diploma (%)	Renter-Occupied Housing Units (%)	Single Parent Households with Children (%)	Unemployed Workers (%)	Local Resources (Aunt BERTHA)
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TX	Harris	5535	2.11	14	1.29	0.43	4.01	10.3	15.64	20.76	5	health, transit, housing, care, food, work

**Which** community resource  
did you select?

How would you **partner**  
with this organization to  
change delivery?

# What can be done about hot spots?

## Activity #3

- EXAMPLE 1
- Use patient-reported data to better understand the unmet social needs of those living in hot spots



**PRAPARE: Protocol for Responding to and Assessing Patient Assets, Risks, and Experiences**  
 Paper Version of PRAPARE for Implementation As of September 2, 2016

<p><b>Personal Characteristics</b></p> <p>1. Are you Hispanic or Latino?</p> <table border="1"> <tr> <td><input type="checkbox"/> Yes</td> <td><input type="checkbox"/> No</td> <td><input type="checkbox"/> I choose not to answer this question</td> </tr> </table> <p>2. Which race(s) are you? Check all that apply.</p> <table border="1"> <tr> <td><input type="checkbox"/> Asian</td> <td><input type="checkbox"/> Native Hawaiian</td> </tr> <tr> <td><input type="checkbox"/> Pacific Islander</td> <td><input type="checkbox"/> Black/African American</td> </tr> <tr> <td><input type="checkbox"/> White</td> <td><input type="checkbox"/> American Indian/Alaskan Native</td> </tr> <tr> <td colspan="2">Other (please write):</td> </tr> <tr> <td colspan="2"><input type="checkbox"/> I choose not to answer this question</td> </tr> </table> <p>3. At any point in the past 2 years, has season or migrant farm work been your or your family's main source of income?</p>	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> I choose not to answer this question	<input type="checkbox"/> Asian	<input type="checkbox"/> Native Hawaiian	<input type="checkbox"/> Pacific Islander	<input type="checkbox"/> Black/African American	<input type="checkbox"/> White	<input type="checkbox"/> American Indian/Alaskan Native	Other (please write):		<input type="checkbox"/> I choose not to answer this question		<p>7. What is your housing situation today?</p> <table border="1"> <tr> <td><input type="checkbox"/> I have housing</td> </tr> <tr> <td><input type="checkbox"/> I do not have housing (staying with others, in a hotel, in a shelter, living outside on the street, on a beach, in a car, or in a park)</td> </tr> <tr> <td><input type="checkbox"/> I choose not to answer this question</td> </tr> </table> <p>8. Are you worried about losing your housing?</p> <table border="1"> <tr> <td><input type="checkbox"/> Yes</td> <td><input type="checkbox"/> No</td> <td><input type="checkbox"/> I choose not to answer this question</td> </tr> </table> <p>9. What address do you live at?</p> <p>Street: _____</p> <p>City, State, Zipcode: _____</p>	<input type="checkbox"/> I have housing	<input type="checkbox"/> I do not have housing (staying with others, in a hotel, in a shelter, living outside on the street, on a beach, in a car, or in a park)	<input type="checkbox"/> I choose not to answer this question	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> I choose not to answer this question
<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> I choose not to answer this question																		
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<input type="checkbox"/> I choose not to answer this question																				
<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> I choose not to answer this question																		

# What can be done about hot spots?

## Activity #3

- EXAMPLE 2
- Allocate a case manager, care coordinator, social worker, or community health worker for those patients living in hot spots

# What can be done about hot spots?

## Activity #3

- EXAMPLE 3
- Build a team around a neighborhood
  - Cincinnati Children's Hospital Medical Center
  - A multi-disciplinary team of physicians, nurses, social workers, and community engagement consultants receive an alert when children from two high risk neighborhoods are hospitalized. The team reviews the charts, meets with the family at the bedside, and deliver home and community-based care.

# What can be done about hot spots?

## Activity #3

- Hot Spotting Resources

- [Association of American Medical Colleges Hotspotting Collaborative](#)
- [Camden Coalition Hotspotting Data Toolkit](#)
- [National Center for Complex Health and Social Needs](#)

# Tell us about how you are using PHATE

# Share your story on our website

The screenshot displays the Robert Graham Center website. At the top, there is a search bar labeled 'Search RGC' and a navigation menu with the following items: ABOUT US, PUBLICATIONS & REPORTS, MAPS, DATA & TOOLS (which is highlighted), VISITING SCHOLARS & FELLOWS, and PRESS & EVENTS. Below the navigation menu, there is a sidebar with a 'MAPS, DATA & TOOLS' section containing links for Interactive Maps, Maps, Data Tables, Tools, Community Oriented Primary Care (COPC) Curriculum, and Population Health Curriculum (which is selected). The main content area is titled 'Population Health Curriculum' and includes sections for Purpose, Funding, Additional Information, and Activities and Modules. The 'Purpose' section states that the Robert Graham Center, HealthLandscape, American Board of Family Medicine, and Community Health Center, Inc. collaborated to develop this curriculum. The 'Funding' section mentions that the project was funded by the Health Resources and Services Administration. The 'Additional Information' section lists two links: 'Population Health Convening Summary (20 page PDF)' and 'Population Health Assessment Tool Curriculum Convening (52 page PPTX)'. The 'Activities and Modules' section lists 'Module 1 - Introduction to Population Health (54 page PPTX)'. The footer of the page shows the number 39.

# Take Home Points

- PHATE can be used to:
  - Identify hot spots
  - Integrate clinical and community data
  - Connect your practice with community resources

# Next Level Stuff 07: Getting the Most out of Community HotSpots

## Learning Objectives

- List three hot spot census tracts
- Describe how hot spots relate to community characteristics
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# Relevant family medicine milestones

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Uses experience with patient panels to address population health.
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<b>Competency</b>
Uses technology systems that capture data on variables for the evaluation of nursing care.
Anticipates variations in practice and is proactive in implementing interventions to ensure quality
Applies clinical investigative skills to improve health outcomes.
Analyze epidemiological, biostatistical, environmental, and other appropriate scientific data related to individual, aggregate, and population health.
Use information technology and research methods appropriately to collect appropriate and accurate data to generate
Integrates appropriate technologies for knowledge management to improve health care.
Ensure accountability for quality of health care and patient safety for populations with whom they work.
Use conceptual and analytical skills in evaluating the links among practice, organizational, population, fiscal, and policy issues
Develop and evaluate care delivery approaches that meet current and future needs of patient populations based on scientific findings in nursing and other clinical sciences, as well as organizational, political, and economic sciences.