

# You're Expecting Me to Become a GIS Expert!!???!

Teaching GIS to Users of Online Mapping Tools

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Robert Graham Center  
April 11, 2014

# Agenda

- ▶ Caveat
- ▶ Background
- ▶ Health Center Program
- ▶ UDS Mapper
- ▶ Geography for Non-Geographers
- ▶ Thoughts

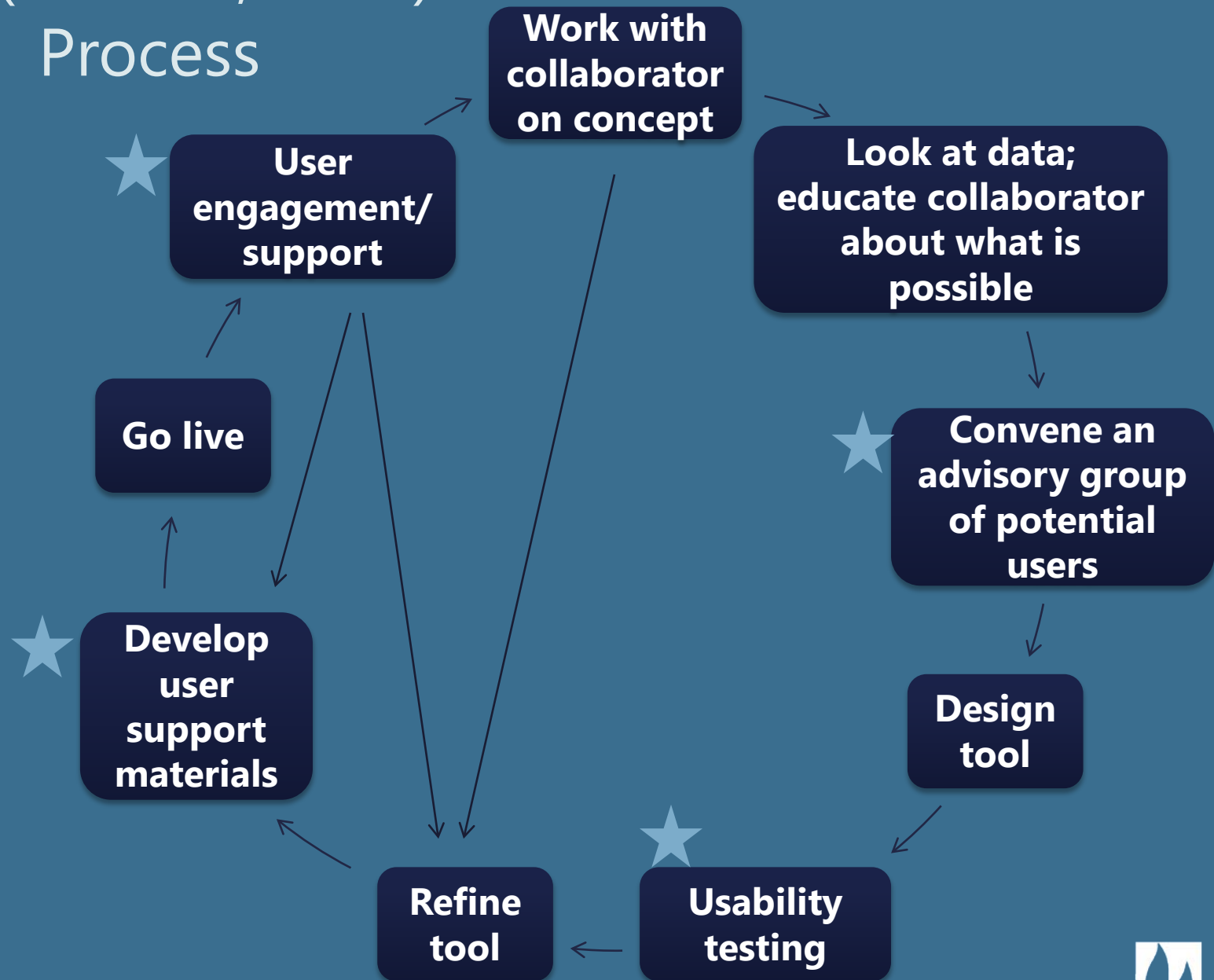
# Caveat

- ▶ Training: Health Administration and Public Health Informatics
- ▶ Passion: Improving Access to Healthcare
- ▶ Interests: Geography, data

# About the Robert Graham Center

- ▶ Created ~15 years ago so that primary health care would have a voice at the policy table in Washington, DC
- ▶ Conduct research, write policy reports, etc.
- ▶ ~ 8 years ago, began developing online mapping tools to help translate the policy research into something lay people could use to illustrate impact on their communities
  - ▶ Model: Up-front design based on a specific use case, build it and release it into the wild with very little user support
  - ▶ Staff: 0 geographers

# Our (Current, Ideal) Process



# Health Center Program

- ▶ Federal support for primary medical, dental and behavioral health care
- ▶ Relevant geographies:
  - ▶ Health Center “claimed” service area
  - ▶ Health Center “actual” service area
  - ▶ Federally-designated Medically Underserved Areas
  - ▶ Federally-designated Health Professional Shortage Areas
- ▶ Geographic concerns
  - ▶ Service area overlap
  - ▶ Service area maps required for grant applications

# What is the UDS?

- ▶ Uniform Data System
  - ▶ Federally Funded Health Centers have to report on an annual, calendar year basis
  - ▶ Very dense report- counts of patients by
    - ▶ Gender, Age, Income level, Race/ethnicity, Insurance Status, **ZIP Code**
  - ▶ Staffing information, financial info, etc.
- ▶ Used for benchmarking growth of the program, individual health centers
- ▶ Geography: Health Center locations; counts of patients by ZIP Code

# ZIP Code Data in the UDS Report

- ▶ Began collecting these data in 2005
- ▶ Wanted to better understand where patients were coming from to go to health centers
- ▶ Needed to be able to assess service area overlap
- ▶ Needed to be able to compare to population information



# UDS Mapper

- ▶ Online mapping tool based on a specific dataset and a specific use case
- ▶ Originally to be used only in-house at the funder by a small audience
  - ▶ Was intended to help assess service area overlap
- ▶ Decided in the 5<sup>th</sup> month of a 12-month contract to shorten the timeline AND open it to the public

# How Did We Get Here?

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Select an area by geography, by health center patient origin, or by driving time/distance to a point. Check the boxes below to add health care facilities and designated areas.

**Explore Service Area**

- ☒ by Geography  
☐ by Patient Origin  
☐ by Distance

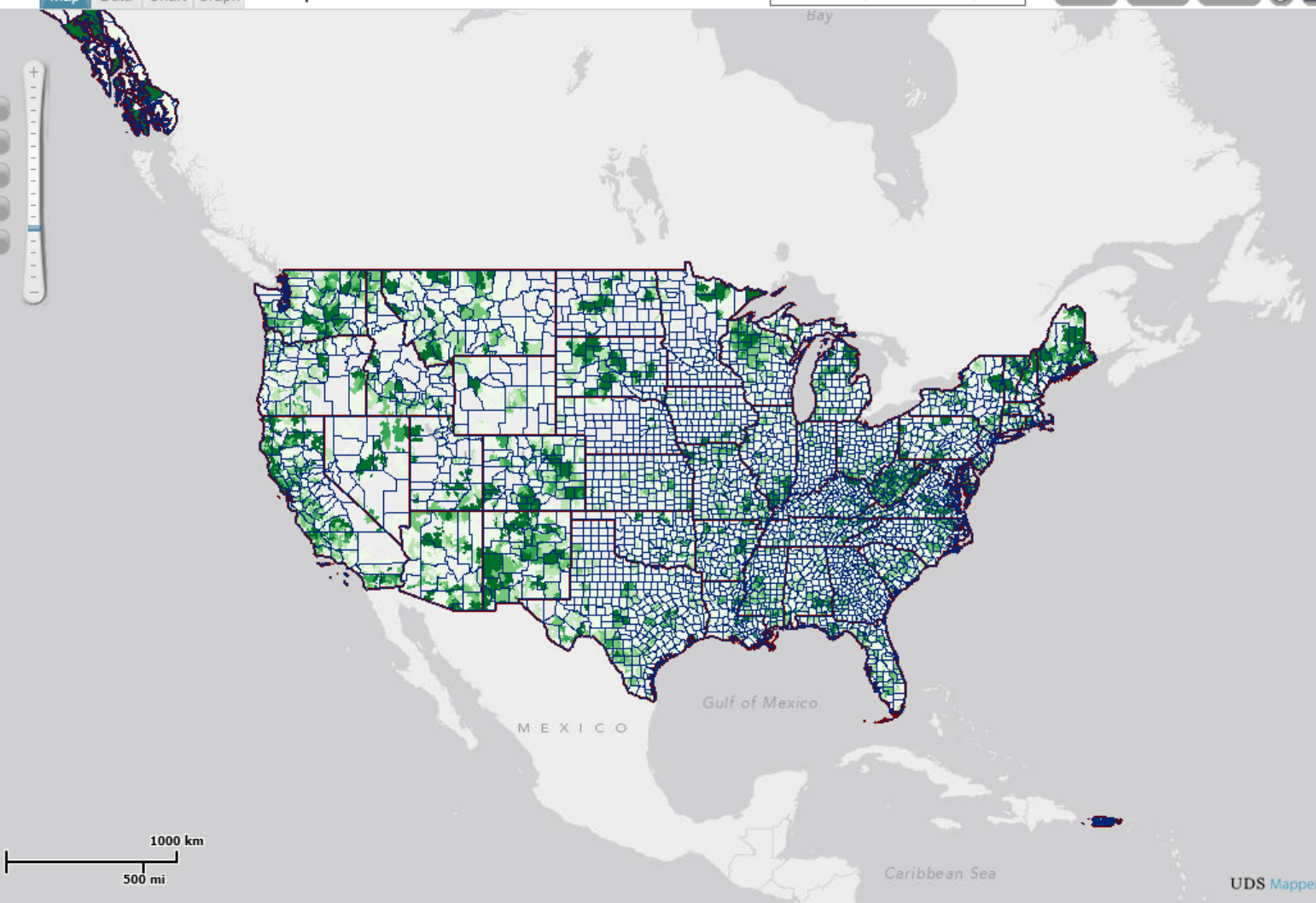
**Search to Go or Select:**

ZIP Code, County, State or Health Center

- Billings
- Billings, Montana, United State
- Billings, Montana, United States
- Billings, Michigan, United Stat
- Billings, West Virginia, United
- Billings, New York, United Stal
- Billings, Oklahoma, United Stc
- Billings, Pennsylvania, United S

[Go to Selected Areas](#)[Clear Selected ZCTAs](#)**Health Care Facilities****Rollovers**

- ☐ Health Center Administrative Locations ☒
- ☐ Health Center Service Access Points ☒
- ☐ NHSC Sites (by # of Primary Care Provider FTEs) ☒
- ☐ Rural Health Clinics ☒
- ☐ Facility and Point HPSAs ☒
- ☐ Hospitals ☒

**Main Maps****Basemaps and Optional Layers****Layer Controls****Login And Account Settings**

UDS Mapper

**Legend****Health Center Penetration of Low-Income Population**

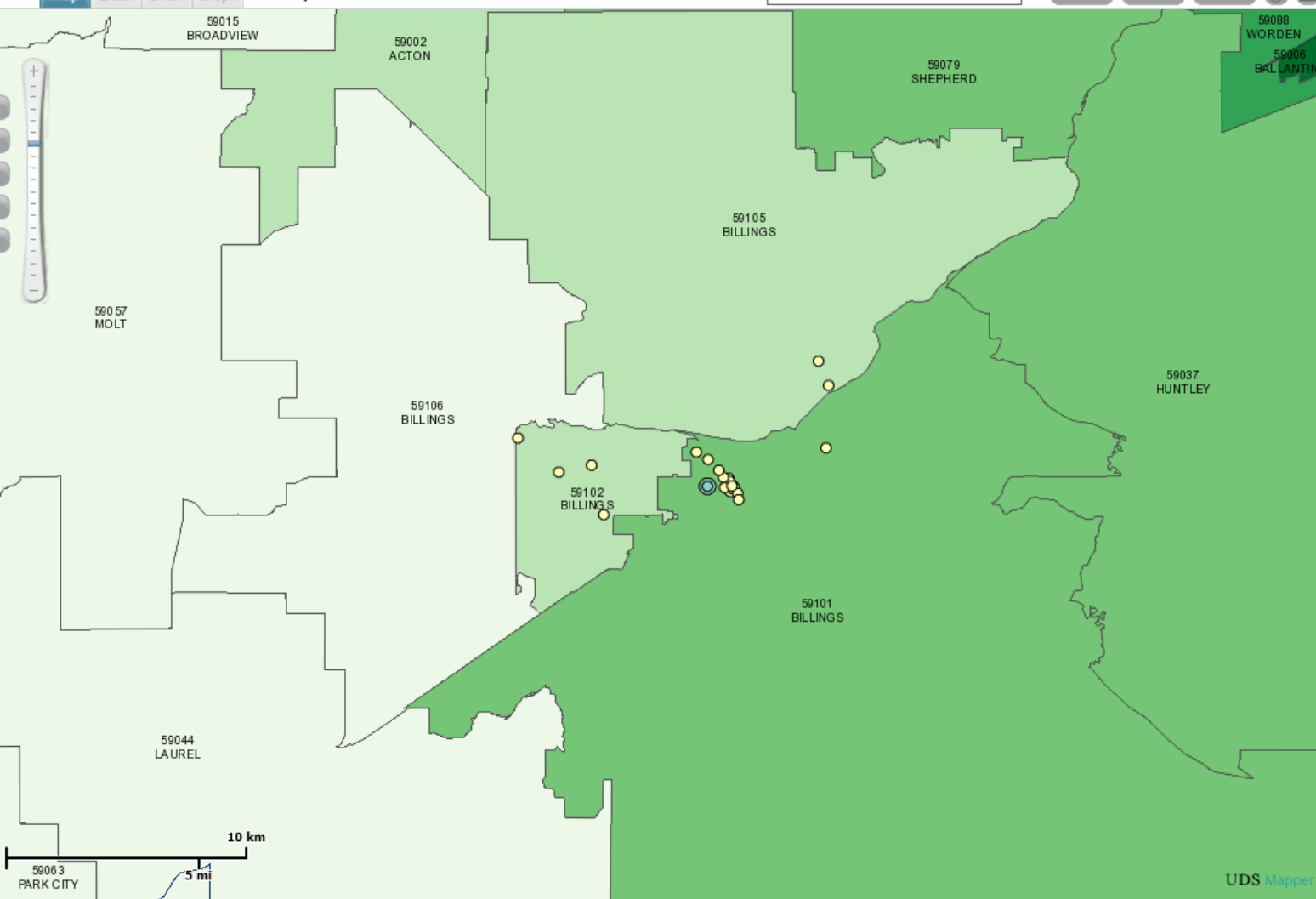
- ☐ < 20% ☐ 60 - 80%  
☐ 20 - 40% ☐ > 80%  
☐ 40 - 60%

☐ States☐ Counties[www.udsmapper.org](http://www.udsmapper.org)

# Laying the Groundwork

- ▶ Hired a geographer
- ▶ Formed an advisory group of staff members who would be using the tool
- ▶ Hired an expert who knew the content- not a geographer
- ▶ Leveraged usability/ UI design from other tools
- ▶ Conducted usability testing on the UDS Mapper

# Infuse Their Language Into the Mapper

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Select an area by geography, by health center patient origin, or by driving time/distance to a point. Check the boxes below to add health care facilities and designated areas.

**Explore Service Area**

- ☒ by Geography  
☐ by Patient Origin  
☐ by Distance

**Search to Go or Select:**

ZIP Code, County, State or Health Center

Montana, United States

[Go](#)[Add](#)**Selected ZCTAs:**

[Go to Selected Areas](#)

[Clear Selected ZCTAs](#)

**Health Care Facilities****Rollovers**

- |  |                                     |
|--|-------------------------------------|
| <input checked="" type="checkbox"/> Health Center Administrative Locations | <input checked="" type="checkbox"/> |
| <input checked="" type="checkbox"/> Health Center Service Access Points    | <input checked="" type="checkbox"/> |
| <input type="checkbox"/> NHSC Sites (by # of Primary Care Provider FTEs)   | <input checked="" type="checkbox"/> |
| <input type="checkbox"/> Rural Health Clinics                              | <input checked="" type="checkbox"/> |
| <input type="checkbox"/> Facility and Point HPSAs                          | <input checked="" type="checkbox"/> |
| <input type="checkbox"/> Hospitals   | <input checked="" type="checkbox"/> |

**Main Maps****Basemaps and Optional Layers****Layer Controls****Login And Account Settings**

- HCP Grantee Administrative Locations  
 HCP Grantee Service Access Points  
 HCP Look-Alike Administrative Locations  
 HCP Look-Alike Service Access Points

**Health Center Penetration of Low-Income Population**

- |          |          |
|----------|----------|
| < 20%    | > 80%    |
| 20 - 40% | 40 - 60% |

States

Counties

ZCTAs

[www.udsmapper.org](http://www.udsmapper.org)

# Explain "New" Language in Multiple Places

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Main Maps

Search for a place on the map

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Tools

59015 BROADVIEW

59002 ACTON

59079 SHEPHERD

59088 WORDEN

59006 BALANTINE

59105 BILLINGS

59037 HUNTLEY

59106 BILLINGS

59102 BILLINGS

59011 BILLINGS

59044 LAUREL

59063 PARK CITY

59057 MOLT

10 km

5 mi

HCP Grantee Administrative Locations

HCP Grantee Service Access Points

HCP Look-Alike Administrative Locations

HCP Look-Alike Service Access Points

Hospitals

Short Term Hospital

Critical Access Hospital

Other Hospitals

(Data from UDS reporting year 2012, and American Community Survey (ACS) 2007-2011 five-year estimates at the ZIP Code Tabulation Area (ZCTA) level; prepared by John Snow, Inc.) This map displays the percent of the low-income residents (at or below 200% of the Federal Poverty Level) of the given ZCTA served by a health center (from health centers reporting 14 or more patients residing in that ZCTA). More information

UDS Mapper

Explore Service Area Tool

Main Maps

Choose a main map below to show either UDS data on health center patients, or total population statistics.

No Main Maps Selected

UDS Data

Choose to show UDS data for all Health Centers, only HCP Grantees, or only HCP Look-Alikes

All Health Centers

All Health Centers

HCP Grantees

HCP Look-Alikes

Total Population

No Low-Income Not Served by Health Centers

No Low-Income Not Served by Health Centers (Dot Density)

No # of Health Centers Serving ZCTA, 2012

Total Population Statistics

No % Poverty (Pop at/below 100% FPL), 2007-2011

No % Low-Income (Pop at/below 200% FPL), 2007-2011

No % Non-White, 2007-2011

No % Hispanic, 2007-2011

No % Black, 2007-2011

No % Asian, 2007-2011

Basemaps and Optional Layers

Layer Controls

Login And Account Settings

# Concepts That Needed to be Emphasized

- ▶ ZCTAs
- ▶ Their data
- ▶ Numbers vs Percentages

# Tutorials and Resources

UDS Mapper

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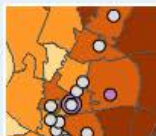
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## Tutorials & Resources



### Webinars & Presentations

Attending a webinar or in-person presentation is one of the best ways to learn how to properly and effectively use the UDS Mapper. View our list of upcoming webinars and presentations, and sign up for one today!

[read more](#)



### Tutorials

A variety of how-to materials are provided to help you use the UDS Mapper, including a user guide, videos, animated presentations, and more! Use these resources to teach yourself how to use the UDS Mapper at your own pace.

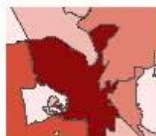
[read more](#)



### Knowledge Base

The Knowledge Base contains FAQs, a Glossary of terms used within the website, and Data Definitions. Type a key word or phrase into the search bar to find related articles. If you cannot find what you are looking for, feel free to [contact us!](#)

[read more](#)



### Data Sources and Definitions

Data sources and definitions are provided for each dataset reported within the UDS Mapper. You can also read an explanation of our methodology for obtaining ZCTA-level data estimates.

[read more](#)



### Glossary

Definitions are provided for words used within the UDS Mapper website. You can also use the [Knowledge Base](#) to search for a particular glossary item by key word.

### Return

Return to your session in the UDS Mapper

[GO](#)

### View Demo

Learn how you can use the tool to improve community health

[READ](#)

### Attend a Webinar

Live webinars offer a chance to learn and ask questions

[REGISTER](#)

## Quick Links

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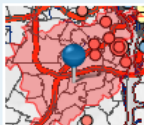
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# Tutorials and Resources



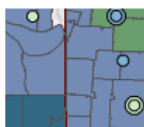
[read more ▶](#)



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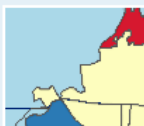
[read more ▶](#)



## Frequently Asked Questions (FAQs)

See answers to commonly asked questions about the UDS Mapper. You can also use the [Knowledge Base](#) to search for more information by key word or use the [Contact Us](#) form

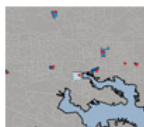
[read more ▶](#)



## ZIP Code to ZCTA Crosswalk

ZIP Codes and ZCTAs do not always perfectly align. To find out which ZCTA a given ZIP Code has been assigned to, please use this Crosswalk.

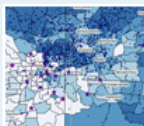
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## Download State/County Data by ZCTA Approximation

Use this tool to quickly download UDS Mapper data for all of the ZCTAs that have any part within a selected state, county or group of counties. Please note that these data are still reported by ZCTA, and in most cases do not exactly correspond to State/County boundaries.

[read more ▶](#)



## Articles & References

Want to learn more about the scientific background and significance of the UDS Mapper? View our list of relevant articles and references on community health centers and using GIS to improve community health.

[read more ▶](#)



# Tutorials and Resources
















## UDS Mapper Webinars

- »  [Introduction to the UDS Mapper](#)
- »  [What's New in the UDS Mapper](#)
- »  [Planning for Outreach and Enrollment: Using the Uninsurance Explorer in the UDS Mapper](#)
- »  [Assessing Your Community Using the UDS Mapper](#)

## About the UDS Mapper

- »  [What is the UDS Mapper?](#)
- »  [Data in the UDS Mapper](#)
- »  [Limitations to Data in the UDS Mapper](#)

## How-To:

- »  [Access the UDS Mapper](#)
- »  [Reset Your Forgotten Password](#)
- »  [Zoom In to a Location on the Map](#)
- »  [Add Health Care Facilities to the Map](#)
- »  [Draw Your Own Points, Lines, Shapes, and Labels](#)
- »  [Use the 'Main Maps' Tool](#)
- »  [Use the Explore Service Area Tool: by Geography](#)
- »  [Use the Explore Service Area Tool: by Patient Origin](#)
- »  [Use the Explore Service Area Tool: by Distance](#)
- »  [Use the Explore Service Area Tool: Data Table and View Analysis Results](#)
- »  [Use the Population Indicators Tool](#)
- »  [Use the Uninsurance Explorer Tool](#)
- »  [Use the Community Health View Tool](#)
- »  [Use the QuickGeocodes Tool to Upload Your Own Address Data](#)
- »  [Use the QuickThemes Tool to Upload Your Own Aggregate Data](#)

## Specific Use Cases

- »  [Create a Service Area Map and Data Table](#)
- » [Using the Uninsurance Explorer for Outreach & Enrollment Planning](#)

## Register Now

The UDS Mapper is free to use and open to the public

[REGISTER](#)

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# Direct User Engagement

- ▶ Since we launched in July 2010, at least 2 live webinars per month
- ▶ Attend national, regional, state and local meetings/conferences
- ▶ Provide user support
  - ▶ Offer personalized webinars for people who are really stuck
- ▶ As necessary, reconstitute and convene advisory group
- ▶ Use problems identified in user support/ training to target improvements to functionality or training tools



# User Ideas Feed Improvements and Updates

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Explore Service Area Tool

Search for a place on the map

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Explore Service Area Tool

[i](#) [x](#)

**Tools**

☒ Explore Service Area Tool

☐ Population Indicators

☒ Main Maps

☐ Uninsurance Explorer

☐ Community Health View

☐ QuickGeocodes

☐ QuickThemes

Select an area by geography, by health center patient origin, or by driving time/distance to a point. Check the boxes below to add health care facilities and designated areas.

**Explore Service Area**

- ☐ by Geography  
☐ by Patient Origin  
☒ by Distance

**Search to Go or Select:**

Address, ZIP Code, County, State

[Go](#)**Selected Area Using:**

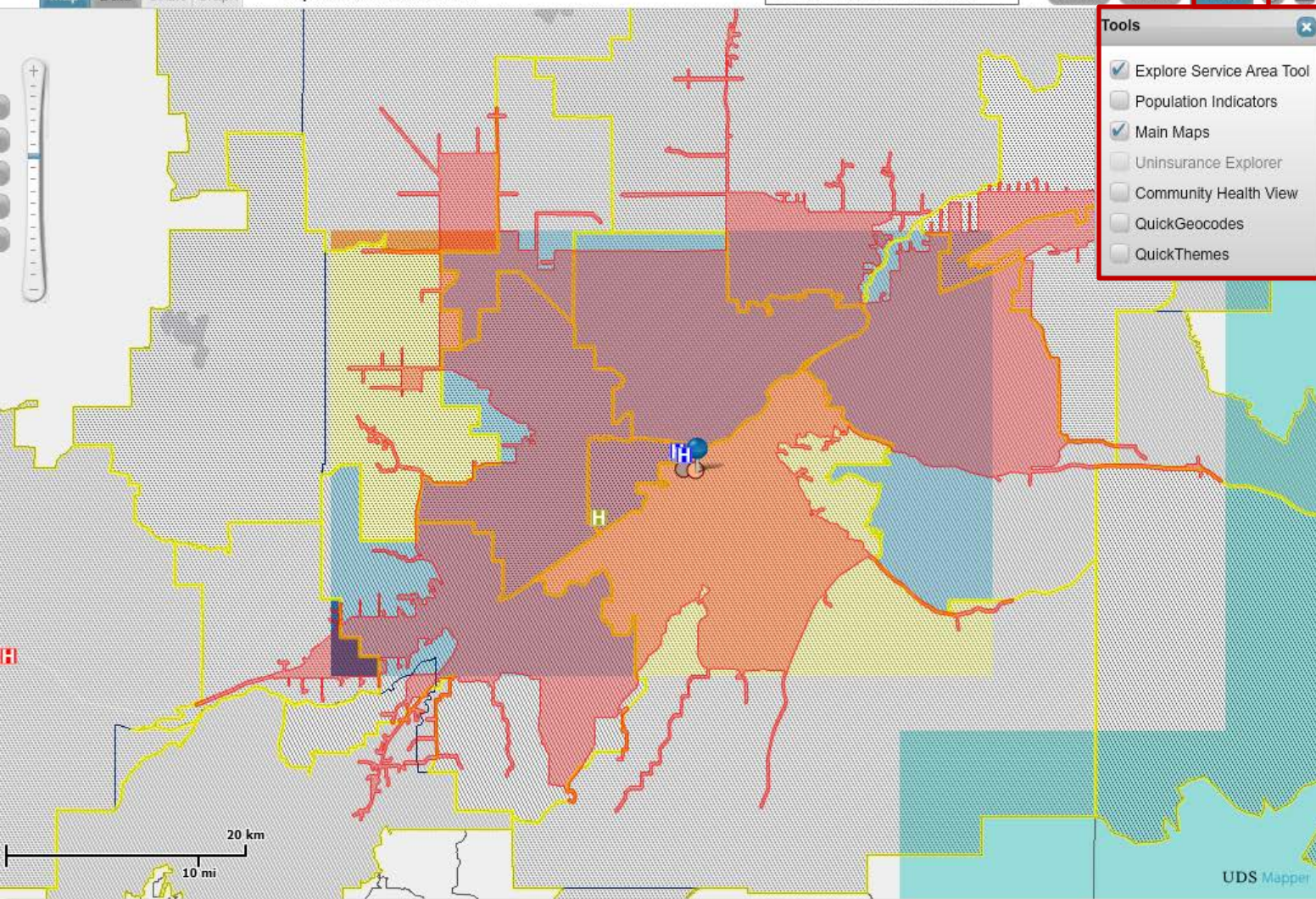
- ☒ Drive Time ☐ Adjust for traffic  
☐ Distance

 30 Min.

59002	59006	59015
59019	59034	59037
59041	59044	59057
59063	59064	59072
59079	59088	59101
59102	59105	59106

[Go to Selected Area](#)[Clear Selected Address](#)**Health Care Facilities** **Rollovers**

- ☒ Health Center Administrative Locations
- ☐ Health Center Service Access Points
- ☐ NHSC Sites (by # of Primary Care Provider FTEs)
- ☐ Rural Health Clinics

**Main Maps****Basemaps and Optional Layers****Layer Controls****Login And Account Settings**

Legend

- Selected ZCTAs
- HCP Grantee Administrative Locations
- HCP Look-Alike Administrative Locations

**Hospitals**

- Short Term Hospitals
- Critical Access Hospitals
- Other Hospitals

**2010-2012 (2-Year) % Change in HCP Grantee Patients**

- 50 - 100% loss
- 10 - 50% loss
- < 10% change
- 10 - 50% gain
- 50 or more gain
- Newly Served

States

Counties

[www.udsMapper.org](http://www.udsMapper.org)

# New Concepts

- ▶ Thresholds
- ▶ Geocoding
- ▶ FIPS codes
- ▶ Data Structure/ Organization
- ▶ Thematic maps

# Thoughts

- ▶ Opening the UDS Mapper to the public was seen as a way to even the playing field for applicants to the Health Center Program
- ▶ Uneven adoption of the tool/ attendance at webinars
- ▶ Just because you make the tutorial/ resource does not mean they will use it
- ▶ Being up-front about the limitations of the tool does not make the tool weak
- ▶ Constantly reassessing the tools we have developed but have learned not to “fix” everything



# Thank you!

Jennifer Rankin  
[jrankin@aafp.org](mailto:jrankin@aafp.org)

Text UDSMAPPER to 50500 for contact information

<http://www.udsmapper.org/contact-us.cfm>

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