

**NWX-HRSA ORHP**

**Moderator: Jennifer Burges**  
**February 4, 2020**  
**1:00 pm CT**

Coordinator: Welcome and thank you for standing by. Today's call is being recorded. If you have any objections, you may disconnect at this time. Participants are in a listen-only mode until the question-and-answer portion of today's conference. At that time, you may press Star 1 on your phone to ask a question. I would now like to turn the conference over to your host, Shawnda Schroeder, thank you. You may begin.

(Shawnda Schroeder): Thank you so much. Good morning, good afternoon to all of you who are joining us. My name is Shawnda Schroeder. I am the Principal Investigator of the Rural Health Research Gateway also referred to as Gateway. So today on World Cancer Day the Rural Health Research Gateway is hosting a webinar entitled Cancer Surveillance and Access to Care in Rural America.

For those of you who aren't familiar with the Rural Health Research Gateway, Gateway is a website that provides easy and timely access to research and findings of the Federal Office of Rural Health Policy Funded Rural Health Research Centers dating back to 1997. Our goal is to help move new research findings of the Rural Health Research Centers to various end-users quickly and

efficiently. One way we do that is through webinars.

Our website can also be used to find abstracts of current and completed research projects, publications that came from those projects, and any information you may want about our research centers or the individual researchers. Following today's presentation, this webinar will be posted on the Gateway website which you can find at [RuralHealthresearch.org](http://RuralHealthresearch.org), and it's also on the left-hand side of your screen.

You can also join Gateway alerts and you'll receive a periodic email anytime we have a new publication to share with you or when webinar is coming up or when we have an archive of a webinar available. I'd also encourage you to follow us on Twitter or like our Facebook page to receive daily notification.

We have muted all of your lines today, but I encourage you to use the Q and A Chatbox at the bottom of your screen if you have any questions that come up during the presentation. At the end of today's presentation, the HRSA operator will open the meeting for questions over the phone and I will read those written in the Chatbox to our presenters. If we do run out of time today, we will share your questions from the Chatbox with our presenters and share the answers to all of those questions in our email and online. I would now like to introduce our speakers for today.

First, we have Dr. Peiyin Hung. She is an assistant professor in the Department of Health Services Policy and Management at the University of South Carolina and core faculty in the Rural and Minority Health Research Center. Her research focuses on geographic disparities in health services utilization and quality of care.

Dr. Whitney Zahnd is a Research Assistant Professor in the Rural and Minority

Health Research Center at the University of South Carolina. In her research, she utilizes social epidemiological spatial and health services research methods to address rural and geographic disparities across the cancer control continuum.

Dr. Jan Eberth is an Associate Professor in the Department of Epidemiology and Biostatistics at the University of South Carolina and Director of the Rural and Minority Health Research Center. Her research focuses on highlighting racial, ethnic, and geographic health disparities and quantifying the importance of multi-level constructs on access to healthcare, utilization of services, and health outcomes - particularly on the topic of early detection of cancer. So thank you everyone for joining us today, and I will now turn it over to Dr. Eberth.

Dr. Jan Eberth: Hi, good afternoon - can you hear me?

(Shawnda Schroeder): I can.

Dr. Jan Eberth: Great - well thank you for having us this afternoon. We're very excited to present to this diverse crowd of audience members. I just want to introduce ourselves a little more. The Rural and Minority Health Research Center was founded at the University of South Carolina in 2000. And for the last 20 years, our mission has been to investigate persistent inequities in health experienced by rural and minority populations in hopes and in order to guide policy and program development as well as to inform future research efforts.

Each year we engage in projects that are informed by federal priorities and topics that are relevant to rural minority populations. You can learn more about us by visiting our center's website. To learn more about our past and current projects, you can view and download our policy briefs and manuscripts and learn more about the interdisciplinary team of researchers that make our center

work.

So since today is World Cancer Day -- thanks for pointing that out (Shawnda) -- today's webinar on Cancer Surveillance and Access to Care in Rural Communities is quite timely. My team and I will be discussing recently published and forthcoming research on studies that we undertook over the past two years. Specifically, we will listen to Dr. Hung present findings on residential proximity to cancer care providers across the U.S. and in South Carolina specifically.

She'll also discuss how distance-to-care has been shown to relate to cancer mortality and treatment initiation in our South Carolina data. Then I'll turn it over to Dr. Zahnd to present findings from a study we conducted to determine the challenges and opportunities to examining rural cancer disparities using population-based datasets and surveys. And then lastly we'll summarize the key takeaways and listen to any questions you may have.

So beginning in the year 2018, we partnered with the Federal Office of Rural Health Policy and the National Cancer Institute to perform a statewide environmental scan to identify opportunities to improve HPV vaccination, cancer screening uptake, follow-up of abnormal screening and timeliness and quality of cancer care among rural residents. Using a mix of both qualitative and quantitative approaches, we've engaged a variety of stakeholders in this process including rural health clinic providers and our fabulous State Office of Rural Health. This work is important -- because over the past decades -- more and more studies have shown significant urban rural disparities in cancer incidence and mortality as well as a declining availability of cancer care providers in rural communities, and we wanted to dig into that a little deeper.

So our cancer environmental scans had four major aims. First, we wanted to

look at the geospatial cancer care workforce in South Carolina and nationally to really understand more about the arrangement of health care providers. Then we wanted to explore what existing initiatives existed in South Carolina helping us identify gaps for targeting cancer prevention and control in rural South Carolina counties.

Our third aim was to determine barriers and facilitators to implementation of evidence-based and promising cancer prevention and control interventions specifically among safety net providers like rural health clinics.

And then our fourth aim was to look at care coordination and structural barriers that impact rural patients' cancer care experiences and outcomes. So today we'll focus -- Dr. Hung -- will focus on the first and fourth aim helping us better understand the geographic distribution of cancer care providers in rural communities and its impact on patient outcomes.

Because many of you in this audience aren't from South Carolina, we'll also present a mix of results so you'll be able to see some from South Carolina as well as some results nationally. Hopefully, that's a good mix to draw you in. Dr. Zahnd will focus more broadly on issues related to data availability and generalizability that impact our ability to conduct timely rural-urban disparities research.

So many of you know, Healthy People 2020 had the core objective related to decreasing cancer mortality. Specifically, the objective states that our goal is to get to 161.4 deaths per 100,000 person. And this -- as of 2015 -- that objective had been met in metropolitan counties in the U.S., but rural communities have not yet met that objective.

As you can see from the figure on the right, there appears to be a widening

disparity in cancer mortality between metro and non-metro counties over the period of study from 1999 to 2014. Now in this study -- published by Dr. Zahnd and CEBP in 2018 using national cancer registry data -- you can see that rural populations had higher incidence of tobacco-related and HPV-related cancers as well as colorectal cancer versus their urban peers.

Now note, these types of cancers are most associated with modifiable risks such as smoking, being vaccinated, and having cancer screening and adhering to cancer screening that's recommended by the U.S. Preventive Services Task Force. No significant disparities were observed progressing prostate cancer, however. For all cancers combined, the decline in incidence over time was greater or steeper for urban versus rural populations.

And lastly, I just wanted to point out -- and I know there was a webinar recently hosted by the Rural Health Research Gateway on this topic -- that rural cancer control is a renewed priority of many federal agencies. The National Advisory Committee on Rural Health and Human Services focused on rural cancer control in a 2019 policy brief., and I've linked to it here for you that are interested in learning more.

It had five policy recommendations, and our goal today is not to describe these or go into whether these recommendations are being met. But I do want to emphasize the importance and increased funding being put towards rural cancer control initiatives including by the National Cancer Institute.

So now I'm going to turn it over to Dr. Hung to begin talking about some of the residential proximity issues that I mentioned in the background.

Dr. (Peiyin Hung): Thank you Dr. Eberth. So today in this station I'm going to show with you two studies that we have on that thing regarding risk (spatial) proximity to

colorectal and cervical cancer care providers as well as the related outcomes.

So some of you may be curious about why we are focusing on colorectal and cervical cancers. As Dr. Eberth pointed out earlier, rural communities have higher mortality from colorectal and cervical cancers than their urban counterparts. And we know that based on the Healthy People 2020, there's no (end) to reduce age-adjusted colorectal cancer mortality to 14.5 per 100,000 persons as well as reducing the cervical cancer mortality to 2.2 deaths per 100,000 females. However, these objectives have been met in large urban counties but not in rural.

Most importantly, despite the improvements in preventive and treatment opportunities for colorectal and cervical cancers, rural patients are less likely to receive state-of-the-art treatments such as the (Anti) Epidermal Growth Factor Receptor combined with (Anti) generic strategy. Those kind of state-of-the-art treatments are kind of very less likely to receive among rural patients compared to their urban peers.

So this kind of disparities -- especially urban and rural disparities in cancer outcomes -- really concerns about access to cancer care. There are different definitions of mortality, but based on the Office of Management and Budget, we know about 20 percent of Americans live in rural communities. But only about 7 percent of oncologists practice in rural communities. And most importantly, not only the oncology -oncologists work for shortages for the best or high-capacity cancer centers.

Now the (old) National Cancer Institute or National Cancer Institute (unintelligible) cancer centers are in urban communities. This kind of different distribution of cancer care providers may be to travel (variance) for rural patients and this travel (variance) will hinder opportunities to access effective

diagnosis and treatment among rural patients. This also can lead to poor (of the) humans to cancer treatments and lead to a (worse) prognosis.

So it is important for us to identify and quantify distribution of cancer-care providers and also to detect vulnerable communities in rural America. That's why (these two hours) to ask (unintelligible) and the study objectives for this paper. The first two objectives are going to be addressed in this publication published in cancer recently.

One is to examine the driving distance from each residential area (Centroid) to the nearest cancer care provider across the United States. We also identify community-level factors associated with driving distance to each type of colorectal and cervical cancer care providers. And I'm going to share with you our preliminary results regarding the relationship between travel times to cancer care facilities and cancer outcomes. You see in South Carolina, colorectal cancer patients' data.

For this data, again we are looking at the relationship between the community that were factors and the travel distance to the nearest colorectal and cancer - cervical cancer providers. We derived a population (Unintelligible) demand data from American Community Survey five-year estimates for 2012 to 2016 for each zip code tabulation area. We derived the variables such as a number of (residence), social demographic mix, educational attainment mix, and the poverty level measured by the number of residents in each (zip code) that have income lower than 200 percent federal poverty level.

We also derived the provider data from 2018 physician compared data. All the physicians feel plans to Medicare would have their records in this data. We derived the practice locations of each physician and then converted practice location address to latitude and longitude coordinates.



Only providers that have primary over secondary specialty decide colorectal surgery, general surgery, gynecological oncology, medical oncology, radiation oncology, (and/or) surgical oncology will be included in this study. In this study, we only included risk (unintelligible) zip codes in 48 contiguous states and D.C. We excluded state areas in Alaska and Hawaii because residents in those two states may relate to air or water precipitations to access care.

So in the end, we include about 11,526 rural (unintelligible) as well as over 21,000 urban (zip codes) in this study. In overall, the urban zip code accounted for 285 million urban residents and those 11,000 urban zip codes 34 (million) rural residents. The primary outcomes for this study is majored by one-way road miles from each residential zip code (centroid) to the nearest cancer care physician - of course by specialty.

In order to identify communities with substantial travel (burdens), we also construct for each sector where the residence in each sector has to travel more than 60 miles to reach the nearest cancer care physician. The community level factors associated with travel (burdens) were derived from the data mentioned earlier and they include stricter (royalty). We use the third version of RUCA Codes -- primarily RUKA Codes to define rural versus urban. RUCA includes census origin to look at the census (region) to (unintelligible) travel (Quotas). We include also age groups, race ethnicity groups, as well as proportion of residents in each zip code in poverty and educational attainment mix.

So here I'm showing you the rural-urban differences in travel distances to each type of the nearest cancer care providers. You can see here, the white bars we put down the distribution for urban residents. The red bars are for the data for rural. The labels -- the numbers here -- indicate the observed median travel distance in miles to each type of the nearest cancer care specialist.

And the (Unintelligible) you can see will extend to the 5 percentage of each group. Of course, the (oldest) (spatial) was we found out (unintelligible) (neurosurgeons) from the right is the most proximal specialist with a median distance of 1.4 miles for urban and about three miles for rural residents.

And you can see across all of these specialists for those patients that required cancer surgery surgical procedures, those patients -- especially in rural America -- will face substantial travel (burdens). And you can see here the gaps between urban residence with regard to the residential proximity to this cancer surgeon including colorectal surgeon, surgical oncologist would have to travel greater than the residential proximity to other cancer providers, except general surgeon. It is also interesting to note that was a recent (exception) of general surgeons.

About 5 percent of the rural residents would have to travel more than 150 one-way-distance miles to reach the nearest colorectal surgeon, cervical surgeons, and gynecological oncology. In order to identify the rural-urban despair differences in terms of their proportion of those communities and residents having to travel more than 50 miles to the nearest cancer care providers, we're - we quantified proportional residence and issues across all the rural (community) zip codes and of course all the urban zip codes.

It's not surprising that rural residents will face a higher travel burden because we count - we simply indicate whether they had to travel more than 60 miles to the nearest cancer care provider. It is concerning that for those rural residents, they face the need for surgical - in case there's surgical procedures. They will have to travel up to 50 percent higher likely so have much higher likelihood to travel more than one hour to reach the nearest surgical oncologist colorectal surgeon or gynecological surgeon.

Other community-labeled factors associated with the likelihood of having to travel more than 60 miles include those communities that have higher residents in poverty and communities with higher proportion of residents classified as American, Indian, Alaska or Alaska (cognitive). It was also the communities look at in the South and the ways regions of the United States also facing the greater travel burden.

So why are we talking about travel (burdens)? In the ongoing study, we - our team at the University of South Carolina also (leveraging) South Carolina data to identify the relationship between travel (burdens) to their cancer care providers and the cancer outcomes for colorectal cancer patients. So this study basically is to quantify the (relationship) between driving times to the treating cancer providers and the (certain) time as well as days to treat cancer treatment initiation for those patients diagnosed with colorectal cancer in South Carolina.

We used - with (respective) (cohort) analysis of 25,651 patients diagnosed with invasive colorectal cancer in South Carolina (due) in 2001 to 2016. We (leverage) of South Carolina Central Cancer Registry because it allowed us to identify patient risk and location. The cancer statistics treatment characteristics, mortality characteristics as well as their first cancer provider identified or the provider indicators national - statewide. This allow us to link to their provider characteristics.

For those cancer providers that are in the hospital base, we get those practice locations and the characteristics from the American Hospital Association Annual Survey Data for the year of diagnosis. For those providers, they are all fee-based. We get we got their characteristics from the National Provider Identifier Registry.

So with this data, I'm going to share with you some preliminary results

regarding the descriptive travel time (two) (cases) of a (Unintelligible) travel time. The time from the diagnosis to cancer-specific mortality by how far they travel to their first cancer provider.

Here you see that for those patients they travel closer to their home to get the first cancer treatment (at least) on average income so (median) 41 months in terms of one month survival compared to patients that travel more than 30 minutes to reach their cancer providers. They live an average 36 months from their diagnosis. The five month differences in terms of survivorship is actually said this is (different) at .11 - .001 levels.

So we look at the days to cancer's specific treatments, we found that - oh like this Survival Chart here is the numbers that are closer to the (shorter) dates to the cancer's specific treatment. That means it's better. And you can see here for any kind of treatment, patients (has) traveled less than 15 minutes would have on average five days to the first cancer treatment compared to eight days to the first treatment among the patients that travel more than 13 minutes. And this difference is largely a result from the differences in terms of cancer surgery treatment initiation. We do not see the significant differences in terms of the time to the first radiation and time to the first chemotherapy by the distance group discrepancy.

But in the model, after controlling for provider-patient and community characteristics, the results were somehow different and it's very similar to the results in the (Unintelligible) First (Female) result here.

So overall we found that from the first part of my presentation, we found those most in need high-end burdens. Those most in need include rural residents, include the communities with higher proportion of American, Indian and/or Alaska Natives and communities with a higher proportion of residents in

poverty. And this kind of - these communities are - have disproportionate barriers to accessing cancer care specialists while they had already had existing disparities concerning cancer care outcomes in cancer care. We also found -- using South Carolina data -- those driving times to an actual treatment provider will be associated with a long time to treatment initiation and shorter time to cancer-related mortality.

So this leads to a conclusion and there is a suggestion the need to mitigate this (application) negative consequences of travel burdens - of long travel burdens. And there's also need to really leverage a promising policy matrix to target under-served and low-income communities and provide affordable travel options to (unintelligible) outpatient cancer care. There are a few to name.

You know, based on literature and (based) on (unintelligible) records, there are (unintelligible) promising (majors) used in (Unintelligible) health oncology - oncology approaches home-based or local hospital chemotherapy. We don't need all the communities to have (unintelligible) Cancer centers. We need Hospitals and we need local accessibility to the cancer treatment for rural residents.

We also can (leverage) the cancer - the 24 home health aides, nurse practitioners, and physician officials to mitigate the workforce shortages in rural America. This data are necessary to identify the disparities and detect vulnerable communities. Every community is different and it is essential to have data available for these studies in order to find effective policymakers aligned with each community's needs. So that leads to the importance of the data that Dr. Zahnd is going to share with us regarding challenges of using national data to study rural cancer control.

(Shawnda Schroeder): Okay, yes - thank you Dr. Hung. So now we're going to switch gears a little

bit and discuss -- as Dr. Hung mentioned -- some of the challenges of using some of the publicly available data sources for cancer surveillance. And we'll talk about both population-based surveys and other sources of surveillance data on - from cancer registries and clinical surveillance sources.

And for this section of our presentation, much of the findings we need to discuss is from a paper that -- Dr. Eberth and I in addition to some other colleagues throughout the country -- wrote discussing these challenges on particularly national percentage population-based surveys. This is part of a group of researchers called the Cancer Prevention Control Research Network. It has a rural cancer workgroup that Dr. Eberth is the co-chair of, and this is some of the work that that workgroup has done over the past year.

So one of the things I want to introduce to begin is the importance of what cancer surveillance data can do and how it can help in helping us understand and monitor the burden of cancer. And this can be done in multiple geographic levels and in guiding both public health and clinical planning to both the current Healthy People 2020 objectives and the proposed Healthy People 2030 objectives include some important cancer-related objectives regarding incidence, mortality, screening, survival and a lot of different components that these different data sources that we'll discuss include -encapsulate. So, and in another level -- at the state level -- conference of Cancer Control Planning that is required by - from the CDC that every state, territory and tribal organization perform a conference of cancer control planning process every few years. So a lot of the data in these different cancer surveillance sources can provide some guidance for that type of more state-based planning so that states and other jurisdictions can address cancer across the continuum from prevention to survivorship.

And then we look more to a local level with the requirements from the

Affordable Care Act that all non-profit hospitals conducted community health needs assessment on a regular basis. Some of this data that can be available at a local level across a hospital's catchment area can also be helpful as well. So you can see the clinical level or even local health departments in some of the planning procedures or things that they do might be informed by some of the cancer surveillance data that are available. And some of these cancer surveillance data also inform some of the federal programming that comes from the CDC such as the National Breast and Cervical Cancer Early Detection Program and the Colorectal Cancer Program in addition to help informing other federal initiatives or state-level initiatives as well.

So we're going to talk about very briefly are four different population-based surveys that you can see within the slides. And these are from different federal agencies from the National Cancer Institute, the Centers for Disease Control, and (HRQ) and as well as some other cancer surveillance data sources that are from the National Cancer Institute. And then also from a non-federal source the American College of Surgeons Commission on Cancer which is the last one listed - the National Cancer Database.

So starting off with the (HINT) -- Health Information National Trends Survey -- this is a population-based survey that's administered by the National Cancer Institute and has been for the last 17 years. And this is a survey that addresses cancer-related areas specifically with a particular focus on cancer communication and additional questions related to caregiving, screening, perception of risk, and cancer-related health behaviors. And this is a dataset that includes from a rural-urban perspective. And that's where we're going to be focusing on as we discuss this is how this can really be helpful for addressing rural cancer control.

And so with this particular dataset, some things that are really helpful for

addressing rural cancer control is that this dataset -- within the publicly available data -- includes rural-urban continuum codes which is a USDA measure that assesses the level of (morality) at the county level. It also includes information on census regions, so you're able to also do some stratification or analysis taking into consideration rural-urban differences across the Northeast, the Midwest, the South, and the West.

And it also has some additional regional designations that are really important for rural cancer control. And that includes a designation that indicates if a participant was from Appalachia. And then in the most recent release of the data from just last week they've started to include a designation that notes if a person was from the Delta Regional Authority.

And there's also some opportunities to get more geographically granular data by contacting NCI and also some processes in place to request data or linkages to some contextual variables. So for example, if you wanted to know the poverty level of a participant -- a county that a participant lived -- then you could, you know, have that - potentially have that data available.

So some particular strengths of this data source is that it includes the full continuum of urban continuum codes across all iterations. So it's not just simply a dichotomous rural-urban. It has the 1:9 rule or continuum code designation. It includes regional designations as well, and it covers a wide range of cancer-related areas that I mentioned from cancer-related health behaviors to areas of survivorship including things like if patients experience financial burden associated with their cancer, questions that are targeted towards cancer survivors.

But with some of these surveys, as it is with this one, there are small rural sample sizes. So while it's representative of the proportion of the population



that lives in rural areas, it does mean that there are small sample size. And this is especially true when you do kind of get down to the proportion of population or the survey sample rather than are cancer survivors.

Another surveyed national representative population-based survey is the behavioral risk factor surveillance system. Excuse me, the BRFSS which is administered by the CDC. And this one is not a cancer-specific survey, but there is a lot of questions that really get to areas of importance when we look at rural cancer surveillance and that includes questions on cancer-related health behaviors such as smoking and as well as adherence to colorectal, cervical, and breast cancer screening. Those questions are integrated into BRFSS every two years.

And there's also some optional module that states can include within their BRFSS survey that are related to things like cancer survivorship, HPV vaccination, and a new one is lung cancer screening which is a fairly new recommendation from the United States Preventive Services Task Force. And since - in the 2017 and 2018 data that are publicly available, there is - some states have included that lung cancer screening module which is really important when you look at the burden of lung cancer in rural areas to be able to monitor that.

So at the BRFSS, it include - has included since 2011 or prior to that too but has the metropolitan statistical area designation or non-metropolitan statistical area designation of every participant who participated via a landline. So I should note this particular survey is a phone-based survey that includes participants who are involved either by landline or cell phone. But since the NSA - non-NSA designation is only included for those the landline, there's been considerable missing in recent years for that particular variable because it's more of a sampling strategy or sampling approach variable.

So as recently as 2017, that particular variable has been missing by over 50 percent of participants. Now the newly released 2018 BRFSS data does have an explicit rural-urban variable with very minimal (unintelligible) because it does - doesn't necessarily take into consideration the modality that the survey was administered.

So some strength of this particular survey is that it is - has a large overall sample size. You're able to look at state level data either from the publicly available data that comes from the CDC or you can go to your individual states that you're interested in because this is administered at the state level. There might be opportunities to obtain data through your state to use for research. So there's some flexibility in obtaining that data and that might enable you then to get more granular with the rural-urban designation or apply other kinds of rural-urban measures.

And so there's also again -- and I mentioned the weakness of the availability of the rural-urban status variable until recently and even with the 2018 data --there are limitations in grouping rural-urban across the groups.

Another one to note from the CDC is the National Health Interview Survey. This one addresses a lot of different health-related areas that's specific to cancer. There are some questions regarding family history, cancer risk, and cancer survivorship. And this is one that you - for the rural-urban component is not publicly available. You have to go through your research data center which can cost about \$3,000 to access that data plus any additional costs due to traveling to those centers and things like that. There's a wide range of cancer-relevant variables and so that's a strength. Again the RDC access might be cost-prohibitive. And the way that this survey is administered and sampled, it doesn't allow for accurate or appropriate estimates at the state level.

So from the NHIS, a subset of those individuals participate in the Medical Expenditure Panel Survey which is administered by the Agency for Health Research and Quality. And this one has some questions related to health behaviors, screening, and cost of care as well as every five years they do a cancer supplement on issues related to financial burden of cancer and other survivorship-related areas. It's not that's the particular strength of this survey. But as it is with the NHIS, you know, the rural metric is -- as of 2013 -- it's only available at research data centers. So that's a limitation of accessing that data for non-federal researchers.

So shifting gears quickly to some of the other data sources, the surveillance epidemiology and results data -- or SER for the National Cancer Institute -- is a collection of NCI-funded cancer registry throughout the country representing over a third of the US population. So there's (SER) 18 which includes 18 registries and has a lot of information on every cancer diagnosed within those entities, related to the demographics of the patient, characteristics of the cancer, and some treatment characteristics.

But one of the challenges is as you can see on the table on the right is that (SER) includes - the population contained in that is only 10.6 percent rural whereas a US rural population is about 15 percent. And this is using the rural-urban continuum code non-metro, metro designation. And they also have some - recently have included some additional registries in that from New York, Massachusetts, and Idaho. And so that might increase the rural sample size but the distribution might then go down because of the inclusion of some more urban states.

But since strengths of both 18 -- (SER) 18 and (SER) 19 -- again population-based. You can link in contextual data from - based upon the

county. There is - through NCI you can get access to (SER) data linked to Medicare data and so that provides some additional claim space data to help understand any kinds of address, any kinds of research questions you may have.

In a strength of (SER) -- both 18 and 21 -- is that it over-represented rural minority populations. And so while the distribution overall and by different census regions as you see on the right might not be in line, the over-representation of rural minority populations helps increase the sample size of those.

The last one I want to mention is a national cancer database which is a clinical surveillance data source. And so I want to say the clinical surveillance rather than a population-based surveillance source because it only includes hospitals that are commissioned on cancer are accredited. And while this represents a really high percent of all cancer cases -- over roughly 70 percent -- it doesn't include non-commissioned cancer accredited hospitals. And those often might be hospitals that serve low-income populations or world populations. A lot of the -- for example -- critical access hospitals are not commissioned on cancer accredited, so there's a large portion of the rural population that might not be covered by this particular data source. And so that's something to think about with that.

But there's some interesting additional variables that are included within (CDB) data that are not in some of the more population-based registries. And that includes some more refined and more additional types of treatment-related variables to assess quality of care so related to chemotherapy or radiation or surgery. Again it is a large, large coverage group.

Some of the challenges of this -- as I mentioned -- are under-representation of rural hospitals and rural patients. There's a mix of geographic scale and the

contextual data, so some of the data regarding the facility itself is at the the zip code level and then some of the data regarding the patient at the county level and so that can be a challenge.

And we should note that in the Data Dictionary, some of the guidance for how rural-urban is defined is a little bit different than is commonly used by rural health researchers or from the guidance from the USDA. So that's something that I think needs to take some caution with people who use this to look at the different ways that previous studies have categorized rural and urban.

Begin just summarizing the overarching challenges and potential solutions of these datasets. There's limited accessibility of rural-urban variables, different definitions, and some of these datasets don't necessarily represent rural in a proportionate manner. Since solutions to address these things are to improve access to geo-coded data for non-federal researchers. So maybe allowing this to be accessed through non-RDC manners, improve research design analysis approaches to ensure adequate representation. So maybe there are ways that rural populations can see over-sampled or different survey (weights) that could be applied to better account for those differences and then increase the geographic scope and representation.

So the key things we want to emphasize here throughout our whole presentation is that we've identified that rural-urban disparities and spatial access to cancer exist and that it's important to understand how that plays a role in how cancer outcomes and cancer treatment. And so those are very important things to consider when we look at the role that access to care plays.

And another line we want to also recognize is there are challenges in describing rural populations within the national cancer data that might help - might affect opportunities to address rural cancer disparities. And so we think there's some

solutions though with these challenges including -- as you mentioned -- oversampling or improving data access for non-federal researchers.

So with that -- as we wrap up -- we do want to acknowledge our entire team here at the Rural Minority Health Research Center for their involvement and contributions to the work that we've described as well as the Cancer Prevention Control Research Networks Rural Cancer Work Group for their contributions to our paper that we discussed on cancer surveillance data sources and their role in rural cancer surveillance. We also want to acknowledge the support of the Federal Office of Rural Health Policy and HRSA in conjunction with the National Cancer Institute which has funded the work that we've described today.

If you're interested in additional research that our centers (stand) related to rural cancer, we have - you can see the link here to the Rural Health Research Gateway and some of the studies that we have published in some forthcoming studies. On the right is an example of a study that one of our student research assistants first authored that's available through that link as well.

We also want to give an applause for the Rural Health Research Gateway and just what a great job they do to disseminate to the research for the Rural Health Research Centers, our center and the other seven centers throughout the country. And with that, we are happy to answer any questions that you all have or whether it's on the webinar today or feel free to reach out to us via email as well.

(Shawnda Schroeder): Thank you - this is (Shawnda) again. Hopefully the sound quality is a little bit better this time. Thank you again for that presentation. I do want to turn over to questions. So if the HRSA operator would like to again give instructions on how to do so and then I will read questions from the Chatbox.

Coordinator: Yes ma'am - now it's time for the question-and-answer session of today's call. If you would like to ask a question, please press Star 1. Please make sure that your phone is un-muted and record your name when prompted - thank you.

(Shawnda Schroeder): And while we wait for those calls to come in, I would like to turn to the three of you to see if you'd be willing to answer questions from the Chatbox. The first came from (Jane) around Slide 14. But the question was around the - given that you were doing (centroid), are you doing a network analysis to determine road miles?

Dr. (Peiyin Hung): Yes we do. So I think we can answer a couple of the questions regarding the travel burdens, travel time, travel distance-related questions. So basically for the - both of the studies that I conducted - that we conducted, we use the math (class application) and using the driving road calculators for the quickest road distance. And quickest road distance was based on the maximum official driving speed limit for each road, street, or highway.

And then after determining the quickest road, we calculated the travel distance in miles as well as the travel time. A typical Tuesday at 8 a.m.- because you can measure the travel time (varies) a single day and on the weekdays or weekends. So this is basically the simple version of how we do for the travel measures.

(Shawnda Schroeder): And I just want to point out further that we , you know, I value the point that, you know, travel miles versus time is a key critical distinction. And so I think it was (Jane) who mentioned that, and I totally agree with you. You know, depending on the physical landscape of the place that you're in miles is - may not directly translate but it's kind of a true way to make that choice and that measurement. And this is the one we chose for this study.

Dr. (Peiyin Hung): Yes, I also wanted to add because the first study we published in Cancer Journal we were looking at rural-urban differences in travel differences and travel distances. The reason why we chose to present the travel distance in miles rather than time was because the travel times can vary a lot in urban given the time of the, you know, day that we calculated as well as the rural. So, in order to have each Engineers measure and we simply just present the travel distance so that everyone can get a sense of this measure.

(Shawnda Schroeder): Thank you - before I read the next question, are there any questions on the line?

Coordinator: There are no questions at this time.

(Shawnda Schader): Okay the next question in the Chatbox is asking about whether or not you have looked at cancer patients who opt out of care. So they're interested in knowing how many patients who are diagnosed with cancer opt out because of the burden of travel or lodging difficulties?

Dr. Jan Eberth: That's - that is a really good question. I will say that that is probably one that can be more specifically answered qualitatively or perhaps with medical records at the more local level with that specific reason being why they chose not to seek care. The SER and NCDB both have some variables that indicate whether or not somebody had -- for example -- had surgery. If they did and they have a few options of why they may not have, and that includes that they refused care. So that could - one of the reasons could be they're opting out. Sometimes they have - could be that they have co-morbid conditions that preclude them from getting care. And there might be a few other. They were not offered that care. That's another, you know, there's a couple of variables within those two datasets that get to why somebody might not have care or get care. So those are some things that can be answered with some of the datasets that we mentioned. But



they're - I think some more complete ways those can be answered at a more local level with medical record data or through more qualitative research to kind of get to, you know, why some of those patients might not seek care.

(Shawnda Schroeder): Thank you - and I'm not seeing. There were a couple of other comments in the Chatbox, so thank you for joining in the conversation. I think - oh, we do have another question.

So regarding cancer survivors in rural areas, do you have a source that compared their quality of life with urban?

Dr. Jan Eberth: That's a good question. I think that with some of the data sources that we mentioned, there would be an opportunity to address some of those things. For example, BRFSS does have a question that looks at, you know, whether or not somebody's ever been diagnosed with cancer and then it has some questions related to quality of life. So I think that if you were able to, you know, create a subset of cancer survivors from that data you'd be able to compare quality of life measures.

And I believe in NHIS and perhaps age (RQ) would have some of those metrics as well. So I think if you're able to create any kind - I think all of the data sources we mentioned on the population-based surveys have some kind of cancer survivor or not kind of variable and then might have some of those other questions. So I think that's something you could certainly explore with several of those data sources.

(Shawnda Schroeder): Thank you - and I'll ask one last time as we have about one minute left. Are there any other calls on the line?

Coordinator: There are still no questions in queue at this time.

(Shawnda Schroeder): Great - but then I'm going to say thank you to all of those who participated today. If you come up with other questions or comments following today's webinar, please use the contact information that's on the screen right now to contact any of our three presenters. And if you would like the slides from today's webinar, we will be posting those today on the Rural Health Research Gateway. And I'm going to share that with you now. But also keep in mind that if you'd like to sign up for our alerts you'll be notified as soon as the archive of today's webinar is shared which will include the transcript and the recording.

(Shawnda Schroeder): Thank you everyone for joining us today. Again, find the information at the link in the Chatbox. And if you should have any other questions about Gateway, you can contact me, and on the presentation you can contact our three presenters. So thank you again for sharing with us.

Dr. (Peiyin Hung): Thank you.

Dr. Jan Eberth: Thank you.

Coordinator: That concludes today's conference. You may disconnect at this time, and thank you for joining.

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