

## Module 2

### Defining Community

#### Slide 1: Title Slide

Thank you for joining me for this module of the COPC curriculum. My name is Jennifer Rankin and I am the Master Trainer for the UDS Mapper Project at the Robert Graham Center. My background is in Public Health Informatics, but my entire career has focused on access to care with an emphasis on the geography of access to care and health centers. During this module, I'll be talking to you about how to define your community for Community Oriented Primary Care.

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#### Slide 2: Disclosures for Continuing Medical Education (CME)

(No accompanying text)

#### Slide 3: Agenda

During this module, we will discuss the different ways to describe a community and see that all of them have some sort of geographic component. We'll look at an example in Washington, DC, and learn how to zero-in on the target community and refine our definition of that community. We'll learn how to take your clinical data to define your community of interest, and then we'll get into the heavy lifting learning about geocoding, geographic codes and walk through a short demonstration of how to use online tools to help with community definition.

#### Slide 4: Objectives

By the end of this module, you will be able to describe different ways to define a community, explain the process of geographic retrofitting, geocode your own patient data and converse fluently in geographic-ese.

#### Slide 5: COPC Defined (Recap)

As Dr. Liaw pointed out in the intro session, COPC is a continuous process applied to a defined community. So how do we define this community?

#### Slide 6: Community Defined (Recap)

The idea of community is the core element and the point of departure for the COPC process, but it can also be an elusive concept, especially in urban settings where multiple population groups and overlapping health care systems are the rule.

Although the geographically compact and contiguous community remains an important model, COPC accommodates many different patterns of clinical use.



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Geography is relevant to any population definition, even if it is a community that comes from dispersed locations such as members of a health plan.

Remember that COPC is a continuous process and evaluation is an important part of the process. Having a defined community within which you can measure improvement in health outcomes is essential. Therefore you need to be able to characterize the community.

#### **Slide 7: Is This Your Community?**

During the in-person version of this module, people were given a slip of paper with two objects printed on them when they came into the room. These are identical to the objects you were assigned during the pre-activity based on your choice of number from 1-24. In addition to being given these objects, participants in the room were allowed to sit wherever they liked.

The group in the room played a game to better understand how we can define community. We will imagine for this exercise that we live in a town called COPC-town.

The first and most obvious way to define community is to say the community is everyone in COPC-town.

The second most obvious way to define community is treat each of the tables in room as a specific neighborhood in COPC-town. We could pick one or more neighborhoods as our community.

But we've based these community definition decisions on factors that were under our control- whether to live in COPC-town or not, and which neighborhood in COPC-town we wanted to live in. We can also define communities on factors that people have little or no choice over, such as race or age. All the people with a blue shape were asked to stand- this is our blue race community that we might want to focus on.

We can also divide community based on disease status. Everyone with a triangle was asked to stand. This represented the chronic disease community that we might want to focus on. And ultimately for this demonstration we decide that is the community we will work with for our COPC efforts. We asked everyone with a triangle on their card to come to the front of the room, but asked everyone with a diamond or heart to stand on one side while everyone with a star stood on the other side. The ones with a star are the ones who come to the clinic; the ones with a diamond or a heart do not. But they are still part of our community- still part of the focus of all of our COPC efforts.

The last thing I would like to note is that no matter how we defined our community, there was always a geographic component to it. We always assumed for this example that we are starting with the population in COPC-town, so our final population of interest would best be described as the people within COPC-town who have a chronic disease.

#### **Slide 8: Different Communities**

So as we just learned, there are a bunch of ways to define community. In the real world, there are many traditional and geopolitical boundaries that we regularly use to define community- we can use

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definitions of traditional neighborhoods- some that you might be familiar with are Hell's Kitchen in NYC or the French Quarter in New Orleans. You can use legislative boundaries, census tracts or other Census Bureau geographies, ZIP Codes (which may be the easiest but not necessarily the best and I'll explain why a little later in the module) or even a city or county. And as we learned in the game, your target population may be only a certain population within these geographies.

Another distinction that will occur after a health center or provider's office opens and has been seeing patients is to decide if we want to describe our community by proposed community or actual community. After all, health centers may have target neighborhoods or areas they plan on serving, but patients can go for health care wherever they like and the patients that choose our health center may not be exactly from our proposed area.

Now, let's walk through a specific example in Washington, DC for you to better understand.

#### **Slide 9: Community = Washington, DC**

Switching from COPC-town to Washington, DC, if we look at a map of Washington, DC, we see some very strong boundaries. Essentially the remaining 2/3 of a 10 mile by 10 mile square (or diamond), Washington, DC, presents a nice compact geographical community. It would be easy to open a clinic in the District and say, "I serve Washington, DC." But is that realistic?

#### **Slide 10: WGC Location = Southeast DC**

Here we see the actual location of the World's Greatest Clinic. DC is divided up into quadrants, NW, NE, SE, SW, and because the quadrants are based on the location of the US Capitol, they aren't equal quadrants... Using this traditional geographic division of DC, we see that the World's Greatest Clinic is actually in Southeast- perhaps that is a better way to describe the community we serve there?

Looking a little more at the geography, many people are familiar with the Potomac River. In fact we see that the rest of the land that made up the complete diamond is to the Southwest of the District across the Potomac River in Virginia. However, there is a second river in the District, the Anacostia that further divides up our nice little diamond shaped community that we started with. And we can see that the river divides Southeast into two sections. The Section that the WGC is in is called Anacostia, which includes the portion of Northeast that is on the southeast side of the Anacostia River as well. So do "Anacostia" or "Southeast" adequately describe our community? Maybe...

But remember, the purpose of defining our community is to have our denominator with which can measure our successes as the World's Greatest Clinic continues to grow and thrive and serve the community well. Therefore, we need to consider the statistics that are available to us.

An interesting side note about water features and other major infrastructure is that people tend to not want to cross them, either because there is no physical way to do it or because of the psychological barrier that is created when thinking about crossing that feature. Keep this in mind when drawing up

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communities. If a river runs through it (or a major highway or a large park) you probably need to divide that community into multiple communities.

#### **Slide 11: DC Health Statistics**

Going through the available data on the DC Department of Health website, it seems that the only geographic breakdown of data below the state-level has nothing to do with the quadrants and is only tangentially related to the river- there is no “Anacostia” break down. Instead, the data are reported by Ward. Wards are the greater political division of the city, and serve as the geography for city council districts.

#### **Slide 12: Refining Community = Ward 8**

Here we can see that the WGC is actually in Ward 8. Perhaps this is the best way to describe the community that the WGC serves?

#### **Slide 13: Close-up of Ward 8**

One reason we might not want to use Ward 8 as the descriptor of our community is because a big chunk of it is a working Air Force base. So are there other data-relevant geographies we might want to consider in our quest to define community?

#### **Slide 14: Refining Community = Census Tract 007407**

There are other sub-state and sub-county geographies that can be used for community definition. One geographical unit that you should all become familiar with if you are not already are census tracts. We’ll talk about them more later, but they are units of geography created by the US Census Bureau and they are always smaller than and nest inside a county. Political boundaries, such as the wards of DC or legislative districts in other states, are drawn along census tract lines. Here we can see that our clinic is located in Census Tract 007407. Census tracts will be important divisions for population demographics, so if you do not use them for your primary community definition, you should know what the equivalent of your community definition is in terms of census tracts.

#### **Slide 15: Block Group vs. Census Tract vs. County**

I know that we’ve been throwing around these geographic terms, so I thought it might be helpful to explain some of them. Dr. Liaw felt it would be helpful to think of these concepts in terms of medical concepts. Block groups, census tracts, and counties are units of geography just like cells, tissues, and organs are units of biology. Just as a bunch of cells make up tissue and a bunch of tissue make up organs, a bunch of block groups make up census tracts and a bunch of census tracts make up counties.

Block groups contain between 600 and 3000 people with an optimum size of 1500. There are more than 200,000 block groups in the US. Multiple block groups make up a census tract. Each census tract contains a minimum of one block group and a maximum of nine block groups. Both block group and census tract boundaries are redefined every 10 years for each decennial census. Census tracts contain

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between 1500 and 8000 people, with an optimum size of 4000 people. There are more than 65,000 tracts in the US. Census tracts make up counties. The population in each county varies widely but on average, there are 98,000 people per county. There are more than 3000 counties and county equivalents in the US. Louisiana has parishes and Alaska has boroughs instead of counties and states like Virginia have independent cities such as Fairfax and Richmond.

In comparison, there are 7,300 people per ZIP code (there are approximately 42,000 ZIP codes.)

#### **Slide 16: Census Geography Chart**

This chart shows how Census geographies nest (or don't.) On this chart you should be most familiar with blocks, block groups, census tracts, counties and ZCTAs. We won't talk much about blocks but they are the basic unit of geography for the US Census and all other geographies are built with these blocks. The traditional nesting hierarchy of US Census geography is blocks which make up block groups which make up census tracts which make up counties which make up states. We'll talk about ZCTAs in a few minutes so remember then that ZCTAs are also built from blocks but do not respect the nesting hierarchy we just went over. ZCTAs cross block group, census tract and county lines.

#### **Slide 17: Census Codes**

FIPS Codes are Federal Information Processing Standard Codes developed to create a standard for identifying and naming many things including geographies. FIPS Geographic Codes have been withdrawn and until the Census Bureau can comply with the new standard, they will continue to use these codes under the new title, "Census Code." Every census tract has a four digit code; there are two optional suffix digits. This number ranges from 1.00 to 9999.99 and is unique within a county. The Census Code for a tract contains six digits with zeros filling in the missing data. Therefore, tract 1 is 000100 while tract 1.01 is 000101. If we forget to add LEADING zeros to make the full six digits, it changes the geography completely.

When dealing with data across counties, it is important to remember that census tract codes will repeat in various counties so it is best to think of the full Census Code for a census tract which is 11 digits long.

The first two digits indicate the state, the next three digits indicate the county, and the last six digits are the ones already described. So for example clinic in SE Washington, DC, Census Tract 007407 would have a full census tract number of 11001007407, where 11 denotes the District of Columbia, 001 indicates the county number, and 007407 is the census tract. If we did not use the full census tract number, we would not know if we meant Census Tract 007407 in Washington, DC, Douglas County, Nebraska, Tulsa County, Oklahoma, or San Bernardino County, California.

#### **Slide 18: Refining Community = ZIP Code 20020**

Another geographical unit that you should all already be familiar with are ZIP Codes. This will be the easiest way to describe information you pull out of your EMR or administrative system. And think about

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it, most people know their ZIP Code- most of us have no idea what our census tract is... Our clinic is in the 20020 ZIP Code.

As attractive as ZIP Codes are for community definition, they are not ideal for several reasons. The first and foremost reason they are not ideal is that ZIP Codes are created by the US Postal Service for the efficient delivery of mail. They can change at any time the postal service needs them to so they are unstable geographies. The ZIP Code a patient reports can suddenly change its shape and therefore have no relevance for analyzing that patient's records in terms of geography if ZIP Code is the unit of geography that is being used. The second reason why ZIP Codes are not ideal geographies is that there are no official population or demographic counts for ZIP Codes. If we are defining a community so that we can measure the community, ZIP Codes do not give us the population numbers we need for this measurement.

For this reason, in 2000 the US Census Bureau created ZCTAs or ZIP Code Tabulation Areas. ZCTAs are reasonable approximations of ZIP Codes and only change every 10 years for the new census. ZCTAs are based on US Census blocks and therefore we have official population numbers for these geographies. HOWEVER, the US Census Bureau warns us that it is only a happy coincidence that ZIP Codes and ZCTAs tend to cover the same space, and it is only a happy coincidence that ZCTAs and ZIP Codes have the same 5-digit code, so it is important to understand what you are talking about when talking about ZCTAs vs. ZIP Codes and have a pretty good understanding of when converting between them.

One of the sites we will learn about later, the UDS Mapper, uses ZCTAs as the main geography.

#### **Slide 19: Geographic Retrofitting**

The process of using our patient data to define service area is called geographic retrofitting. This is the process of mapping the patient addresses from your practice during a specific period of time to help determine where patients come from to receive services at your clinic.

Instead of looking at what the service area should be, geographic retrofitting looks at what the service area actually is based on whatever set of reasons – geography, insurance, patterns of transportation, tradition, or language – patients have chosen to obtain care in a particular practice or clinic.

Using geographic retrofitting, we can look at the patient locations of two clinics on the same block in DC that serve Latino patients. As you can see, practice 1 is drawing from the areas immediately north and south of the clinic while practice 2 is drawing from a much wider radius where patients are traveling from Virginia and Maryland to get to the clinic.

#### **Slide 20: How Do I Do That???**

In order to do this at your clinic, all you need to do is get the patient data out of whatever database you use at your clinic (if you use a database), likely from your EMR or from your practice management system. Then all you have to do is geocode the data, and then all you have to do is map it.

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My mother would be happy that I was able to work Steve Martin into my presentation... One of his old routines was about how to be a millionaire and NOT pay taxes. He said, "First, get a million dollars. Then when the tax man comes and asks why you didn't pay taxes simply say, "I forgot."

Unfortunately, telling you that you can do geographic retrofitting in three simple steps is about as ludicrous as implying that getting a million dollars to not pay taxes on would be the simple part of that scheme...

#### **Slide 21: Cleaning and Verifying Patient Address Information**

I think we would all like to believe that every patient is 100% completely honest with us and that the address information they provide during registration is 100% accurate and that if they have moved since the last time they came to see us they let us know immediately. Assuming that is the case, we all like to think that we do not make errors when entering their information into our EMRs or practice management systems. If this were true, then this slide would not be necessary. Unfortunately...

First, patients lie. I would not say that it's the majority but there are some patients that just do not want us to know where they live. So they provide false address information (and false other information.) Why would they lie to a doctor's office about where they live? Because the reason doctor's offices collect address information is usually to send a bill.

Billing leads to the second problem as well. In order to send a bill, I need a mailing address, not where you actually live. PO Boxes are the bane of health geographers' existence! PO Boxes cannot be tied to any specific geography and certainly do not represent where patients live or come from to receive health services. This can be corrected at the time of data collection if you ask your patients to provide both a physical address and a mailing address if different.

Third, there can be errors during data collection or data entry such as transposing the street number part of an address. If not caught then, it is likely not going to be caught if and until the patient returns, and if they are presented with their information to approve or update.

The next four errors can be caught at the time of data entry or during geocoding (and then may have to be re-geocoded). Address information should be collected as completely and accurately as possible and in the US should include a street number, street directional (optional), street name, street type, apartment number (optional), city, state and ZIP Code. Any street misspellings, missing or incorrect street types such as street, avenue, road or missing street directional (like the quadrants in DC) can lead to addresses being geocoded incorrectly and points being misplaced on the map. Simple errors may be corrected by your geocoder, but you will want to check the documentation to see how these are handled.

We should also pay attention to the fact that some people just do not know where they live. After a recent move, patients may give a new address but use their old ZIP Code. One of my jobs as a grad student was to geocode all the vital statistics data from the State of Texas. We found that there was quite a discrepancy between our results and the county data the State reported in terms of live births

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for Houston County. This was because some of the residents of Houston the city, or the people completing the birth certificates, did not know that Houston the city is in Harris County (and that in Texas there is a Houston County, just not for the city.) Because of this, you should take any reported ZIP Code or County with a grain of salt, and if possible only use information as returned by your geocoder.

As I'll discuss in a minute, apartment numbers can also be problematic, but may not necessarily need to be addressed explicitly.

#### **Slide 22: What Does "Geocoding" Mean?**

All this talk about geocoding- but what does it mean? Simply, geocoding means taking address information and adding some other geographic tag to it. This can be latitude and longitude coordinates, census tract codes, ZIP Codes, county names/ codes.

The way geocoders work is that they take your address information, compare it to a standardized database, and return the information you are looking for. Here we have my work address, let's say it is a patient address as they reported it and I have submitted it to be geocoded. The geocoder will parse the address information into its parts and compare that to the information it has in its database. We see in green all of the fields in their database that match my address. The geocoder should return geographic information that matches the entry in their database that best matches my information, and that is this entry. But notice that the ZIP Code is different. The one the patient reported was incorrect for this address, and had I used the information they gave me, it would have provided poor data for our community definition!

#### **Slide 23: Geocoding Considerations...**

You might not have guessed but I am not a trained geographer. The trained geographer who shares an office with me wanted you to know the following:

Most good geocoders these days have a cascading algorithm that first tries to match your address to the rooftop (this helps if houses are set far back from the street), and if that is not possible, they match to the street address (somewhere along the correct street segment on the correct side of the street), then if they can't find that, they match to the closest intersection, then to the ZIP Code centroid, and then possibly to the city centroid. High quality (usually desktop-based services) will tell you what type of match was used for the patient address, but most online geocoders do not provide this information. You should be aware that just because the geocoding process returned a result does not mean it is to the exact point level you may be expecting.

Another consideration when using patient address information is that multiple patients might live at the same address- it could be a family or it could be an apartment complex. Depending on your analysis, it might be necessary to know how many people live at/ visits came from a single address, so before you de-duplicate your data, consider what you might be losing.

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As geocoders improve, apartment information becomes less of an issue, but to the extent possible, apartment numbers should be kept in a separate field in the practice management system and ideally should be entered uniformly (always as #101 or something like that), but that is a geographer's dream. Apartment information confuses some geocoders while for others it helps you identify where in an apartment complex that particular unit is located. So apartment numbers may or may not be an issue. The troublesome ones will be the ones that are appended to the street number such as 101A Main Street or even worse yet, 101 ½ Main Street. Just beware that these may cause you problems.

Last, HIPAA. Patient street address information is identifiable, HIPAA-sensitive information. In fact, any geography smaller than a state is considered to be an identifier for patient information. Anytime you geocode these data using any outside entity or vendor, you need to understand how the data are passed back and forth, to what extent a geocoding service holds on to your patient data even after it has been geocoded and returned to you, and ideally, you should enter into a Business Associate's Agreement with them prior to any data exchange to make sure that your work is HIPAA compliant.

#### **Slide 24: Free-ish Geocoding Tools**

That was a lot of geography to learn in a very short time so congratulations! Here are a few free-ish tools you can use to geocode your patient data.

In the interest of full disclosure, HealthLandscape LLC is the Robert Graham Center's partner in all of our online mapping ventures. They are a non-profit organization based in Cincinnati, Ohio, and in addition to working on the UDS Mapper with us, they developed and maintain HealthLandscape, the online mapping and data visualization platform. HealthLandscape has recently undergone a major overhaul so there are currently two platforms you can use to geocode your data:

[www.healthlandscape.org](http://www.healthlandscape.org) has an intuitive user interface that allows you to simply copy the patient data you have in your spreadsheet as extracted from your EMR or patient management system and paste it into the geocoding tool within the platform. I'll demonstrate this in a second. Currently, the new HealthLandscape only appends latitude and longitude to the address information. Once the data are geocoded in HealthLandscape they automatically appear in the map. The data are downloadable after geocoding allowing you to take the latitudes and longitudes with you to use in any mapping program. Free geocoding is limited to geocoding only 300 records and 20 columns of data at a time, and you can save a maximum of 3 datasets. Additional geocoding is allowed if you buy a subscription, but I don't sell those so if you are interested, please contact HealthLandscape directly. There is not currently a HIPAA compliant mechanism for uploading patient information to HealthLandscape.

[Legacy.healthlandscape.org](http://Legacy.healthlandscape.org) does not have as simple an interface for geocoding your data but does have a HIPAA compliant mechanism for uploading and geocoding your data. You can register for a trial account to the legacy HealthLandscape to be able to geocode your data there.

Batchgeo.com is another free service that allows you to geocode your data. The output is a .kml file that can be used in Google Earth. The service does not seem to be HIPAA compliant.

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Last there is a service that is now run by Texas A&M University. [geoservices.tamu.edu](http://geoservices.tamu.edu) provides free geocoding of up to 2500 records total. Additional credits may be purchased as detailed on their website. In addition to adding latitude and longitude to your points, this service also adds county and census tract codes. The site does not have any apparent HIPAA compliance statement.

Other free geocoding services may be available; these are the ones I could identify as having some portion free as of August 29, 2012.

During the in-person demonstration, the sample dataset *sample data for COPC walk through.xls* was geocoded in HealthLandscape. This sample dataset is available in the resources for this module, as are detailed instructions for how to geocode within HealthLandscape.

#### **Slide 25: Geocoded Sample Data**

This is what our output will look like HealthLandscape. We can export these data to use later in this or other programs.

#### **Slide 26: Geocoded Sample Data- Mapped**

And this is a map of our geocoded data!

#### **Slide 27: How Do I Convert “Points” to “Community”?**

I know what you are saying to yourself- “Jennifer, you spent all that time talking about wards and census tracts and ZIP Codes and what we have now are just points!” How do I translate those points into a community?

Now that we have points, we can get counts of patients (if that is what our data were) within ZIP Codes, census tracts, counties, etc. by either just counting the points within each geography or having a service do that for us. Once we have counts within our target geographical unit we can then construct our community.

Some things we will want to consider are, do we want to narrow down the information we have to include only those geographical units that have the most patients? Maybe we only want to include those that have the highest penetration of the population living there? I’ll discuss this more in a minute. Once we have decided how we will include geographical units, we need to decide if we are only going to allow contiguous units or not, and if we do, if we will allow donut holes? What we will find is most likely that patients come from all over and if we are using census tracts for instance, will we only build a service area that makes a solid shape or are Dalmatian spots allowed? And if we do build a contiguous shape but a single census tract was not included do we want to go ahead and say that it is part of the service area too, even though there are no patients from there?

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#### Slide 28: Free-ish Census Tract Appending Tools

Again the only free-ish tools I could find as of August 29, 2012, are HealthLandscape and the webGIS tool at USC/ Texas A&M. HealthLandscape has a tool called the Health Center Mapping Tool that is a subscription service. Again, I am not selling subscriptions but you can contact HealthLandscape if you are interested. This tool currently only exists on the Legacy HealthLandscape ([legacy.healthlandscape.org](http://legacy.healthlandscape.org)) site but should debut on the new site ([www.healthlandscape.org](http://www.healthlandscape.org)) during the fourth quarter of 2012. I am authorized to tell you that if you are truly interested in this geographic retrofitting and analyzing your patient data geographically after this course, and you are willing to talk to our designers for about half an hour to inform them about what the new tool should look like, we can give you a free subscription to the Legacy site to use until it is removed. Please come up and see me following the lab if you are interested in this opportunity.

Again, the Texas A&M tool only allows you to process 2500 records for free so if you geocoded your data without adding the census tract information you will have to process them again using up more of your free allotment. Unfortunately Texas A&M Geoservices also outputs the Census Codes in their pieces rather than as the full 11 digit code.

#### Slide 29: Number of Visits per Census Tract

This chart shows why you might not include every geographical unit with a count of patients or visits in your dataset in your final community definition. In this example, the count of visits was obtained by census tract. On the left we see the census tracts with the most visits and as we move right there are fewer and fewer visits per census tract. Usually for your community definition, you are going to find the geographical units that provide you the most business or who are most reliant on you for services and keep them in the definition, and cut off the tail of the dataset that represent geographical units that provide less business or are less reliant on you for services. In most of the business literature this cut-off point is 70 to 75% but it should vary by organization, and be considered when doing this process with your patient data. The Health Center Program used this methodology for its most recent service area competition. Using Health Center Program Grantee provided patient service area data, service areas were defined as the ZCTAs that contained 75% of the patients of the grantee that was currently funded for that service area. This type of service area can be seen in the UDS Mapper.

#### Slide 30: Sample Dataset Patient Counts

Here we see all the patient information that we geocoded in HealthLandscape, added census tract codes to using WebGIS, and aggregated to counts of patients by census tract in Excel. We can see that our 45 patients are reduced to 26 census tracts with the tract with the most patients having 4 and the 13 tracts with the fewest patients each having only one patient. I have rank ordered the census tracts by the number of patients. To begin drawing my service area or community, I want to start with the census tract that has the most patients, then add the one with the next most patients, etc. until I account for a certain percentage of my patients. As I mentioned previously most business literature suggests the cutoff point is between 70 and 75%. I've added a column that shows the cumulative percent as we add

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census tracts and you can see that when we get to the cut between census tracts with 2 patients and census tracts with 1 patient, the cumulative percent of patients I have included at that point is 71.1%. So for my community definition, I will make the decision to only include those census tracts with at least 2 patients.

#### **Slide 31: Sample Data Patients by Census Tract**

So here we can see our patients by census tract, including only those census tracts with at least 2 patients. It's not a contiguous community; I have census tracts all over the place- even some across the river! As I mentioned before we will have to decide if we are comfortable defining our community with this water barrier in the middle of it (but people here seem to be willing to cross the river so maybe it's not a big deal) and we need to decide if we are comfortable defining our community that is not contiguous. There is no simple answer in this case. Most census tracts that are represented here are in Ward 8 but the one with the most patients is not. It will be up to you to decide (and document!) how you come to the final decision.

#### **Slide 32: Penetration**

Rather than looking at the counts of patients per geographical unit we can look at penetration. Penetration allows us to look to see how dependent that geographical unit is on the clinic for service rather than looking at how dependent the clinic is on that geographical unit for business.

Very simply we divide the number of patients by the number of people living in that geographical unit. (Numerators and denominators!!!) In this example, census tract 1 has fewer patients than census tract 2 but census tract 1 is more dependent on the clinic.

#### **Slide 33: Important Considerations for Health Center Program Grantees...**

Before we sign off on this module, there are some important considerations to defining community for Health Center Program Grantees (these are the organizations where you work). As Dr. Liaw mentioned, the Health Center Program movement was spearheaded by Jack Geiger who modeled the Health Center Program on COPC. The ideal structure of the Health Center Program would therefore be one where service areas or funded communities do not overlap. That way each health center would have a funded community that they are responsible for and would not need to worry about competition or duplication of services within their funded community by another Health Center Program grantee.

However, Health Center Program grantees exist in health care markets that have other providers. Furthermore, to preserve the community-ness of their health centers, health centers may not want or be able to grow to serve the entire population in need within their entire city or even within their funded community necessitating the need to have other providers to meet the need in the area. The reality of the funding situation for most health centers is that they must also rely on patient and insurance payments from patients that can pay or who have insurance. Therefore another health center serving the same service area could be taking paying or insured patients away from your health center and could be seen as a threat to your health center's financial viability.

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Also, patients have the freedom to choose where to receive their health care, so in cities where there are multiple grantees whose funded service areas do not overlap, patients that live in one health center's funded service area may choose to go to the other health center. So even though funded service areas might not overlap, actual service areas might. The reason the UDS Mapper was built was to be able to assess service area overlap, but it represents a shift from comparing health center A's funded service area to health center B's to looking at where patients are really coming from to go to a health center for services.

#### **Slide 34: Take Home Messages**

The things I hope you take away from this module are that you must define your community for COPC. And that there are a number of ways to use data to come up with that community definition. Importantly, you can use your own patient data in the process and there are free tools you can use to do this work. Also there are free tools that have already done some of this work for you!

#### **Slide 35: Survey Links**

(No accompanying text)

#### **Slide 36: To Obtain CME Credit**

(No accompanying text)