

Rural Cancer: Data, Disparities, and Determination - Insights from the CDC MMWR Rural Health Series

Kristine Sande: I'm Kristine Sande. I'm the program director of the Rural Health Information Hub. I'd like to welcome you all to today's webinar on Rural Cancer, Data Disparities and Determination. We're excited to hear more about the insights from the CDC MMWR Rural Health Report and hear from others as well.

I'll quickly run through a few housekeeping items before we begin. We do hope to have time for your questions at the end of today's webinar. If you do have questions for our presenters, please submit those towards the end of the webinar using the Q&A section that will appear in the lower right hand corner of the screen following the presentation.

We have provided a PDF copy of the presentation on the RHHub website. That's accessible through the URL that's on your screen or by going to the RHHub webinar page, which is www.ruralhealthinfo.org/webinars and then clicking into today's presentation.

Just a reminder that if you do decide to go download those slides during the webinar, that you shouldn't close the webinar window or you'd have to log back into the event. If anyone is experiencing technical issues, please call WebEx support at 866-229-3239.

We have a great slate of speakers for you today. We're delighted to have the HRSA Administrator, Doctor George Sigounas here to kick off the webinar for us. Doctor Sigounas became the Administrator for the US Department of Health and Human Services Health Resources and Services Administration, or HRSA on May 1, 2017. Before coming to HRSA, Doctor Sigounas spend 23 years as a Professor of Medicine at the East Carolina University's Brody School of Medicine in Greenville, North Carolina. That university focuses on primary care and rural medicine.

At the Brody School of Medicine, Doctor Sigounas directed the cellular therapies unit for the bone marrow transplantation programs, conducted clinical trials, prepared patient treatment protocols and preformed fiscal management. For more than 30 years, he trained a broad spectrum of students, including graduates, medical students, residents and fellows.

Next we'll hear from Jane Henley. Ms. Henley is an Epidemiologist in the Cancer Surveillance Branch at the Division of Cancer Prevention and Control, the National Center for Chronic Disease Prevention and Health Promotion at the Center for Disease Control and Prevention. She uses data from CDC's national program of cancer registries and other surveillance data to monitor cancers linked to modifiable risk factors, including tobacco use, alcohol use, physical activity and obesity. She has contributed to more than 80 journal articles and book chapters, including publications about cancer surveillance, tobacco related cancers, pharmacoepidemiology and socioeconomic status and health.

Our next speaker will be Doctor Robert Croyle, the Director of the Division of Cancer Control and Population Sciences at the National Cancer Institute or NCI. That's a position that he has held since 2003. In this role, he's responsible for overseeing a research portfolio and operating budget of nearly half a billion dollars and serves on NCI's Scientific Program Leaders Committee. As a Division, DCCPS covers a wide range of scientific domains and disciplines, including epidemiology, behavioral science, surveillance, cancer survivorship and health services research.

Finally, we'll hear from Doctor Jane Bolin who is a Professor in the Department of Health Policy and Management at the Texas A&M School of Health of Public Health. She's the Director of the Southwest Rural Health Research Center, a nationally funded center established more than a decade ago to address the needs of rural and underserved populations across Texas and the nation. Doctor Bolin is also a co-PI on three current cancer prevention and research Institute of Texas grants that focus on the needs of rural and underserved populations while training family medicine residents, nurse practitioners, public health students and CHWs in prevention, screening and education of colorectal, breast and cervical cancers.

At the very end of the webinar we'll also hear briefly from Paul Moore from the Federal Office of Rural Health Policy. At this time, I'll turn it over to Doctor Sigounas.

George Sigounas:

Thank you, Kristine and thank you all of you for joining us for the set webinar in the insights for the CDC Morbidity and Mortality Weekly Report, Rural Health Series.

As Administrator of the Health Resources and Service Administration, I value collaboration, both within the agency and externally. The ongoing partnership between the Centers for Disease Control and Prevention and HRSA's Federal Office of Rural Health Policy around the MMWR Rural Health Series, which brings visibility to important rural health topics such as cancer disparities, is one example of the collaboration that allow us to improve the health of our most vulnerable populations.

Close to 59 million people live in rural areas across the United States. This is about 19% of the population. We have good evidence that there are rural/urban disparities in both cancer incidence and mortality. These disparities exist across the entire cancer control continuum, including prevention and behavioral risk factors, detection, diagnosis, treatment and survivorship.

Our presenters today will walk you through the data behind these disparities and discuss some of the factors that are leading to the differences in cancer incidence and mortality between rural and urban residents. They will also discuss how to better use research and evidence to play a larger role in cancer control in rural communities. Finally, they will share with you an example of a rural specific cancer screening and education program to show that addressing

these disparities in rural communities, though difficult, is not an impossible task. [inaudible 00:07:26] myself, I am happy to see that we are collectively using and evidence based study to inform our work to address these disparities in cancer outcomes.

I would like to thank our colleagues at CDC and NCI and our partners at Texas A&M for conducting research that brings to focus the rural disparities in cancer incidence and mortality and for continuing the vital cancer control efforts in rural communities across the United States.

Now I will turn it over to our first presenter, Ms. Jane Henley.

Jane Henley:

Thank you so, much. This is Jane Henley. It's a pleasure to be here today to tell you more about the report we published recently about Cancer Incidence Mortality in Nonmetropolitan and Metropolitan Counties.

First, a spoiler alert. I know this isn't Game of Thrones. I'm going to begin with our conclusion. We found that people in rural America get cancer less often, but die from it at higher rates. During the webinar today, we'll talk about why this is and what can be done to level the playing field.

I'll tell you some more about the details of our study. We published an MMWR surveillance summary in early July as part of CDC's year long series on rural health. Authors included Bob Anderson from the National Center for Health Statistics and Cheryl Thomas, Greta Massetti, Brandy Peaker, and Lisa Richardson from CDC's Division of Cancer Prevention and Control.

We examined rates and trends of new cancers and deaths using US Cancer registry and mortality data. We used cancer instance data from CDC's National Program of Cancer Registries and the National Cancer Institute's SEER Program. Together these programs provide incidence for the entire United States. We used mortality data from CDC's National Center for Health Statistics National Vital Statistics System.

We examined rates for the most recent data available which was through 2013 for incidence and 2015 for deaths. We looked at trends over a 10 year period using average annual percentage change and rates. We used joint point regression, which allowed different slopes for two different time periods.

We broke the data down by characteristics that might display disparities such as age, sex, race and ethnicity, US Census region and cancer site. We classify counties as nonmetropolitan and metropolitan using the Rural-Urban Continuum Codes from the USDA Economic Research Service. This classifies metropolitan counties by population size and nonmetropolitan counties by degree of urbanization and adjacency to a metropolitan area.

This map shows the county classifications. Metropolitan areas are darker green, while nonmetropolitan counties, including small towns and rural areas are red, orange, yellow and light green. In our analysis, we didn't look at individual counties, but at groups of counties.

I'll jump right into the results here. I'll be showing several graphs like this one. I'll take some time to get you oriented. Across the bottom, we have year of diagnosis or year of death and along the y-axis we have rates, either the number of cases or deaths per 100 thousand people. The solid line depicts rates in nonmetropolitan counties and the dash line depicts rates in metropolitan counties. The percent change is given in the inset. This graph is for all cancers combined, the incidence of all cancers combined. We found that people who lived in rural areas had slightly lower incidence than people in metropolitan areas and that these rates would go down at about the same pace, about one percent per year. We found that men in rural areas had lower cancer incidence than men in metropolitan areas, as did women, people 45 or older, non-Hispanic whites, non-Hispanic blacks and Hispanics. We didn't find differences by counting among Asians or Pacific Islanders, but American Indians and Alaska Natives in rural counties had higher incidence rates than those in metropolitan counties. This group actually had the highest incidence rate.

We see a slightly different pattern for deaths. People who lived in rural areas had higher death rates in cancer than people in metropolitan areas. These rates would go down slower. The differences in death rates between rural and metropolitan areas is getting worse over time. We found that men in rural areas had higher cancer death rates than men in metropolitan areas as did women, people 20 or older, non-Hispanic whites, non-Hispanic blacks, and American Indians, and Alaska Natives.

I'll switch now to talk about specific cancers. Here we have lung cancer with incidence on the left and death on the right. For cancers that have recommended screening tests, which include lung, breast, cervix, and colon and rectum, we include lines for cancer diagnosed at a late stage. The dotted line is for nonmetropolitan counties and the dash-dot-dash line is for metropolitan counties. Based on this, people in rural counties had higher incidence and death rates than people in metropolitan counties for cancers related to smoking such as lung and laryngeal cancer. These rates decreased more slowly than in metropolitan counties, increasing existing disparities between rural and metropolitan counties.

We know from other studies, including the National Health Interview Survey that compared with metropolitan areas, residents of rural areas have a higher smoking prevalence, start smoking at a younger age, smoke more heavily, use smokeless tobacco more frequently and are more likely to be exposed to secondhand smoke. They also have fewer quit programs.

Next we have colorectal cancer. We see that people in rural counties have higher incidence of colorectal cancer and that the gap is widening over time. For

mortality, we see even greater differences. Colorectal cancer's linked with many modifiable risk factors such as smoking, being overweight or obese and not getting that physical activity, which are all higher among adults who live in rural areas. Also, colorectal cancer's cancer screening rates are lower in rural counties. We know that these tests can detect precancerous lesions so that they can be removed before they turn into cancer, as well as detecting cancer at an early stage. Thus, these tests can prevent both new cases and cancer deaths.

Breast cancer is one of the most common cancers among women. We found that women in rural counties had lower incidence rates for breast cancer than women in metropolitan counties and these rates were stable over time in both areas. The death rates for breast cancer are similar in rural and metropolitan areas, but decreased more slowly in rural counties than in metropolitan counties.

Prostate cancer is another common cancer among men. Compared with metropolitan counties, men in rural counties had lower incidence rates and slightly higher death rates from prostate cancer. These differences persisted over time.

There are several Healthy People 2020 objectives for cancer mortality. In our analysis, many of these objectives were met in metropolitan counties while only one objective for prostate cancer was met in rural counties. These disparities indicate that not all persons are benefiting equally from initiatives to achieve Healthy People 2020 objectives and that more work is needed.

Nonmetropolitan counties had a higher incidence and death rates for cancers related to Human Papilloma Virus, the HPV virus, that lower incidence and death rates for cancers related to other infectious agents such as liver cancer, which can be caused by hepatitis B virus and hepatitis C virus and stomach cancer, which can be caused by *Helicobacter pylori* bacteria.

We found that while cervical cancer incidence rates decreased at the same rates in rural and metropolitan areas, cervical cancer death rates decreased slightly in metropolitan counties but were stable in rural counties. From the graph, it appears that cervical cancer death rates among women for all counties decreased and then increased again. These slips were not specifically significant. The rate in 2015 was lower than the rate in 2016. This suggested upward trend is troubling however and we will keep an eye on it to see if it continues. Cervical cancer is one of the most preventable cancers. No woman should die from it.

I'll turn now to why there are differences. From other studies, we know that the prevalence of smoking and smokeless tobacco use and exposure to secondhand smoke are higher in rural areas, that a higher percentage of people tend to be overweight or obese, but in lower proportion get enough physical activity and that the rates of colorectal and cervical cancer screening and HPV vaccination are lower. All these factors increase the risk of cancer.

It's important to note that there are characteristics for a broad group, rural counties, and that there may be differences by region or other subgroup. Interestingly in our analysis, we found that incidence rates for cancers that don't have as many modifiable risk factors, like brain cancer and leukemia were similar in rural and metropolitan counties. This gives hope that reducing exposures to risk factors can promote health equity.

We also know that there are differences that affect diagnostic testing, follow up and treatment, which may impact mortality. People in rural areas have to travel longer distances to get care, so they may delay or skip getting the care that they need. There may be fewer resources such as staff and equipment available. People may not have the same access to clinical trials which provide the most state of the art treatments.

Unfortunately, studies have shown time after time that where people live in the country can effect what diseases they get, how they die and when they die. Geography should not be a risk factor. It alone cannot predict cancer risk, but it can impact prevention, diagnosis and treatment opportunities. Fortunately, if we are thoughtful about our public health efforts and interventions, we can close the growing gap between rural and urban Americans.

What can be done? In my segment, I'll talk about some actions that health care providers in rural areas can take to improve healthy behaviors that reduce cancer risk, increase use of vaccinations and cancer screening tests that prevent cancer or detect it early and participate in state-level comprehensive cancer control coalitions.

Tobacco use is still the most preventable cause of cancer and cancer death. There are clinical and community interventions that health care providers can implement that prevent tobacco initiation, promote tobacco cessation and eliminate secondhand smoke exposure. Health care providers can encourage patients to limit excessive exposure to ultraviolet rays from the sun and tanning beds and encourage physical activity and healthy eating to prevent and reduce obesity. They can encourage the patients who choose to drink to follow the dietary guidelines for Americans and screen their patients for alcohol misuse and provide or refer the treatment as needed.

The icons at the bottom highlight some of the activities at CDC. For example, through the National Tobacco Control Program, CDC promotes ongoing work such as improving availability and accessibility to tobacco cessation services in order to reduce tobacco use and tobacco related disparities.

CDC monitors the prevalence of obesity and physical activity and supports programs to promote healthy living in workplaces, schools and communities.

We know that patients are more likely to do things that their doctor recommends. Health care providers can recommend that patients receive

vaccination against cancer related infectious diseases such as HPV and hepatitis B virus. They can recommend that patients get appropriate cancer screening tests such as Pap tests, mammograms, and colonoscopy or FIT tests and low dose CT scans for lung cancer screening.

These icons show some of the programs that CDC supports like the Breast and Cervical Cancer Early Detection Program that addresses disparities in screening and follow up care by directly providing services and through system changes, such as providing assessment and feedback reports and clinical practice performance.

CDC also provides resources just for health care providers such as the You Are the Key to Cancer Prevention Campaign for HPV vaccination, which includes vaccine schedules, fact sheets for parents, see me activities and much more.

Much of the good work for cancer prevention and control happens at the state and local levels. CDC funds programs in all 50 states, the District of Columbia, eight tribes and tribal organizations and seven US territories in Pacific Island jurisdictions.

The partnering with these programs, health care providers can better assist rural communities. These programs encourage people to make healthy choices by making the healthy choice the easy choice. Educate people about cancer screening tests so that people get the right test at the right time. Increase access to good cancer care and reduce health disparities. For example, through patient advocacy. Make sure people who survive cancer live well.

To summarize, we found that people in rural America die from cancer at disproportionately high rates and that this gap is growing. We have to approach this problem from all sides so that everyone, regardless of where they live can benefit from activities proven to promote healthy behaviors, increase screening and vaccination rates and receive timely and appropriate cancer care.

Thank you, this concludes my segment. Our next speakers will tell you more about what is happening at NCI and in their communities. Thank you once again.

Robert Croyle:

Thanks, everyone for joining the call. This is Bob Croyle from National Cancer Institute. Glad to join everybody. First of all, let me give a shout out to all our colleagues in Texas and Louisiana who are dealing with the floods, which obviously also has tremendous health care implications.

I'm going to talk about Rural Cancer Control from the perspective of NCI as a research agency. What I'd like to do is tell you a little bit about an initiative that's still in the developmental phase, our Rural Cancer Control Initiative, that I know some of you have heard about and participated in meetings to discuss. This really got kicked off last year. I want to also really recognize our colleagues

at HRSA who've really been our rural health navigators in discussing a lot of these issues.

Last year I posted a blog on the NCI website talking about rural cancer control issues. It really stimulated a lot of response and discussion. It kind of really hit a note in a sense that although many of you have worked in rural health for many, many years, the cancer institute itself and in some cases, some of our cancer research centers haven't been as engaged in rural health issues as they might have. We've been looking at this for the past year, reviewing the researching the research evidence. You just heard a good review of the surveillance data. What we've been doing in this year is engaging on a number of planning activities. If you're interested in a little bit more of a thorough update on our activities over the past year, you can go to the link there on the slide to our website.

One of the two areas that is really a focus in this rural health area is American Indian and Alaskan Native populations, which, again, many of those who are on the call have worked with as well. A lot of this is driven by the evidence in terms of access to cancer centers, the cancer centers that NCI funds. We know that in terms of distance to care, which is a huge barrier, that rural populations and Alaskan Indian, American Native populations are the ones who often have the greatest distance to our NCI supported comprehensive cancer centers.

We've had a workshop on American Indian populations that was hosted by the Stephenson Cancer Center last year at Oklahoma City, where we brought a lot of stakeholders together and several of the other agencies on this call were represented as well. The Rural Cancer Control Workshop that hosted by the University of Memphis in May. This then has led into a number of other spinoff planning activities.

I'll talk a little bit about some of the scientific challenges from a research perspective. Give you a sense of what's in our funded portfolio and then give you a couple of examples of NCI supported services that are especially relevant to rural populations and talk about our next steps.

Obviously, from a research perspective, rural is incredibly broad, complex issue. For many of the studies that we fund, and the other federal agencies fund, one of the challenges are all the various different definitions that people use of what is rural. If you look at, just for example among our two agencies, the CDC report on incidence and mortality and NCI one that published in Cancer Epidemiology Biomarkers and Prevention, there are a number of different ways to define and categorize rural. Many of you who work in the field are familiar with it, but this is one of the issues that we want to discuss further in the coming year with a lot of stakeholders is this issue of rural definitions.

There are many examples. This one here, Alaska versus rural Mississippi, obviously so many differences even though they might both be categorized as rural. One of the challenges in terms of data collection at the local, public health level, as many of you know, is the grain size of our counties varies

tremendously, the size of counties. For those of you who are relying on county level data, this is a real challenge in terms of how granular the data are that you can have in it, especially when populations become diverse and then we have to worry about issues of confidentiality and identifiability that also kind of constrains our ability, oftentimes to look at very small populations or small numbers of cases of cancer in a rural area.

The structural areas are what have been touched on, but the point I want to make here is that these issues also touch upon and become barriers to conducting research on cancer in rural areas as well. All the same issues that many of you heard about before that are barriers to practice oftentimes end up being barriers to conducting research studies. That's one of the reasons, we think, that our research portfolio in rural populations is smaller than what we would like it to be.

Access to care, of course, limited access to clinical trials which I'll come back to in a moment. Lower physician density is particularly, if we're expecting that clinical settings are going to be settings for cancer research. The distance to facilities and transportation. Fortunately we have a lot of nonprofit organizations like the American Cancer Society that have stepped up in that area. Poor telecomm in infrastructure is something we've been discussing with other agencies as well. This has been discussed by the President's Cancer Panel. We are on ongoing discussions with folks who are involved with the Federal Communications Commission and also broadband infrastructure, which, again, is relevant to care but also essential for cancer research.

The other issue, also from a research perspective is that rural versus the urban population, this factor, this variable is confounded and correlated with many other variables. Trying to disentangle what is due to a rural/urban difference versus socioeconomic status, educational level, access to care. It becomes an incredibly complex analytic problem. One of the things with the NCI I want to do in the common years is we want to support more research that tries to really disentangle these factors so that we have more and better informed interventions.

Cultural factors are significant as too and we can't underestimate them. Trust in institutions, perceptions of medical providers, people's prior experience with government sponsored programs, non-traditional comorbidities that are less familiar to the cancer control community like opioid drug abuse. We have a lot of cross talk now across the agencies to try to integrate these efforts. Cancer related fatalism. This is something we see in several regions of the country like Appalachia where people presume that cancer is less preventable and less treatable than it actually is.

A lot of these challenges from a research perspective have to do with dealing with small data and small sample sizes. When the size dispersion or accessibility to population make it difficult, this impairs not only access issues but also getting the numbers you need to answer definitive questions about cancer.

Examples are here, they're many including rural populations, particularly in the less populated areas. This small data problem is really a challenge for designing powerful studies that we can fund and that pass through peer review that answer these critical questions. We need, as a result, we're going to be cosponsoring a workshop with the National Academies of Science and Education Medicine, Engineering and Medicine. Graham Colditz has agreed to chair this group. This is bringing together a lot of leading scientists from a variety of fields that are going to take on this issue of what are the methodological issues in conducting research in small populations and how can they be overcome. This is an open meeting. You're welcome to attend at the end of November.

NCI's role as a research agency is really to compliment the efforts of HRSA, CDC and many others who are engaged in both research and care delivery. I wanted to emphasize that one of the things that we look forward to as outlined through this slide, and I won't itemize all of these, is that we have the opportunity, we feel, to leverage the large national research infrastructure that NCI supports. Our clinical trials programs, our community trails programs and our cancer centers, and leverage those much more substantially to answer rural health research questions. That's what we're looking for to do.

I want to give you some examples here. You can refer to these later, the kinds of research grants that we do fund. I want to encourage investigators who are listening in to submit applications to NCI. These are some other examples of partnership grants looking at rural populations that are funded through our Center for Reducing Health Disparities. Then also we have a large national network with over 100 clinical sites supporting clinical trials work that is improving the access of rural populations to NCI funded clinical trials. That's our National Community Oncology Research Program. You can find more information on the web about that.

This gives you a sense of the breadth of the research centers involved in our clinical trials program. This does not show the nearly one thousand clinical practices that participate in our trials.

We've also supported work with our cancer centers to understand their catchment areas, the communities around them better. This is what we call our cancer center catchment areas. We are going to be increasing the focus of attention on understanding rural populations served by those centers.

I mentioned the President's Cancer Panel. This is a report that's online. It really focused a lot of recommendations on improving access to information and communication infrastructure. That's we've engaged in discussions with the FCC about broadband infrastructure.

Finally I wanted to highlight some of the research services that we support, that rural populations, your constituencies have direct access too. The National Hotline 1-800-4CANCER where you can talk to a person, get information or communicate through text or live help. That's a research that I really encourage

you to use. Also, NCI supports the HHAS central web portal for smoking cessations called smokefree.gov. It's loaded with resources that I don't have time to run through. Of course, the national network at Quit Lines is again an accessible and essential resource given the tobacco use problem in rural areas.

Finally, I want to give a heads up to save the date. May of next year we'll be hosting our first National Cancer Control Conference focused on rural populations here at the NIH. Robin Vanderpool of the University of Kentucky, is the program chair, and encourage all of you to, if you're interested, to register and attend. Thanks very much.

Kristine Sande: Great. Thanks. Now we'll hear from Jane Bolin. Jane?

Jane Bolin: I want to give a shout out to our CPRIT colleagues, Doctor Becky Garcia and Ramona Magid and also say thank you to all of you who have participated with us and talk a little bit about our Cancer Prevention and Research Institute Funded Programs here at Texas A&M University.

We established the Texas C-STEP program back in 2011 with a grant that we received to conduct colorectal cancer, screening training, education and prevention in the context of a family medicine residency training program here at Texas A&M University College of Medicine and the Health Science Center.

Subsequently, we've also received a breast and cervical cancer screening grant and had the colorectal cancer screening and training grant renewed again for another three years. Then, finally, we received a community health worker training and dissemination program that helps train community health workers in the substance and the how to of training and educating community health workers to work alongside physicians, nurses and health professionals in getting the word out on cancer and education.

Our grants have been rural focused, rural and underserved. Again, in the context of the family medicine residency at Texas A&M University. We have co-investigators that are also included, Doctor Anna Lichorad, Doctor Robert Pope and Doctor Cynthia Weston, as well as those of us here at Texas A&M University.

Texas C-STEP again is a rural focused, training, education, screening, prevention program focused on rural and underserved populations. In the context of providing screening and prevention services for rural and underserved populations, we at the same time are training family medicine residence, BSN, nurses, family nurse practitioners, graduate students in public health, and community health workers. You can find our Texas C-STEP online.

Our goals are to increase access to evidence-based preventative cancer screenings for underserved and safety-net patients through the Cancer Prevention Research Institute of Texas Program, and to increase the number of

providers, trained to perform cancer screening and diagnostic procedures. To utilize community health workers, to provide culturally sensitive education, referrals and clinical services and to train the next generation of physicians, nurses, CHWs in colorectal, breast and cervical cancer prevention, screening and education.

Our service area's currently is a 17-county region in Central Texas. 12 of these counties are considered rural.

Focusing first on Texas breast cancer incidence and mortality by county in our service area, four of 17 C-STEP target counties have incidence rates that are higher than the state average for breast cancer, but you'll see, and this is consistent with Jane Henley's presentation, the mortality rates are much higher for these counties and many of these counties, again, are rural. 12 of the 17 C-STEP target counties have mortality rates that are higher than the state average.

Likewise, concerning colorectal cancer incidence and mortality by cancer, 11 of our 17 C-STEP target counties have incidence rates that are higher than the state average and 9 of the 17 C-STEP target counties have mortality rates higher. There are disparities as it concerns these types of cancers that we're focused on.

The results for our C-STEP colonoscopy services to date as of May of 2017, are close to two thousand total colonoscopy screenings provided to 1,870 people with 1,455 of those funded by CPRIT. These are the actual colonoscopy procedures to individuals that have perhaps never had a colorectal cancer screening.

Many of those had to qualify in terms of being Medicaid eligible under the State of Texas definitions. 33% of those colonoscopies had abnormal pathologies. Close to 25% of all the colonoscopies performed revealed cancer precursors. 17 people were diagnosed with colorectal cancers through this grant.

In terms of the demographics of our 1,870 individuals who have been provided with colonoscopies, 20% are African American, 34% are Caucasian or White, and 42% are Hispanic or Latino. Again, these are training family residents in the performance of the actual endoscopy or colonoscopy procedure itself there at the family medicine residency.

In terms of monitoring our benchmarks, and we're in the process of pulling all of our data for the second grant, but in the first round, in the first three years, we performed 1,100 colonoscopies. The benchmarks are, did they attain the cecum? That is where the small bowel and the large bowel meet. We met that benchmark 96% of the time under the ASGE which is the American Society of Gastroenterologists, they expect that the cecum is attained 95% or higher in terms of the performance by gastroenterologists over time.

The overall expected adenoma detection rate is greater than 20% of the time. Our C-STEP program met that 27% of the time. Our group adenoma detection rate among females was 26% and again, the benchmark is 15%. Adenoma detection rate among males should be at 25% or higher. We met that in 38% of the time.

The mean total withdrawal time of the scope, back out through the large intestine should take at least 6 minutes. Our, in terms of educating our residents, they are taking at least 18 minutes. They are three times the time in terms of inspecting a large bowel. Then, we did have one adverse event in terms of a perforation. They expect to see that 1 in one thousand times. Full disclosure here, there was an untoward event in one of those, out of 1,100 colonoscopies performed.

In terms of our breast and cervical cancer screening grant, the grant itself provides mammograms, clinical breast exams, advanced diagnostics when warranted, including ultrasounds and breast biopsies.

In terms of our cervical cancer screenings, we provide HPV vaccines, Pap tests, advanced diagnostics when warranted, including colposcopies and LEEPs which stands for Loop Electrosurgical Excision Procedures for these women. Again, all these are in the context of the residency as well as the training of family nurse practitioners and public health students and community health workers.

To date, actually this was at the end of May, through the grant, we've performed 373 clinical breast exams, close to a thousand mammograms, these are free mammograms. Those are free breast exams. Breast ultrasounds were warranted in 203 of those cases. Breast biopsies were warranted in 40 of those cases. Pap tests performed through the grant totaled 455, of those 211 women received colposcopies and 49 women received a LEEP or an additional diagnostic exam to investigate possible adverse findings.

In terms of the education and outreach that is made possible through these CPRIT grants, we've had 908 health professionals that have received direct training and that has also including simulation training. These include family medicine residents, nurse practitioners, public health students and community health workers that are all training collaboratively.

We have also received a number of referrals from our 17-county region. These occur through community health events, self referrals or patients that walk into the family medicine residency clinic and physician referrals. Our community health workers are an integral part of our program also known as promotoras and they provide culturally appropriate, bilingual education and navigation. They literally, in what I, whether in Spanish or English, providing instructions for the colonoscopy and how to prep appropriately and helping to make arrangements for travel for these individuals. Studies have shown that the integration of community health workers in the cancer screening programs can

increase cancer knowledge, screening rates, screening guidelines adherence, referrals and also increase the volume of services that they're able to perform.

Here's a picture of many of our community health workers standing in front of the Super Colon at a health fair. We were able to rent this large walkthrough model where a person can see polyps hanging down and other things that they may not have known what something might look like inside the colon.

We're very proud of what the CHWs are doing. They're literally at food pantries, back to school events, backpack giveaways, meeting parents, meeting mothers, meeting fathers, and providing much needed educational services for our largely rural counties. We, at the same time have been able to conduct a short survey when either a woman or man comes in for services. You'll see here that the cost of services has been by far the greatest barrier to receiving a colonoscopy, but for over 50% there is a fear of finding cancer as well as anxiety associated with that procedure. The use of a CHW does help alleviate a lot of the anxiety.

The barriers to receiving a Pap test, again, cost is the number one largest barrier for over 60% of the women and likewise fear of finding cancer is right up there. By having culturally appropriate education and knowledge passed along through community health workers where we're able to help alleviate that.

Some interesting quotes that we've been able to gather through our C-STEP program include the following. "I had colon cancer that was found and removed at an early stage about 15 years ago. I'm overdue but I lost my job and health insurance so I've not been able to go back for a repeat colonoscopy and thank god that I came in here today." Likewise, our CHWs really try to be present at health fairs, back to school events and one quote that we had was that this service is great. That an individual's wife had died of colon cancer. What we're doing means a lot. Being out there in the community means a lot to our population, especially rural populations in Texas and we're very grateful for the role of the Cancer Prevention Research Institute of Texas and making these services available to individuals who otherwise couldn't have afforded them. It has been a success, especially for Texas A&M and the family medicine residency and the school of public health.

We now have over 80 family medicine physicians out there in largely rural areas that know to perform colonoscopies, guided ultrasounds and colposcopies. We have hundreds, literally hundreds of CHWs that have been trained as well as family nurse practitioners. We are very grateful for the services that's been provided by CPRIT as well as through the program.

If you have any questions about our programs, I'm very happy to answer any questions that you may have. Just email me here as shown and we'll do our best to try to give you our model and to try to help you duplicate that. Thank you very much.

Paul Moore: This is Paul Moore. Jane thank you. I want to thank all of our presenters today. I want to thank all of you who have taken time out of your day to join us to discuss this issue of rural cancer control.

We will have a moment for questions and answers here in just a moment. I just want to acknowledge something with you based on what we've heard today. That's just that whether it's urban or rural, cancer is always very personal. This past spring, a friend and colleague living in Washington DC shared with me that her three and a half year old son had been diagnosed with veda cell acute lymphoblastic leukemia and that following a few weeks in the hospital, the little fella is now going through a three plus year treatment plan.

In my own situation, it's been 16 months now since the passing of my mother only three weeks after receiving a diagnosis of angioimmunoblastic T-cell lymphoma. The point I'm making is that cancer is always personal.

A few years back, my wife had the privilege of driving her uncle a 100 mile round trip, five days a week for eight weeks to receive radiation treatments for his prostate cancer. Cancer is also always challenging, but often more challenging if you live in rural America. What's shown us today is that we have an opportunity before us to make it less challenging in rural areas. Let us take what we've learned and what we will continue to learn and determine to do just that.

Kristine, let me hand it back to you for the question and answer time and then also for some final information today. Thank you so much.

Kristine Sande: Thanks, Paul. At this time we will go ahead and open the webinar up for questions. You'll see a Q&A box on the lower right hand corner of your screen. You can enter your questions there.

As you enter those, I do ask that you select the option to send the question to all the panelists, otherwise your question might get missed.

It looks like there's a question already. It says, "Congratulations for C-STEP. It looks like an amazing program. Are you thinking of scaling up to other places in the United States or maybe other countries?"

Jane Bolin: Thank you very much for that compliment. We would like to scale up and/or take it to other areas of Texas. The answer is yes. We would like to take the model that we've developed and take it out more broadly first to other regions of Texas.

Kristine Sande: Okay, great. Thanks Jane. It sounds like a great program. Let's see. Here's another question for you. If I can find it. My screen shifted. Please bear with me. Are the community health workers paid or are they volunteers? If this is a grant

driven at this time, or if this grant driven at this time, how do you see it being sustainable if funding is reduced or eliminated?

Jane Bolin: Great question. Currently, the grant pays for training of community health workers. Some of our community health workers, once they're trained and certified in Texas, and again, Texas has a certification program for CHWs, but once they achieve that, some are paid on our grant, but we also have several that are volunteers. They dedicate their weekend in order to keep their certification current, they dedicate their weekend or other evenings to activities that we have. We have several that we can call on. Some of our CHWs help us, especially bilingual with outreach activities once or twice a month. It is a combination of both.

Kristine Sande: Great, thank you. Next question could be for any of our panelists. The question is, "Is transportation a significant barrier in rural areas? Is this a significant factor in lower screening rates in rural areas?" Anyone want to answer that?

Jane Bolin: This is Jane Bolin, I will certainly hop in on this one. Yes, it is. In some regions of our service area, we have some very low income individuals. There may be one vehicle per family. The breadwinner may use that vehicle during the day to go to their job leaving anyone at home or if they're an elderly couple, possibly not even have any vehicles. Finding transportation into the area of their county perhaps or into a provider that will provide these services can be a challenge. Many of these counties have developed a van program so that on certain days individuals can take a van into the population center, in this case, College Station Bryan. They know what days they can go in. We help arrange that.

Robert Croyle: This is Bob Croyle. I was going to mention there's kind of an oddity in the research literature on this issue of distance because you actually find when you look at patients at cancer treatment centers who have traveled very long distances, they actually do significantly better. Of course, what that is accounted for by is that a very small self selected group who have the means or the capacity to travel that distance and those tend to be comparatively healthier, wealthier or have other means of access. It's really an illustration of one of the complexities that arises in interpreting these cancer outcomes patterns among different populations.

Kristine Sande: Interesting. Let's see. The next question is also for Jane. The person writes, "I just wanted to clarify. Who was trained in Texas in the program to perform the screening procedure among those group? Was in NPs, family medicine residents, et cetera?"

Jane Bolin: Great question. On the colorectal cancer screening grants, the MD/DOs are trained in the colonoscopy procedures. At the same time we're training community health workers to assist and then on the breast and cervical cancer grants we are training family medicine residents as well as family nurse practitioners and community health workers.

Our public health students are all likewise being trained in data gathering, intake, education. It's a combination of various trainings. The actual clinical training is as I indicated. The family medicine doctors are trained in the colonoscopy performance and the breast and cervical cancer whereas the nurse practitioners and nursing students and MDs/DOs are all trained in the breast and cervical cancer clinical procedures.

Kristine Sande: All right. Thank you. Another question for you. Did you use certified health education specialists to work in conjunction with the CHWs or manage these folks? Do you see value in using CHES individuals as part of your team?

Jane Bolin: Did we use certified health education specialists?

Kristine Sande: Right.

Jane Bolin: To my knowledge, yes. Some of the instructor level CHW instructors are also CHES specialists. The CHW certification, there's a basic certification to become CHW as well as an instructor level which is additional training. They may have both as CHW instructor level as well as a CHES. I do see value for CHES specialists, but we may not always be able to get that.

Kristine Sande: All right. Next question is, "I agree that geography should not be a risk factor, but in some cases I think it's impossible to avoid. What do you think about telemedicine and do you have experience with using telemedicine for this?" Anyone have thoughts on telemedicine for cancer screenings or treatments.

Jane Henley: Hi, this is Jane Henley. I agree that telemedicine would be a great addition to preventative services and treatment. We're just starting to dip our toes into it. I'm not sure if you want to add on to that Bob?

Robert Croyle: Yeah, I think there's a good, sizeable, large literature on telemedicine. It's not as large in a cancer control domain as it is in other domains like mental health, behavioral health, et cetera. What we're hearing from a lot of the localities, in terms of barriers to telemedicine, continues to be broadband infrastructure.

A lot of you are familiar with a lot of different programs out there in terms of continuing education and the different models that have come out of New Mexico and elsewhere. The kind of access and coverage is really disrupted particularly when you get in remote areas. Hopefully we'll make some progress at the national level in terms of supporting broadband access, because I think that really will open up a lot of possibilities and use of what are some available and evidence based programs.

Kristine Sande: Great. Let's see. It looks like one last question that we'll have time for. Would you describe the successful P20 awards and the success in leading to larger awards for rural cancer disparities work?

Robert Croyle:

I think, in terms of the P20 planning grants, we have a partnership program run out of our Center for Reducing Cancer Health Disparities it's called CPCHE. These are Centers to Promote Cancer Health Equity. The notion is that we encourage institutions to come in as paired partners. A university partnered with a minority serving or underserved population institution. They come into those and then each one is awarded separately a grant to work together on training and research, develop a minority investigators as well.

Right now, there's not a large number that come in each round because there is a funded portfolio. There's a lot of mentoring that our program staff provided to these institutions who come in for the partnership programs. As I mentioned, some of them already are working rural populations. For example, Southern Illinois in the case of the Washington University Partnership, but this is just one of the several research funding mechanism programs across the NCI where we're looking in the future to grow the amount of activity and the scale of activity focused on rural populations.

Kristine Sande:

Great. Thanks so much. We're at the end of our time today. I will wrap up now. I apologize to anyone that we didn't get to your question. On behalf of the Rural Health Information Hub, I'd like to thank our speakers for the great information and the insights you shared today. I'll also thank you to all our participants for joining us. A survey will be emailed to you following today's webinar. We encourage you to complete the survey and provide us with feedback that we can use in hosting future webinars.

Please note that the survey that appears on the screen at the end of the webinar is a WebEx survey and that's not the survey from RHHub, which will be emailed to you. The slides used in today's webinar are currently available at www.ruralhealthinfo.org/webinars. In addition, a recording and transcript of today's webinar will be made available on the RHHub website. That will also be sent to you by email in the near future. That will allow you to listen again or share the presentation with your colleagues. Thanks so much for joining us today and have a great day.