

Per Ostmo:

Thank you for joining us today. During today's webinar, Dr. Jan Probst and Dr. George Pink will discuss how the definition of rural impacts research.

Today's webinar is brought to you by the Rural Health Research Gateway funded by the Federal Office of Rural Health Policy. Please note that all attendees have been muted, but you may submit questions for our speakers using the Q&A function. Today's session will be recorded and posted to the Gateway website for later viewing, and a brief Q&A will follow today's presentation.

My name is Per Ostmo and I'm the Program Director for the Rural Health Research Gateway. I'll drop my email into the chat, so please reach out if you have any questions. If you are unfamiliar with Gateway, we provide easy and timely access to research conducted by the Rural Health Research Centers funded by the Federal Office of Rural Health Policy. You can stay up to date on the latest rural health research by subscribing to Gateway's research alert emails, or by following Gateway on social media. And we'll drop those links into the chat as well.

Before we begin today, I'd like to point out that RHHub recently held an excellent webinar on rural definitions, which focused on changes after the 2020 census and how those changes affect rural areas eligibility to receive federal funding. So if you are a grant writer or if you just can't get enough content on rural definitions, I strongly encourage you to watch that recording on RHHub.

And I have a quick shout out to the National Organization of State Offices of Rural Health because tomorrow is National Rural Health Day. There is a full calendar of events including some webinars that are happening tomorrow. So head over to powerofrural.org to learn more.

And now it is my pleasure to introduce our presenters. We have two today. First, Dr. George Pink is a research professor in the Department of Health Policy and Management at the Gillings School of Global Public Health. He is the Deputy Director of the North Carolina Rural Health Research Program and a senior fellow, senior research fellow at the Cecil G Sheps Center for Health Services Research all at the University of North Carolina at Chapel Hill.

And second, we have Dr. Jan Probst. She is a former Director of the Rural and Minority Health Research Center at the University of South Carolina. Across nearly 20 years of leading the center, Dr. Propst designed and collaborated in research projects using a variety of metrics for identifying rural persons and places.

So Dr. Probst, you are first today. You can go ahead and share your screen.

Jan Probst:

I will share my screen and there I am. Greetings. Apologies. I am speaking to you, whoa, from a hotel because I am at the South Carolina Rural Health Association Conference and missing the first session so that I can give this talk

because like Dr. Pink and all the people who presented last week, I'm obsessed with rural, studying rural and saying what rural is so we do it right.

Now, if I do this correctly, I am going to share screen. Wait, I'm really bad at this. Okay, share screen. I'm sharing my screen, share, and I'm going to turn all my slides.

Can everyone-

Per Ostmo: All right. Looks perfect Jan.

Jan Probst: Awesome. Okay, so as I said, I'm going to talk about defining rural and advancing rural research. And there will be some resources and links in the end of this slide. It's kind of like the footnotes that you can download because I'm sure that the Gateway is going to put this up and make it available to everyone.

Now, although we are always complaining that there is not enough data about rural and I can do a whole long whine about that, it is also true that there's lots and lots of potential data sources out there. And I just grabbed a screenshot of the RHHub to point out that there are so many.

The problem is that when people study rural, they can be all over the place. And the problem is all over the place is great for literature and music and it's not so good for science where the whole purpose is to be replicable so that other people can see, learn and build on what you have done, which isn't possible if your definition is kind of weird.

Now, just flicking quickly, we know it when we see it. The population density of Manhattan, which is New York County, New York is 72,918 people per square mile. Yep, urban. Loving County, Texas, the least populated county in the US, 0.1 person per square mile. We kind of know that's rural.

Some of the things that people tend to forget is that Hamilton County, a couple hundred miles north of Manhattan is also rural and in fact only has three persons per square mile and therefore counts as frontier rural in a lot of definitions.

And I'm just putting out that range of landscapes because I would love for the literature to stop having multiple definitions sometimes in the same report. Now if this report were like a paper done by a grad student, I wouldn't say anything, but this is a AAMC. And if you'll notice they use three definitions. Wait, one, two, three, four definitions. And by the way, this one I'll warn you about is not a great one and they skip a whole bunch of guys. So it's like, yeah, no, no, let's, but to be fair, they do tell us exactly what their definitions are, which is helpful. It's just, it's hard to build.

I will throw in one caveat. For those of you who are working in a situation where you're helping your state government do some sort of research or evaluation on programs, legislatures sometimes come up with their own definition of what counts as rural for funding purposes. For example, I've got a screenshot here of the Center for Rural Pennsylvania, which is a legislative agency of the Pennsylvania General Assembly and they define rural as fewer than 291 persons per square mile. And New Jersey considers a community rural if it has a population density of less than 500. If you're working within those states and within those states only, you kind of have to adopt those for policy evaluations.

But I'm trying to talk here to a broader audience, to researchers, graduate students, people who might want to get into this line of questioning. They've bought into that we need more rural research, but how do we do it? And I'm going to talk in my little bit about three big points. What level do you measure rural at? What are the cut points that distinguish rural from urban? And then I'm going to do a third one at the request of the Gateway on doing cut points when you're studying special populations, which is I'm going to draw from an example of a report that our center published in this past year. And if I'm talking too fast, somebody tell me. I go.

Okay, levels of measurement. I'll start at the bottom of this slide. We're not going to deal with the Dartmouth Atlas Projects. The late Dr. Gary Hart, he was a very nice guy and he never used expletives, but I would've pointed out you can only have a hospital referral region where you have a hospital or a hospital service area where you have a hospital, and therefore those are not appropriate to studying rural.

I'm also not going to discuss public PUMA. Quite, quick, what is the PUMA? Public Use Microdata Areas, which is a census product that lumps people for individual research where you want to count, do person level research and do 100 groups of 100,000. That's very nice, but there are no standard definitions of rural that apply to PUMAs, although people have tried to do it and PUMAs are just kind of odd. In a big city you have lots of PUMAs and if you go to Northwestern Arizona, you have two counties and one PUMA.

So we're not going to talk about PUMAs. We're going to talk about counties and we're going to talk about ZCTAs, which is Zip Code Tabulation Areas, which is a census product that translates Zip Codes into the census tracts that the Zip Code encompasses.

Counties, I like counties for the reasons that you see here. They're relatively stable over time. They're not perfectly stable. I have done research going back into the '30s and you can find particularly in some states like Florida, their counties were still just emerging. But a county is relatively stable, haven't changed a lot. Somebody is in charge. There is a county government. There's a clerk. Somebody's in charge. Zillions or shall we say multiple data sets are available at the county level and there are multiple well-established rural definitions.

And as I think may have been covered in either last week's presentation or Dr. Pink will address today, there are disadvantages. Counties in certain parts of the country are great. I'm here in the south. A county is pretty much a community. If I were in the southwest, there are huge counties. The standard line being that the Grand Canyon is in an urban county because the counties are so large there, so you can miss. There are counties. Somebody's in charge. You can look over time with some disadvantages.

And I'm going to do a shout-out to the Shep Center. This is an article that they published in Medical Care in 2021 that has a great little slide for understanding where all the data comes from. And as also Steve Hirsh pointed out last week, everything starts with the census. And right now when you look at counties, they're in the middle of that Shep-centered typology.

The Office of Management and Budget decides what are core based areas which helps define metro versus non-metro. And typically this has been the metro - non-metro definition. If a county has a urbanized area, one urban lump, not two urban lumps, one urban lump that has more than 50,000 people in it, that is a metropolitan statistical area. The tricky part is they also do micropolitan core-based statistical areas, and I'll explain that in a little bit.

Micropolitan is a form of rural. A micropolitan county has a town of more than 10 but fewer than 50,000 people. So it's a town. It's not what most of us would call a city. But once you make that springing from that metropolitan and non-metropolitan definition, there are multiple codes that are easily accessed online. These two, Urban Influence Codes and Rural Urban Continuum Codes are products of the Department of Agriculture. Because agriculture has been studying rural for a long time. Way before healthcare was into rural, AG has been into rural. And you can download those codes and all of their documentation easily. The National Center for Health Statistics also uses counties in its five level scheme.

Wait a minute, I got to turn my page, make sure I'm keeping up. There we go. And I do have, like I say, notes and you can see the footnotes are in my notes.

The National Center for Health Statistics, and this is fully documented in the slides, divides things into four areas. The large central metro is pretty much what we would consider inner city, the golden suburbs, whoops, sorry, small cities. And then they have two rural definitions, non-metro micropolitan which as I mentioned are the counties that have a town of less than 50,000 people and then rural non-core. They don't even have a town that big. The smallest town caps out earlier.

The reason I put micropolitan in red is because I hate that word deeply and with a passion because people think politan, city, policy. No, there's my picture. Politan is Rockville, Maryland. It ain't Saluda, South Carolina. And that's the micropolitan versus ... Excuse me, metropolitan in a nutshell. Whoops. And there's one with a Community Access Hospital. There we go.

Federal public use files, many of them use the National Center for Health Statistics codes in one way or another. The current beneficiary survey, if you wish to get into it, uses the metro - non-metro split. The National Health Interview Survey contains the National Center for Health Statistics codes as does CDC Wonder mortality data. You can actually get mortality data at the county level, but it is obviously frequently more useful if you only want to look at one diagnosis to aggregate at all the non-metro counties or all the micropolitan, all the non-core counties. So you can do wonderful things with rural there.

The National Survey of Children's Health includes those codes, but it has the caveat that geographic data are not released for all states. So you got to work with what you got. The behavioral risk factors surveillance system, which is great for what's going on with adults and what they say is going on with them has rurality available from this time forward.

You can see my little note there, don't use MS code. If you want to know why, let me know and I'll explain it. It's probably not a detail that I need to go into for everybody.

Here's a county level example. One of the great data sets that you could access through the RHIhub is a CDC Places dataset. And what CDC has done is worked with I believe the University of Wisconsin to develop estimates of various disease and other conditions among adults. They work with the BRFSS and a variety of other data sources.

And here you can see we were able very nicely to download and draw a nice map of where we have high diabetes prevalence in the US. And you can see we have a lot of it in Appalachia, in the southern region, in the southwest, in selected areas where we have Native American Indian reservations. So it's great and wonderful.

And we used it in one of our center's reports to do a metro/non-metro split. And then do, do you have diabetes education. Because it's really helpful if you've got persons with diabetes. That's not like you get a shot and it goes away. You've got to take care of yourself every day. The regimen is somewhat complicated. People have to learn it. So we want it to be there.

And you can see here we have a lot of rural areas, like really big swathes of rural where there is no diabetes self-management education program located within the county. Obviously people could rely on internet-based stuff, but depending on who the patient is and what their abilities are, that may or may not be as appropriate as in-person education to help that person understand their disease and live with it.

When I'm saying diabetes management education, I'm talking about the stuff that Medicare and pretty much all commercial insurers pay for. It's a special. It's

not somebody talks to you and says, "Oh, let me tell you about your diabetes." It's a very special live curriculum.

Moving, flying on because I got a lot and I don't have a lot of time. These ZCTAs, ZCTAs are zip code tabulation areas and they are, as I noticed before, sub-county measures. And there are definitions that are used within FORHP and I'm going to talk about the frontier and access codes and I'm going to talk about the rural urban commuting areas and what they are. Zip Codes. By the way, I've got a trademark there because technically Zip Code is a trademark of the US Postal Service. It's a route. It's where the driver goes to deliver your stuff. But ZCTAs does kind of overlay that route over land and figure out the census tracts that fit in.

The advantage of ZCTAs is they're local. If you have a great big county, it's not going to help you to know that the county has a problem. You want to know this is the ZCTA where we have the highest low birth weight babies. This is where we want to put our clinic.

The other advantage is people understand that concept. The notion of your Zip Code is more important than your genetic code has gotten out there a lot. So people understand that. And the other thing about a ZCTA is because it's smaller than a county, if you have a county with a hospital or some sort of other service in it, you can go from the middle of the ZCTA to that facility and do some distance calculations.

Disadvantages, if something's going wrong in a ZCTA, you got to go up to somebody else. Nobody's in charge. They change over time more than, excuse me, counties do. So you have to be cautious with time series analysis.

And this last one, which I put in red because I don't think everybody knows it, it's not a one-to-one correspondence. There is a translation feature that links ZCTAs to Zip Codes because some Zip Codes actually don't have anybody living in them. They're a Dropbox at an airport. I haven't figured out all the details. Some of them get smooshed together, but in any case, there is a software you can just google to get and do that. So it's not hard.

There are two principal ZCTA characterizations that we use in rural health. The Rural Urban Commuting Areas or RUCAs and I believe at the late Dr. Hart was involved in the development of these, and they go from 7 to 10. So that's a really fine distinction, getting more and more rural. And if you're really interested in it, they have two digits. The first one, like one is a metropolitan, or let's say seven, I'm rural. And then there are other ones that say I'm rural, but people commute from here to an urban area. I'm rural but and so on. Fascinating if you're into it. They also, there are a number of federal programs that refer to frontier and remote areas. And there it's fairly complicated. I have got the citations in my slides that you can see how these all sub out.

Okay. Here is an example. One of the things that we looked at is home health service. Now in theory, because it's a required benefit, every Medicare enrollee is entitled to home health service after an episode of acute hospitalization to help them get better. And one of the things that we did is each home health service agency is required to report to CMS the Zip Codes it serves. So we mapped out all those Zip Codes and counted how many people are serving each ZCTA. And what we were looking for was who isn't served? That's the no service. Or who's served by only a single agency because if they change their mind, you flip to no service.

And you'll notice in RUCA 1, the most urban areas only a very small percentage are only served by one thing. And for all I know that's very few people live there. But when you get out to Ruca 10, all of a sudden now you're seeing that 25% roughly are served by only one agency and 16.4% are not served at all. This is a level of detail that you couldn't get by looking at counties. And by the way, raises to me some interesting social justice questions in that we deprive some of our rural residents of care to which they are entitled. Settle down.

All right, this one uses that same thing, that same principle, how many home health agencies are serving the area. Looking at frontier and remote areas, the documentation for these codes are in the slides, in the notes pages. But the bottom line is as the numbers get big, we're getting further and further out in the woods. And when you look at all the ZCTAs that are in, not frontier and remote, only 2%, which is about what we saw before on that previous slide, lack all home health service. But by the time you get up to the frontier and remote, you'll notice that 33% of the furthest and remotest lack service, which is helpful to know because for policy purposes, one might wish to see if the reimbursement for those services in those areas should be tweaked because clearly health agencies are not voluntarily choosing to enter that market.

Okay, that was lightning. We did counties. We did ZCTAs. We tossed out major coding things. Sometimes you want to study stuff and there is no easy category. We were asked by FORHP to examine access to care for minoritized populations and to look at it at the geographic level rather than the personal level. I.e., don't just run BRFSS and see what people say sorted by race/ethnicity, let's look at geographic. So then you have to say what is a geographic high minority place? And I'll go on to point, we changed this language, and what is high anyway?

And the first thing we did of course was we did decide we were going to use ZCTAs and we're going to start measuring at RUCAs. But the thing that we then had to define is what is a high percentage? Because there are a lot of papers out there that will look at majority/minority neighborhoods, but those occur principally in urban areas where you have decades of segregation. We're a little bit less here. So we developed a rural specific metric, all of which is documented. And I'll show you in a minute, rural minoritized racial groups live in certain areas in rural. We will show you this.

So we all of a sudden realized that, okay, this is very different. So what are we going to do? And we said, "Aha. We're going to define high as top." And by the way, we very intentionally in all of our documents, use the word top rather than high because when you use the word high, somebody can say too high. And we weren't going there. So these are persons in the top. And you'll notice that we had to have different ones for rural and urban except for white people. They're like everywhere.

Here is our distribution by ZCTAs of places that have a top priority, 95th percentile. And it is exactly what you would expect based on historic patterns. That's the Lumbee Indians in North Carolina. We have Black populations here, Indian populations in Oklahoma, Hispanic populations, and a lot of purple for persons who are both Hispanic and Indian. So there's a lot of Hispanic and Black, but still a interesting map that takes away from the picture of rural as all white people wandering around in Chevy trucks.

And we use that measure to look at a couple things, biracial ethnic, birace, easy for me to say, and were they in the top, excuse me, group or not? And if you are in a ... This is the all other, all the ZCTAs that don't stand out. And you'll notice you are more likely to lack service if you're rural, obviously. But wait, let's look at ... Speak. American Indian, Alaska Native. Notice that they come out very highly lacking Hispanic, highly lacking because we're in the southwest where the distances are huge.

But you are pulling here into the disparities that come with urban rural, which is sort of covered here, and the disparities that come with being parts of different racial ethnic groups. And we did the same exact thing. All of these are in the slides. I don't want to talk too long about them, but you can see that one can produce an analysis at the ZCTA level that leads to findings that you might not otherwise have seen at the county level.

And I'm wrapping up because I promised I'll be done in 20 minutes. Hopefully I've got it. I haven't seen a warning note yet. Defining rule is complex, but one of the things that drives me crazy is getting a paper to review and they say, "Well, we decided to define rural as." No, no dear. No. There's a lot out there. There are multiple definitions that one can choose among, and there's bound to be one that is going to suit the question that most people have, unless I say that caveat of specific state agencies.

Working with established metrics allows studies to build upon past work. And this presentation has been approved by Sam, the rural health advoCATE who reminds you that tomorrow is National Rural Health Day.

Per Ostmo:

Thank you so much, Jan. We do have a few questions that have rolled in that we're going to pause and take care of right now. So first, are there any examples of indices that use established or novel rural schemes?

Jan Probst: I'm going to say ... Huh? What is it? I'm sorry, that was not very elegant. When you say indices that ... Oh, wait. Okay. I'm trying to think. Does this person mean an index that somehow combines social determinants of health and rurality or an index that combines disease and rurality?

Per Ostmo: I think the idea here is a novel scheme. Are there any unusual or definitions of a rule that you've come across that have been valuable or novel?

Jan Probst: The informal one is rural where you can pee off your backyard and nobody will care. But that's not very scientific, especially if you have little boy children.

Per Ostmo: It's a tricky question.

Jan Probst: No, no, that was an interesting question. I will have to think about it, and if anything occurs to me, I'll have Sam tweet it out. But mostly I am happy when people use standard definitions and say, "Building upon X, we go to this."

Per Ostmo: All right, thanks Jan. The next question, do you have any comments on three digit Zip Codes? Have you ever used three digit Zip Codes?

Jan Probst: I have never used three digit Zip Codes. They don't get to the level that I want. I guess in a way is a comment. And realistically you can get ZCTA level data from CDC and from the Agency for Healthcare Research and Quality. Both of those will provide you estimates at the ZCTA level in addition to the American Community Survey of the census. So there's enough available. But I understand in a patient database you might only have the first three, so you're kind of like.

Per Ostmo: All right, thanks John. Our next question has to do with American Indian and Alaska Native populations and whether or not they are included in rural place counts. Some of the places, for example, in upstate New York where they've tried to run reports on the MI rural tool on RHlhub and the tool seems to have some issues there. So the individual who asked this question, first, I would like to direct you to RHlhub for help using the tool. But Jan, do you have any experience with American Indian or Alaska Native populations not being included in the population counts?

Jan Probst: No. That is something I have not heard before. Thank you again. But I do have persons who are ... Stop babbling. I do know researchers who are tribal and I will ask them if they have any information about that.

Per Ostmo: All right, excellent. We do have a couple more questions, but we'll get a couple more and then George is going to take over here. So what about the public hospital district level when district boundary is split in a county and then they share a Zip Code? How can you identify needs of the specific residents within the hospital district boundaries?

Jan Probst: Interesting question. My answer would be hire a GIS guy and have him map it out for you because they can do that. They can go down to the lat longs of your furthest address. But wow, that's an interesting question. Other than literally doing it that way, I don't know.

Per Ostmo: Okay. We're going to do one more question here before George takes over. So realizing that groups such as Native Hawaiian and other Pacific Islander populations, we didn't see those in your slides. So how would you include those in the population?

Jan Probst: Oh, they're in there. They're in there. They're in the AIAN of course, but wait, let me retake that back for the ... Excuse me. They're in our slides if they lived on the mainland US. One of the problems that I would encourage people to look into is the islands, it's a whole nother story because you may have to go from island to island. So if they are Pacific Islanders living literally in Hawaii or the Pacific Islands, we would have to do something else to ascertain. Perhaps ask them time questions like how long it takes them to get to healthcare.

I might actually, if I were them, if I were they, I would actually probably talk to my state Department of Transportation or local Department of Transportation. Those guys do things called origin destination studies, and they can tell you how long it takes to get from A to B on pretty much on the road system or the transit system if it has vessels rather than roads.

Per Ostmo: All right, thank you Jan. We do have a bunch more questions that are really excellent, but we're going to pause on those and wait until the end. So George, if you're ready, you can go ahead and pull up your slides. And Jan ... Oh, there you go.

George Pink: Okay. Thank you very much Jan. And I think she's done a great job on defining rural. I'm going to take us down a little different path because I am with the North Carolina Rural Health Research Program, and most of our work focuses on rural/urban hospital comparisons and often Medicare special payment designations. So the differences between Critical Access Hospitals, Medicare-Dependent, Rural Referral Centers, and Sole Community Hospitals.

We typically use two definitions more than any other type of rural definition, the FORHP definition, because they're our funder and they're one of the primary users of our research. And then the OMB/CMS definition, because they pay hospitals. So often, these are the two definitions that we use the most.

So if we just compare those two, the FORHP, just definition is in the top and the OMB is on the bottom. The rural population numbers in the far right column come from a report that RUPRI did a couple of years ago. And if you look at these, then we can see specifically the differences between the two definitions. So both definitions include the non-metropolitan counties, and again, this is

what Jen was talking about in terms of micropolitan and rural counties. That's how OMB/CMS defines non-metropolitan counties.

But then FORHP also adds in census tracts with RUCA codes 4 to 10 inside metropolitan counties. Large census tracts with low population density with RUCA codes 2 to 3 inside metropolitan counties, and all outlying metro counties without an urbanized area.

So that changes the number of people who are considered to be rural. So according to RUPRI, in their estimate OMB using CBSA estimate there's about 46.3 million or 15% of the total population is rural versus FORHP, which estimates 57 million. So the difference between the FORHP and the CMS/OMB definition of rural is about 10.7 million people, which is a fair number of people. It's 3.3% of the population.

Why do we do this? Well, I stole this from the Rural Health Info, which has got some great pages on the rural definitions. Why do they differ? Well, because the needs of CMS and the needs of FORHP differ. In fact, the needs amongst all federal agencies differ. And sometimes they use different definitions for eligibility criteria. The policy implications are different. Over time many different definitions have been used for different purposes. There's no one right measure. There's no one measure that's better than another. Each definition has strengths and weaknesses, and it really depends on the application to which the definition is going to be used.

So I'm going to give you two specific examples of research projects that we are asked to do by FORHP and just show the impact of the different definitions of rural on those two examples, on those two projects.

The first one was last year. We were asked to describe the types of where rural urban hospitals are located and then some characteristics of the counties in which they are located. Now this sounds like not rocket science, and it wasn't to a certain extent, but also we found some interesting information that we were unaware of.

So we defined, in this policy brief we defined hospitals using the FORHP definition as I just talked about a minute ago, all non-metro counties, census tracts with RUCA codes 4 to 10 and so on.

What did we find? Well, we went to the provider services file, which is standard file that we use when we're looking at hospitals. And to no one's surprise, we found that hospitals in rural locations are primarily Critical Access Hospitals and hospitals in urban locations are primarily PPS-only hospitals. There are no cancer hospitals in rural areas. They're all in urban areas. But what's kind of interesting about this figure is the differences in the size of the bar. So the Critical Access Hospitals, the yellow versus blue, the rural versus urban, and so on.

So if we dig down a little, we actually find that there are Critical Access Hospitals, PPS-only hospitals and PPS hospitals with special payment designations in both urban and rural locations. More specifically, there are actually 59 Critical Access Hospitals in urban locations. There are 377 Rural Referral Centers in urban locations, and 74 other hospitals with special payment designations also in urban locations. So there are a fair number of hospitals which have got nominally rural designations that are located in urban areas.

The question of the [inaudible 00:36:58] are Rural Referral Centers rural hospitals, we struggle with this because 80% of them are in urban locations. They tend to be larger hospitals and they tend to be much more profitable than other kinds of rural hospitals. So we're always a little reluctant to include them in our profitability briefs because they skew and make the profitability performance of rural hospitals look much better than it really is.

If we had not used the FORHP definition, if we had used the OMB/CMS definition in this study, what would've happened? Well, first of all, all hospitals located in those three additional criteria in the FORHP definition of rural census tracts with RUCA codes 4 to 10, large census tracts all outlying metro counties, they would change from rural to urban because the CMS/OMB has got a narrower definition of urban.

Well, how do we actually calculate? Where would we go to find what that number would be? Well, you can go to our website at the Sheps Center in the North Carolina Health Research program where you can download a list of all hospitals in the United States, and it has all the different rural definitions. Not all, it has the FORHP, UMB and others RUCA for each hospital in the United States.

So what we did, if what you find exactly is that if we had used the CMS/OMB definition instead of the FORHP, in fact 397 hospitals, almost 400 hospitals would move from the rural column to the urban column. So according to CMS, there are far more urban hospitals than FORHP thinks. And FORHP says there are more rural hospitals than CMS/OMB thinks.

The second example is a website that just went live, I guess about two weeks ago. As many of you know now, we now have a new Medicare designation called Rural Emergency Hospitals. They are the first new Medicare designation in 26 years, I believe, something like that anyway. This program went into an existence on January 1st, 2023. There are actually 18 hospitals. When I made these slides, there were 17 hospitals, but I think there was a new one last week. There are now 18 hospitals that converted to rural emergency hospital status since January 1st of this year.

A facility is eligible to convert to a rural emergency hospital if it was a Critical Access Hospital or it was a rural hospital with not more than 50 beds as of December 27th, 2020, including a hospital that closed after December 27th, 2020. So the key here is rural hospital. Critical Access Hospital is easily

identified. The issue is, the thing that we're interested in here is what is a rural hospital given that we know there are rural hospitals in metro areas.

Well, here, if you go to our website, here are the hospitals that have been approved by CMS for conversion to REH status as of two weeks ago, not as of one week ago. So you can see they're all over the place. There's several from Texas. That's the only state I think that's represented more than once. So it's early in the program, but this is interesting in and of itself.

So what geographic things do we notice about this table? Well, the first thing we notice is that there are five REHs where the OMB/CMS and the FORHP role definitions actually differ. They differ because they are ... OMB says they're in metro areas, whereas FORHP says they are in urban areas. Sorry, yeah. OMB says they're metro areas and FORHB says they are in rural areas. That's the first thing we notice.

If that's the case, then how are they eligible for being REHs? Well, the first thing we notice is that three of them are in fact CAH, Critical Access Hospitals. So they are qualified to be REHs because they're CAHs even though they are located in urban metro areas. However, at the bottom of the table, we also see there are three hospitals that are not CAHs, but they are located in metro areas according to OMB and CMS, which enforces the eligibility criteria. So what's going on here?

Well, the answer is rural reclassification. I want to thank Sarah Young for pointing me to the list of this website that has all the federal regs. It's a really great and useful website that I encourage you to go to for the specific regulations.

What this does is it allows any IPPS hospital located in an urban area to be reclassified as rural by meeting one of several criteria. One, it's located in the census tract of an MSA, second, any state law or regulation that deems it to be a rural hospital or located in a rural area, third, it would meet requirements of Rural Referral Center or a Sole Community Hospital if it was located in a rural area. And then there's five other very convoluted criteria, but these are the most interesting ones.

This is a possible explanation for those three hospitals, three REHs that we just saw. How do we know whether they have reclassified as rural? Well, our RHHub has a great tool with the website listed right there where you can go to it and determine whether a hospital is currently rural according to multiple definitions of rural.

If you want to know if it's rural from CMS perspective, the easiest way I find is to go to the CMS impact file, and I'll give you the website for that in just a second. But that can be used to determine whether a hospital has reclassified as rural for payment permits. Are they being paid as a rural hospital?

I did some investigations, detective work. I cannot tell from the regulations, the conditions of participation whether a hospital actually had to be reclassified as rural on the date the legislation was passed, 12/27/2020, or whether it's possible to be eligible whether a hospital that reclassified after that date is also eligible. So I'm just going to start with the 2021 impact file. That was issued in November 2020. So it's just before the 12/27/2020 date. And I'm going to see whether those three REHs that are [inaudible 00:44:47] that actually have reclassified as rural.

So when you go to this website, here's the CMS website, you can download the impact file. And there's many variables in the file. It's great for researchers. But the three I'm going to focus is on are these ones right here. URGEO, that tells you whether a hospital is in a geographically rural area. According to the CBSA, whether it's rural geographically. URSBA tells you whether it is being paid by CMS as a rural or an urban hospital. And then finally, RECLASS tells you whether the hospital has officially been reclassified as a rural hospital under the regulations.

And what we're looking for, if you see in the cell that says S-provider redesignated as rural under section 401 of the BIPA. So we then go to the impact file. We find those three hospitals. The first one is Anson General Hospital. And you can see there that the URGEO tells you yes, it is located in a geographic urban area, but URSPA tells you that CMS is paying it as a rural hospital. And then there's the S, which tells you that Anson General Hospital actually has been officially reclassified as a rural hospital. So this one is confirmed. Anson General Hospital is eligible to be in REH because it has been reclassified as a rural hospital.

The next one is Falls Community Hospital and Clinic. And same thing, it is located in a urban geographic area, but is being paid as a rural hospital as the URSPA tells you. And again, the S and the reclassification column tells you that it has been officially reclassified as a rural hospital.

Alliance Healthcare System however, this is for November 2020, so just before the legislation became effective. The impact file says it is in an urban area. It was being paid as an urban hospital, and the end says it has not been officially reclassified as a rural hospital. So maybe I'm wrong. Maybe they did not have to be reclassified by 2020. So maybe hospitals that are reclassifying now are eligible to convert to REHs.

So let's check the 2024 impact file, which was just issued a few months ago and see whether the hospital has been reclassified now and currently. So we get the 2023. This is the impact file, most recent one issued just a few months ago in August 2023. Again, there's Alliance Healthcare System and it says that it is still located in an urban area. It's being paid as an urban hospital and it has not been officially reclassified.

So now I'm scratching my head. I don't know why this hospital is eligible to be an REH. So what do I do? Well, when I'm desperate, I go to the media. I go to the media. I find this story that days after being named Mississippi's first REH, Holly Springs official designation is under review. So I do not know exactly what the status is right now. It is still listed as a rural emergency hospital in QCOR on CMS' website. Perhaps rural reclassification is in progress. Perhaps REH designation was an error. I just don't know. Above my pay grade.

So in summary, when you look at hospitals and whether they're considered urban or rural, the definition that you use, the FORHP, be aware FORHP definition is different from OMB/CMS. The number of rural hospitals using the FORHP definition is quite a bit greater than the number of rural hospitals using the OMB/CMS definition.

When there are rural reclassifications, that will change your research, your sample, the data points. So a hospital may be urban one year if you're using HCRIS data or you're using some other HCUP data, for example. It may be urban one year and it could be rural the next, and that could be evidence that the reclassifications happen.

And then finally, more often than not, the detective work is required to find out what is going on with a particular hospital. I went through just a simple example of Alliance, but we found many examples over the years where we couldn't figure out what was going on with a particular hospital and we required a fair amount of detective work to find out what's going on.

So it's 2:50 or 1:50. I will stop there and thank you very much.

Per Ostmo: Thank you, George. We do have a couple questions here for you. On one of your last slides when it was talking about the urban hospital, it said L-Urban. Is that a Luger County? What is the L?

George Pink: It stands for large.

Per Ostmo: Okay, perfect.

George Pink: It's just an additional modifier that CMS put in because they're small, urban, and large room.

Per Ostmo: Okay, perfect. The next question for you, George is, is there an official list of the hospitals, the SEHS, the RRCs and the MBHs?

George Pink: Yes. That's on our website. That's the US hospital list. The website that I showed you, that's the-

Per Ostmo: The Sheps Center?

George Pink: Yeah.

Per Ostmo: Okay. The Sheps Center website has that information. Okay, perfect. And one more for you George. Does the acronym MSA only refer to metropolitan? Are there instances where MSA can refer to both micro and metropolitan?

George Pink: No. MSA stands from Metropolitan Statistical Area, but I'll defer to Jan. I've never heard of MSA used for any other purpose than Metropolitan. Is that true?

Jan Probst: I agree with George. The one thing that is confusing people however, is that they are now using the term core-based statistical area and that includes metro and micro, which drives me slightly fruit bats. You shouldn't have one acronym that does two things because everything should be defined.

Oh wait, I should turn this thing back on so you can see me waving my hands. There we go. Whoops. And the cat. All right, that's confusing to people and it shouldn't be.

Per Ostmo: Thanks Jan. So some of the other questions here can be for either one of you. What definition of rural seems best to use related to describing rural workforce shortages and also the impact of HRSA grant programs to address workforce issues?

Jan Probst: Am I allowed to say call the WWAMI Health Research Center? There is a rural health research center that specializes in workforce and anything I could say is not going to be 10% as good as what those folks can say.

Per Ostmo: I agree. With workforce questions the WWAMI Research Center out of Washington, that is their specialty. So-

Jan Probst: University of Washington. Not Washington DC.

Per Ostmo: Yes. Thank you. University of Washington.

Okay, another comment. And Jan, this is from your presentation. So we're looking at Zip Codes again in counties. So while these classifications can tell us about diversity in our geography, is it not also true that they can flatten diversity? By putting counties in a category we implicitly say that they're alike in some important way, even though that they're different in other ways.

Jan Probst: Okay. That's something from philosophy 101 rather than research 101. Whenever you aggregate, you lose information by definition. But there are policy reasons for which we might want to aggregate. And one of the policy areas that rural definitely has in common with all rural regardless, is more distance between light bulbs. That's me being distance between light bulbs and fewer resources serving those people.

And you're right. It is always a balance between how much do I squish and therefore lose things versus how can I get down to levels of detail. Like for example, mortality data, which I mess with a lot, which is sort of grim. Yes, counties are much more helpful because you know who lives in the county, you know a lot more about a county, but you've got one diabetes death that year. That ain't going to tell you anything. You've got to aggregate a lot before you can see what's going on. I'm doing a presentation on this in two weeks.

Per Ostmo: Thank you, Jan. The next question was touched on briefly, but we're wondering about insights or recommendations for research that involves both the US states and US territories because some of the designations don't include territories.

Jan Probst: It's hard. BRFSS includes Guam and Puerto Rico, so one can get information about those, but I don't know if you can subdivide by rurality within them. Dennis Mohatt of WICHE, the Western Inter- something Consortium for Health Education spends a lot of time there and might be a useful resource.

Dr. Pink, do you have anything to suggest?

Per Ostmo: Okay. And George and Jan, if you can read the Q&A. This is quite an interesting comment, but someone had mentioned that I personally find that there is value in both having common consistent definitions like you mentioned, but also creating new definitions for the sake of your research. For example, MSM instead of gay or racism instead of race or slave legacy instead of race. Do you have thoughts on this? Can you create new definitions or is that just totally out of the realm of possibility?

Jan Probst: We're doing new definitions of rural. Excuse me. Can one create? Okay. As somebody who's really old and has done a lot of stuff, I created a definition of counties based on the level of lynching that they have, which was defined as a number of persons lynched with regard to the total population. That was an unusual and new method. If you want to explore history and you're saying slave legacy, racism, yes, it is possible. But that was very clearly defined. All the data were explored.

With regard to rural, I am not aware of that. I am aware of the sensitivity of terms. You notice we said minoritized groups, not minority groups and top, not high. One does have to be careful with one's words. And by the way, the findings of the lynching study, karma for white people. They were the ones who had the highest mortality in high lynching states, counties, the highest current mortality based on the history of prior lynching.

Per Ostmo: Interesting. The next question, has anyone heard any updates on the release of the updated RUCA codes developed from the 2020 census?

Jan Probst: George, I've heard 2024. That's all I've heard.

George Pink: That's what I heard as well.

Per Ostmo: Okay.

Jan Probst: The AG people do this, US Department of Agriculture. I love them. I have fangirled all over them at conferences, which really alarms them.

Per Ostmo: All right. We do have a couple more questions we have time to get to. Is there research using a healthcare needs based approach using the state all payers claims database?

Jan Probst: Wait, what? I am not familiar with something.

George Pink: Not familiar.

Jan Probst: Usually we do healthcare needs. I mean, you can do it for mortality. Claims are the people who got in for care, BRFS, local surveys. Hospitals and communities sometimes do local surveys.

Per Ostmo: Okay. George, nothing? Okay.

All right. Thank you. And there's just one more comment I want to drop into the chat box before we go here. This is a link to the WWAMI Research Center in Washington University.

Jan Probst: Great stuff.

Per Ostmo: Yeah. Thank you Scott for sending that link my way. So I want to thank George and Jan for being here. That was an excellent presentation. I'd like to remind everyone that if you missed the RHlhub webinar, that is on the RHlhub website if you're interested in 2020 census changes. Tomorrow is National Rural Health Day, so let's all celebrate. Head over to powerofrural.org to learn about the calendar tomorrow for webinars. And once again, thank you for being here. Thank you for all of our attendees for joining, and I hope to see you all at future Gateway webinars. Bye everyone.