Per Ostmo: For those of you who are not familiar with the Rural Health Research Gateway, Gateway is a Web site that provides easy and timely access to research and findings of the Federal Office of Rural Health Policy's-funded rural health research centers, which began in 1997.

The goal is to help move new research findings of these centers to various end users as quickly and efficiently as possible. This site can be used to find abstracts of both current and completed research projects, publications resulting from the projects, and information about the research centers themselves as well as individual researchers.

Following today's presentation the webinar will be posted on the Rural Health Research Gateway website. You can find Gateway at www. RuralHealthResearch.org. And you can join Gateway Alerts to receive periodic email updates when new publications become available, including the archive of today's webinar.

Also you can follow us on Twitter or like our page on Facebook to receive daily notifications on Rural Health Research. We have muted all lines, but I encourage you to use the Q&A chat box at the bottom of your screen to type any questions you may have for Dr. Jan Probst.

At the end of today's presentation, the HRSA operator will open up the meeting for questions, and those written in the chat box will be read if and when there are no more calls on hold on the line. If there are remaining questions in the chat box at the end of our meeting today, we will send out the responses with the archived webinar.

So thank you again for joining us today. I would now like to introduce our presenter. Dr. Probst is a distinguished Professor Emerita at the Arnold

School of Public Health in the University of South Carolina, with a research and policy focus on rural health and health disparities.

She was a founding faculty member of the Rural and Minority Health Research Center, formally the South Carolina Rural Health Research Center, which was established in 2000, and where she currently serves as a research faculty. Dr. Probst is a member of the National Rural Health Association Health Equity Council and serves on the Board of Directors at the South Carolina Office of Rural Health.

The National Rural Health Association has recognized her work with a Distinguished Researcher and Volunteer of the Year Awards. Dr. Probst completed her BA at Duke University, her MS at Purdue University, and her PhD at the University of South Carolina.

So, introducing Dr. Jan Probst. Thank you.

Dr. Jan Probst: That was exhausting. Thank you for letting me give this talk. I very much appreciate the fancy introduction. And I'm doing notice - calling attention to the fact that I actually changed the title. I started saying Understanding the Ground: Social Determinants of Health. But I decided that wasn't action oriented enough.

So I went to the format of saying Challenges and Opportunities because that's what I want us to think about what we're going to discuss today and present. And first, one thing that I could address the elephant in the room that I'm not really going to talk about, we all know this COVID thing is attacking rural America right now.

I’m not an infectious disease epidemiologist although I can do a good Fauci face plant, so I’m going to leave that topic for people who are better equipped to discuss it. I'm going to talk about the way rural America has been and the way it's likely to continue being after COVID.

And always one has an overview and if you're an academic you have to begin by defining our terms. So I'll talk about what we mean when we say rural and what we mean when we say social determinants. I will only briefly touch on rural disparities in health because we are all, if we are interested in participating in this lecture, very much familiar with those already.

I'll focus more on disparities in social determinants - what people bring to the healthcare encounter to start with. And I'll finally wrap up with shameless self-promotion, talking about planning a way forward and using some ongoing projects that we have in South Carolina, sponsored by our South Carolina Office of Rural Health as a model for what I think could be done in other states as well.

So with that, what does rural mean? Everyone here listening probably has their own definition of rural. Realistically though, all of the definitions combine at least two elements - rural areas have smaller populations than urban areas and greater distances. It is - when you look at how the Census Bureau defines urban, urban is defined by people being put together into an urban cluster of say 2500 people.

And then you can get clusters in less than 5,000 people or urban areas that go up to 50,000 people. So it's all about people being together. And in rural America, we may have the clusters, the little tiny towns and the small, I don't even want to call them cities, they are less than 50,000 people, big towns.

We have those and we have greater distances, pretty much an agreed upon metrics for rural. And when one talks about it in policy terms, analysts use one of these definitions. This map shows where rural America is if you look only at the county level, which - and a county is rural if it contains no lumps, no urban area with more - equal to or greater than 50,000 people.

But the problem is, look at the entire Southwest. The counties are so big that if you've got a city here all of your hinterlands on the other side is classified as urban even though any common-sense definitions say that it is not. And as has been noted, a lot of people are omitted when you use only county level definitions.

Why do we use them? Because there's somebody in charge of the county; there's somebody you can complain to. Because while census tract definitions are wonderful, as you can see in this map, you can see particularly in areas like California, Arizona, Nevada, that the urban areas and the rural areas are quite well distinguished.

But the problem is you need something that has people in charge, which is why we can very often, use our county definitions. And by the way, we will - for people who are listening who might be fellow researchers or you just want to figure out where did she get that stuff, at the bottom of my slides are citations.

In the note pages to the PowerPoint slides which will be made available to anyone who wants them, as soon as we're done here, there are citations for everything I say, plus a few random snarky comments.

This is my - this is the sad story that we're all familiar with - rural disparities in health and outcomes. And I can’t see my notes. Rural residents at every

age, whether you are looking at infants; whether you're looking at children; whether you're looking at working age adults which is what is displayed in this chart; or whether you're looking at older adults, at every level rural residents are more likely to die than their urban peers.

And I have a multitude of slides that I can send to anyone who is interested, that illustrates the fact that this has been going on for years. This is not a new thing. And the problem is it isn't getting any better, which is why we are - as I'll circle back to, which is why we have a look beyond the traditional how can we get more doctors, how can we approve all hospitals, if we're going to really address these disparities?

This is an example of healthcare infrastructure, our gaps. It is the only citation that I have here today that talks about the COVID crisis, because this is a map that was developed by the Kaiser Family Foundation, that shows a hospitals with - counties that have a hospital with an ICU bed versus counties that do not have an ICU bed.

And if you'll notice, the area in the middle of the country where you have the most rural counties, is also the place where you have either no ICU bed or no hospital. So we all know that we have mortality disparities; we all know that we have infrastructure disparities; let's start to see a little bit if we can, where - why is nothing there? Why aren't we doing better by rural America?

And this is a complicated story. Wait. I'm going to go back. So and where the complicated story goes is in the social determinants of health. Sorry. I'm - presenting in a basement room is getting tiring. I feel like Don Almer. Moving on.

What we want to talk about today are social determinants of health. And by social I don't mean that you're all going out and chitty chatting. I mean that they are things that people decide. There are things about your health that are genetic. January 31st of this year I had an aneurism explode in my head. I am a model of health and, you know, well insured and everything but somewhere there was a trap waiting for me that exploded. That would be biological.

I have a friend who just had a double mastectomy. If you have the BrCa you are vulnerable because of your genetics. But there are a lot of other elements of vulnerability. CDC defines the social determinants of health and I'll do the horrible thing of reading it, as the conditions in which people are born, grow, live, work, and age, which is a lot, a lot of things.

But the more important one - part of that definition of course, is the complex, interrelated social structures and economic systems, which is a lot to think about right now. But I think people have been thinking about this one a lot over the past couple of months, for a number of reasons that I'll go into later.

Then there's the World Health Organization definition which I like because I'm a bear of little brain and I can remember short things, which says the social, physical, and economic conditions that impact upon health. So that is what I want to talk about a little bit today, or am going to before, as part of our continuing work on our definitions, pick apart the words a little bit.

Social - I mean this is obvious. But society has created these conditions. And when I go into physical and economic and social determinants you will see that even the physical has a relationship to society. Because these are social things, they can be changed. They are not, you know, written in the heavens, they aren't subject to the laws of physics if you will.

I know this word is used a lot, determinants, so I hate it. I'm going to keep using it just because everyone talks about SDOH, the social determinants of health. But that makes it sound as though, ZIP code is destiny. To a certain extent it is. I'm not questioning that. But it's not the whole of destiny. And we can change destiny if we created it. These are influences, these are challenges. Let's find a better term.

Now for those of you who know me and have heard me talk before, I'm not really good at thinking in a straight line or talking in a straight line. And this story is not a linear story. When you start talking about social determinants of health, you've got a lot going. You've got distance which is geophysical; you've got history, which influences everything we do; we've got jobs; we've got benefits; we've got what our healthcare infrastructure is; we've got what our roads look like.

There's a whole - we've got broadband, which is another major issue that I won't talk about a lot too. I think that's discussed by other people a lot. And I looked at - and nearly all of these things are the result of human choices. And realistically, I think they all are, but I'm a scientist and scientists have to be well, discreet and I'll say nearly all.

What we're looking at is this mess of things that we call social determinants, I don't love saying that, it's this web of things that we are calling social determinants are choices that people have made for a variety of reasons. So again, we're going to use the World Health Organization definition of social determinants of health and look at how these play out in rural America today.

We're the good ones. As most of us know, unless you happen to be down on your pig farm, physical, air quality is generally better in rural than in urban areas, as ranked by the quantity of hazardous pollutants in the air. And this is

a quality index created by the Environmental Protection Agency, basically using data from 2000 to 2005.

So it's a little dated, but probably the overall parameters are still the same, unless you are looking at point sources of pollution. This may affect the specifics of rural areas. In general, the urban which are a really bad, like dark color, these are ones that have the highest in the number of pollutants in the air, whereas rural counties are generally significantly better.

So we start off if you will, with a health advantage of rural residents. They have better physical air quality. I want to look next at another element of rural life. Many of us already know that motor vehicle crash fatalities are higher in rural than in urban areas.

There we go. Rural areas contain, you know, about one in five people, but they generate 30% of all vehicle miles traveled and almost half, 45% of all traffic fatalities. Process that. You've got rural having so few people and having so many traffic fatalities. And relatedly, vehicle miles traveled death rates are almost twice as high in rural versus urban areas.

Why is that? Well, if you're going to say, they're just not so great at driving out there. Those guys and their pickup trucks. No. You'll notice that according to the U.S. Department of Transportation, the crashes with alcohol involvement is similar in rural and urban areas. And observed seatbelt use is actually, well, measurements are the same. So it's not a simple answer.

Why? Why are people crashing in rural areas? Let's look at this picture. By the way, full disclosure, I'm married to a highway engineer. This is a guy who when we were on vacation has been known to stop the car, slap on a hard hat, and get out and talk to people on a roadside if he feels that they have not

set it up successfully for safety for their workers. So I'm a little conscious of this.

But here, built environments - okay, here we have a picture of a country stop sign. So you're thinking well yes, that very popular. But how the intersection is designed - where the stop sign is placed, whether it is signaled - well we can't afford to have traffic signals at every intersection, but is there a sign?

If you have a sign so that you have a good reflective stop sign and you have a light, that's an ordinary street type light that makes sure that that stop sign has illumination, you're going to lower the number of traffic fatalities you have. So the condition of roads is not an accident, the condition of roads is how you decide to build them, how you decide to sign them.

There's a whole huge discipline in and of itself that talks about how you make roads safe for all customers. Maybe we can't afford them for all rural areas, but perhaps we can look to see where are our high traffic fatality areas, what can we do? So with that, I'm going to wrap up physical.

I just looked at air quality and said we start out with an advantage. In some elements - in one element of the built environment, meaning how we design our intersections, we have a disadvantage. There are people who know way more about this than I and I'm sure that we could arrange other presentations in the future.

I'm going to flip to economic considerations. And I'm going to just look at two, which is the nature of the rural economy and the jobs its supports and occupational hazards. As you can see from my little illustration here, it all is a really tangled web of - I am not knowledgeable myself about the - what

element that we - very important in maintaining health, the availability of health insurance spot industry.

But I did find out from a September 2020 Bureau of Labor Statistics report that medical care was available to 27%, only 27% of workers in the lowest 10% wage category versus 94% of workers in the highest wage categories. And when you look at some of the industries, and I'll pull the statistics back, that rural does support, they tend to be in industry areas that are things like leisure and hospitality, which has medical insurance only available to 52% of workers.

Unfortunately, the BLS does not track ag, forestry, or fishing. But let's - with that and I probably said that out of order, let's go look at these economic considerations. When you say rural economy, a lot of people picture a farmer in a Chevy truck, you know, mending fences or some type of farmer type activity.

I grew up where there's a lot of truck farming so there was not so much fence mending as, you know, weeding. But agriculture is actually quite - rural companies are actually quite diverse. As you can see from this little map that was shared by the U.S. Department of Agriculture, there's a swathe in the middle of the country where agriculture is dominant. And other swathes, you know, in oil country and in mining areas, where mining is dominant.

Something to think about. Agriculture and mining both experience global price volatility. You can be working, working, working really, really hard and suddenly a bumper crop in Russia means that you're not having the market for your grain that you once had. Or again, somebody may find a new oil field and, all of a sudden, the price you're getting for oil declines.

These are things that are volatile, and for some of these industries, such as agriculture and recreation, they're seasonal. What does seasonal mean? Seasonal means that if you are only employed half the year where are you getting your income, your healthcare benefits, all the other things that you associate with employment, during the rest of the year?

The two – wait, the three points that I wanted to take away on this social determinants of health is that we have diverse industries, we have volatile industries. Some people are bouncing up and down with regard to whether they are employed or not. And some are seasonal, so that we know that this bounce is going to happen.

These are complex issues that are going to feed forward into some of the other concerns. I'll go next as part of what we're talking about is healthcare, is the fact that because we have diverse injuries in rural, we have injury risks and fatality risks that are not common across the rest of the nation.

For example, all private industries have an injury rate of 2.8 per 1,000 in 2018. But when you look at ag, forestry, hunting, and fishing, it goes up to 5.3. Mining in this area and that one barely comes in better at 1.2. And since many of us talking here are educators, I don't know would I lift a heavy binder, education rates are only 2 per 1,000 for educators.

Let's look at these same things for statistics - for fatalities which are on a scale of per 100,000 workers. All of private industry, 3.5; ag 23.4. It has jumped way up. Mining, 14.1. Oh my gosh, education, what can I say, we're not dying on the job. But, you know, surely this is just inherent, we can't fix this. Why is this a social determinant of health?

Did anybody have one of these when they were a child? This is one of husband's childhood toys. And those of you who are familiar with farm colors will know, this means that his uncle worked at International Harvester. If you'll look at this extremely aged toy, you'll notice a whole bunch of things are missing, and this is why I say that injury rates are a social determinant of health.

Rollover structure - there's no roll bar, there's no cab. There's nothing. We're not even though of. I suspect when this toy was made they were optional from '67 to '85. And they were required from 1995 on. When we talk about the risks that our rural population is exposed to, regulatory actions as well the nature of the cap can reduce risk. So an interesting part of the job.

Another one that I want to go into, the second thing, is we talked about injuries that - we have talked about industries that are volatile for a large subgroup of the population that work in those industries. We have talked about industries, some of which are hazardous, and we may or may not have addressed all the risks that we need to.

And part of all of this combination of going in and out of work and going in and out of jobs, leads to the first of our social conditions. And under purely social determinants I'm going to talk primarily about three. There is so much more I could talk about here, but I had to sit on myself saying you can't do it all now. I really wanted to. Like the junior preacher who wants to read the entire Bible during his first sermon, I felt like that. But I turned it down.

We're going to talk about poverty, which is a consequence of and also feeds into, economic development; education; and race/ethnicity. We've probably all seen these statistics out of the U.S. Department of Agriculture. Rural has been poor and poorer than urban areas for a long, long time.

While things don't seem to be as bad as they were in 1959, thank heavens, they still aren't as good as one expects that they could be with as you can see here, poverty rates are 12.6% in metro counties versus 16.1% in urban counties, excuse me, rural counties.

And what's particularly frightening if you will, to me, is that this - the households that are particularly vulnerable to poverty are households with children in them. This is from work coming out of our Center looking at poverty among households with children, split by rurality.

And you'll notice that - keep going folks. Wait, this picture is from the USDA but we - I think we also have another one. There we go. Poverty is highest in rural for children under five, for all children, for working age adults. And it sort of mellows out for seniors. But this is the one that I should more attentively focused on.

Among households with children in 2016, 30% of rural versus 25% of urban, reported economic hardship. Economic hardship, just for the heck of it, is more like Hollywood poverty but it is not typically a measure of poverty. It is a measure that you felt things were too high and you had to scrimp, and not all poor families report that they experience hardship, and not all well-to-do families fail to report it. It's a mix.

But to summarize what I say with little babble bits in, you know, rural poverty is higher, rural households with children are particularly vulnerable. And in some areas of the country, poverty is what they call - the U.S. Department of Agriculture identifies as persistent poverty.

Poverty in an area, specifically in counties, where 20% or more of the population has been below the poverty level for more than 20 years, i.e. three censuses. And what's interesting, is that this notion of poverty that lasts, this doesn't occur in response to a particular economic downturn but stays and stays and stays, is a rural phenomenon.

And as you see here, the swathe is present - in Appalachia, in border counties and in counties with large concentrations of American Indian/Native American populations. So what does poverty do? I could not sort out only rural counties on the next slide, because they were - I downloaded them from the Urban Institute, which has this wonderful dashboard on debt in America.

And if you compare these two maps - here's the map of persistent poverty, here's the map of debt, the counties that are lighting up with high household debt, are pretty much the same counties that we already identified as communities of color, excuse me, as - well we did. We identified them as counties that have high persistent poverty, they will as you'll see later, they also largely are in communities of color.

This specific communities of color within the Urban Institute debt metrics, what they look at is ZIP codes. And they assign a ZIP code to being a "colored" community if more than 40% of the persons are non-White and White communities are those where 60% or more of the communities are White.

So looking down at the ZIP code level which is lower than the county, you can see that debt remains higher for some people than for others. And obviously, if you've got overall debt, you're going to have medical…

Shawnda Schroeder: Dr. Probst?

Dr. Jan Probst: Question?

Shawnda Schroeder: Before you dive into the medical debt, I have two different questions for you about the persistent poverty.

Dr. Jan Probst: Oh yes.

Shawnda Schroeder: The last slide you shared is the I-95 portal are the one that has persistent poverty, do you know?

Dr. Jan Probst: Yes. That is one of the areas in South Carolina. Correct.

Shawnda Schroeder: Great. Thank you. And the other question was, do you know anything about the relationship between the number of children in households in rural versus urban areas, under the idea that they're inclined to think that generally rural households possibly have more children than do urban. Is that true or do you know?

Dr. Jan Probst: I do not know. But I'm writing that down because that is a discoverable fact that we will look into so I can find out the answer. Maybe for the…

Shawnda Schroeder: All right.

Dr. Jan Probst: …if I'm really good at this, we can maybe find out the answer by - aren't we having a Twitter chat on the social determinants of health in some…

Shawnda Schroeder: We are this week. I'll plug that more at the end. But yes, we are. Thank you. That's all I was interrupting with.

Dr. Jan Probst: No. Thank you. Those are great questions. This is why I miss like people jumping up and yelling I've got a question. That was as close as we could get. Okay. So the - yes, this is the I-95 corridor and we'll talk a little bit later. Moving on quickly.

Okay. Households with debt, households with medical debt. Well okay, that's another sad story, but why do we care? You know, and again, interesting, these are the amounts - these are the slight - these are the rates and overall debt is a little bit higher than medical debt which is interesting.

Why do we care if we're, you know, oh well they haven't got money? Well if they haven't got money and they're adults they can't take care of themselves and higher poverty may in part explain why these numbers have – asked of adults, have you delayed medical care or have you delayed the medications you need as by whether you're in a metro or non-metro area.

This is from a CDC report. You'll notice that all these metrics are having to delay your care or being food insecure. Now I throw this in here too because there are disorders such as diabetes where eating a correct diet is important. Because some research that one of my doctoral students thought out, when we looked among persons with diabetes, if you have - were food insecure and had diabetes, 45.6% of food insecure individuals with diabetes reported delaying filling their diabetes medications.

So all of these things - poverty, food insecurities, tied together in a net that affects that your health. And another thing which by the way, I will bring it up, Dolly Parton, I'll get there. Poverty affects parenting and Dr. Crouch in our Center, did this analysis for me earlier, last week, when I asked her to.

Because one of the things - there was a study done, published in JAMA almost 20 years ago - I won't even give you the title because it's kind of scary. But they looked at a natural experiment that occurred when an Indian casino opened and all of a sudden some people were moved out of poverty and some weren't. What happened to the children?

And they looked at not just what happened to the mediating barriers. And one of those things that happens when you have more money is whether it is because of lower debt or because you are holding down two jobs, or for whatever reason, you have more time to focus on your children and this is why behavioral problems in children went down when you just had no change besides more money.

Here is the data from the National Survey of Children's Health 2017-18. All of us who have been educators and parents know that reading and singing to your children, these are important skills for a child to have when they enter school. Has anyone read to them? Do they know what a book is? Do they like having books?

And as you can see, there's a nice line that the more money is present in a household, the more likely someone is singing or telling stories or reading to that child. Which gives me my chance to bring in Dolly Parton because she has a charity that has distributed, so far, 130 million books. All you have to do - you don't have to demonstrate need, you just have to say you have a child. And that charity will send your child books periodically. I believe from birth through five or birth through six. Yet more, everybody needs to have something good in their lives and perhaps it's Dolly Parton. There we go.

Education as we know, for a variety of reasons, is a key correlate of multiple outcomes. We talk a lot when we are talking about patient education, about

health literacy. Well basic literacy is a key correlate of that. Can people understand the instructions? If you insist on giving them a brochure, can they read it and interpret it in the way that you expect?

And when we just look here among these numbers, you can see that persons currently living in rural areas, adults who are 25 and older and have finished their education, only 20.2% in rural areas have a bachelor's degree or higher versus 35, versus 34.7% in urban areas.

And this is complex. We're going to talk about, is a little bit more partly to do with outmigration. The person who is assisted by a good teacher who helps them get to college and basically says never come back and partly outmigrations but it is also local educational systems and possibly the underinvestment in rural educational systems.

This - USDA was - I love these guys. They have a system and a code for everything. This is their identification of low education counties. And you'll notice that this is tracking fairly well on the high poverty counties. It is adding in some fear and this little middle Appalachian region, it's got the border region. I say this implies a whole lot when you don't know stuff.

And again, thanks to our friends at USDA, who do so much of this, as you would expect, the poverty rates and the unemployment rates all hang together. And again, lower education is a rural phenomenon. One of the - one of the things that I'm going to make a point out of because is why do we have these poor school systems?

Well part of it, is if you are in an area where you're financing your school system off of property taxes, a bunch of poor people aren't going to have a lot of property that you can tax. So just think about that. And if you say well,

we're going to switch to sales taxes instead of property taxes, they don't spend a lot of either.

So you get in another one of those cycles that may need action at a higher level than local, to resolve. Now, you know, are rural state schools bad to teach in? And I found this interesting website online. The National Center on Educational Statistics. They do periodic surveys of teachers to see what's the problem. And what's interesting is if you look at this, rural is the dark red versus city is the dark gray.

Rural, people teaching in rural areas, are actually happier with some of the things of the quality of their environment than are urban teachers. They are less likely to complain about absenteeism, dropping out, tardiness, apathy, there's a lot of issues with failure of parents to become sufficiently involved.

But here's another thing. If you look at the other side, this is a great environment. My kids are here; they're ready to learn. But how much am I willing to give up? Well this I suspect, makes it seem as though the price differences are fairly small. But I think in certain localities they can be much larger than this.

But if you've gotten your newly minted degree and you can choose anywhere you wish to go teach, hey may as well, even if I was in a rural area, teach in the suburbs where they're going to pay me more money. In any case - sorry. I apologize. I can't play music and my hands are now stuck together. Okay.

One issue and I really was reticent to bring this up just because it is so easy to misspeak when one gets into certain areas and certainly race is one of them. And I am somewhat notorious already for my ability to misspeak. This

Faulkner quote - I'm sorry, if you live in the South and I have lived in the South since I was 15 years old, Faulkner is still dead on.

It is we are still living with the consequences of things that we have done, said, and thought in the past. And those attitudes have been sent forward in many cases, frighteningly, into the present. So all of the social determinants of health are entangled with race and racial discrimination.

I am very carefully not using the extraordinarily loaded word racism and using racial discrimination instead. So I'm going to start here again, with definitions. Race is a social construct. Back a bazillion years ago when I was undergrad and taking sociology of race classes in college, the first thing the professor said is there is no such thing as race.

This is a person at the time who is the only two - the only things that the famous people as groups, I had no idea, was whether you had a, what's that bone in your foot? The tibia? Whether it was kind of flat and whether it had an indentation in the back. I've got nothing. Ways to divide ourselves.

And I will point out that historically in the U.S., we use race a lot. If you read Cynthia Duncan's book Worlds Apart about rural, she also examines societies in which class becomes a social construct. But historically, the biggest one that we have all been facing for the last several months, is race. And what - why is race important? Because persons classified as non-White are more likely to be exposed to discrimination and bias. I think that is a very unarguable statement.

Now one of the things that has been annoying to me throughout this current election season is the degree to which rural has been conflated with White and also with a particular type of White person. And, so let's remember that rural

America is less diverse than urban, but if you'll notice, we still have large areas, large segments of the population of rural America that are non-White.

They don't fit the stereotype of the farmer. And here down in South Carolina where I have seen this in the fields, that dude on the horse riding his fence line can be black. These things actually happen when people leave, you know like New York and find out what's really going on in the world.

This is a map done by Whitney Zahnd at our center. And I like it, and I apologize to the guys at the Rural Health Information Hub because I at first was going to use your map but this one has everybody on one map. And these are counties where you have a concentration of a population, meaning rural counties where more than 20% of the population fits into a particular non-White category.

And again, this is displayed for Black populations, for the Hispanic populations, for the American Indian population. All the green are just places where you don't have large enough representation of a non-White population.

Every map I'm going to show you those things - previous things on persistent poverty, all these light up or slide up with that racial issue. Poverty varies across residence and race. Again, you can see here in the wonderful chart done by the USDA, that within the White population, within the Black population, within the Native American/American Indian population. I'm sorry, they didn't show the Asian/Pacific Islander but I'm sure you could find something possibly close. Hispanics, at any rate, Whites alone and non-Hispanic.

Everything. All of the racial disparities are present in rural and the really cruel part is they're even worse. These are really, really discouraging levels of

poverty. If you look back to my earlier discussion of what poverty does to parenting, what it does to communities in terms of their ability to raise money, you can see why these are difficult and intractable - not intractable.

Difficult issues that we are going to make intractable because we're going to fix them. Here are the persistent child poverty counties, and look at this map. Look at this map and look at what's lighting up. With the addition of Appalachia which has also persistent child poverty.

But it is - it is a problem of a class structure if you will in Appalachia and a racial structure in much of the rest of the U.S. Do we want - we don't want - I don't think people sit down mostly and say I want this to be this way. But I think if we do don't think about it and recognize it, we will not start taking the actions that will let us change it, so that we don't have these very specifically racially tied light up.

And again, everything that we've seen before, we previously saw that rural was less educated than urban. Within rural, we again had - have disparities in that the people with the bachelor's degrees are only half as likely among non-White populations as among White populations.

So we've got huge educational barriers that we have to get past. I'll just toss this out there. We all know that segregation and hate is motivated in part - is not - it's a mix of where people live and it's a mix of where you choose to fund.

Sorry. I got tied up here. I want to go back to this slide just so I'm not looking at something so divisive or potentially divisive. But one of the things that's going on, somebody raised the Corridor of Shame. And one of the

Corridor of Shame, and that was about a documentary done in 1993, chronicling - the documentary was done recently.

There was a lawsuit filed in 1993 that involved 36 plaintiff school districts in rural South Carolina and of these 36 eight were the representatives at trial. They start that they were receiving an inadequate education in rural areas. The plaintiff districts were 84% minority students versus the state average of 48. They were 86% students on free and reduced lunch versus 55 on the state.

And they were performing inadequately in 75% of districts versus only 17% of the state. It went on and on and they documented that their teachers were less well paid, they had shorter teaching contracts, they had fewer teachers with advanced degrees. And really the sad part of the thing is that suit was I think dismissed recently.

The whole concept that rural school districts were being underfunded in a system in which funding was based on property taxes and perhaps we needed to remedy it by some sort of state funding, was never resolved - never resolved to any kind of satisfaction.

And in areas of the country where rural minority education may not be an issue, there are still disparities in all of these nice light blue areas in the funding that were many rural school districts receive. The problems that do not acknowledge the fact that rural school districts have higher expenses for things like transportation; the difficulty of getting students out there; getting qualified teachers out in the rural areas and so on.

There is a lot - I almost went down the rabbit hole but it would be a whole other hour presentation about nothing but school issues. So yes, there's a lot of…

Shawnda Schroeder: Dr. Probst?

Dr. Jan Probst: Ma'am?

Shawnda Schroeder: I know you're about to transition out of schools and I know that you wanted a few times for questions, but I'm going to ask one and that is that somebody said about the issues of economics in school, is it possible that White parents may have the funds to pull their children out of public school while minority parents may not have that funding and ability to do so?

Dr. Jan Probst: Yes. Okay. Yes, as a matter of fact, as you will see in these notes to my slides, nationally 10% of schools are private. I had to stop myself from going into this. And if you have lived in the South for any period of time, you know that there is a lot that goes on here.

Virtually every area, every county in the South, has a White school district if you will. If they don't have a White public school district they have a White school. There are private academies that are throughout the South where the White parents who do not want their children to go to the underperforming local school, put their children in the private academies.

What is - oh, I'm going to get into so much trouble. What is fascinating to me is that the degree to which those people now have no interest in the school system and will therefore not support local initiatives to say raise the tax millage or otherwise improve the schools is obvious.

But what I found very interesting is as part of our South Carolina Office of Rural Health work, we visited a school district that has just exceptional outcomes. You know, a rural area is high minority but you know what, they

were - there's a nuclear power plant in the county and they get property taxes and a whole bunch of money from that rural - from that nuclear power plant and all of a sudden the district administrator for that small school district who is an extraordinarily creative and talented individual, suddenly had a - he started hooking up with USC, his high school seniors can finish part - like an entire semester while they're still in high school.

He has all of these special placements and he was describing to us how one of the county council members whose children do not attend his school but attend the private school, came up to him and started complaining. Why does your school have this and my school doesn't? Which, you know, is modestly threatening to me.

Yes. So yes, it is interesting. The White students are in fact likely pulled out. And now I'm going to be quiet before I get in more trouble. Thank you. Please interrupt. I am a steamroller and I get so excited.

Now I want to translate into action because I can give you more specifics about sad stuff. You can read our article about structural urbanism, shameless self-promotion, in our last December's *Health Affairs*. But I want to talk about, you know, we talked about sad stuff.

We ran through the fact that we all know that rural has higher mortalities and lots of health issues; we've looked at the fact that rural has an economy that even at best, may be volatile. I haven't even bothered going into all of the health insurance issues that come with that volatile economy and high rates of poverty.

I talked about high rates of poverty and how that affects not just that you don't have money, but the next generation by how - by possibly how you parent and

the lack of education. All of these things. But I think it helps in the way I present. I like doing things. I don't like talking about things.

So I want to talk about what can we do? And I want to talk about it in two areas just briefly - the clinician responsibility which as you see here, overwhelmingly actually recognizing what's going on and think about it when you're interacting with your patients and prescribing.

I still remember being horrified because I will say it is almost 20 years ago, which doesn't seem that long to me, talking to a local physician who did a home visit on one of her families whose child has persistent asthma that did not seem to be getting better.

And here in Columbia, which is a modestly sized metro area and she was going - this house was in the outskirts a little bit. These people were living in a house with a dirt floor. I just want to parse that a little bit. So all of a sudden I'm figuring out why the asthma wasn't clearing up, became a whole lot easier.

And so we can think about that's a fairly - not fairly, that' as really over the top case. But there are other ones. Things about where is the person living; what can they afford; what is their level of education; and are they concealing it? For example, when somebody says oh I just can't read this fine print, if you're a clever physician you don't offer them a pair of reading glasses. You say oh, let me help read that for you because they may not be able to read.

Moving on - clinicians and - clinicians and community responsibilities. And I'm not letting the clinicians off the hook here because yes, you can sit in your office and prescribe, but most of the people I know possibly because I'm oriented towards primary care and primary care practitioners also know if

they're going to fix it they have to take some leadership role within their community.

Then of course the community has to lead back. And so we now move into a little bit of a discussion of what physicians do and then yet more shameless self-promotion for the state of South Carolina. This is from a survey done in 2017. We could not find anything updating it. The percent of clinicians reporting that certain assistance with social determinants of health would benefit their patients.

And the ones that they look at in this survey, for information about water quality because this was done when people were worrying about Flint, Michigan, and stuff. Help getting affordable housing; help getting sufficient food; help arranging transportation.

And in all - in - certainly with regard to transportation, you can see the green shows the proportion of physicians who thought this would greatly help their patients. And realistically, across the top, only a few in any of these categories, thought that their patients didn't really need this kind of stuff.

So physicians know what's going on. They know that their patients need help. The problem is they think somebody else will do something about it. You know, it's like when you go to a meeting and somebody says somebody should do something about, but they have specific recommendations.

For physicians, I'll count anything within their office as being they're trying to help. Like I, Dr. Jan, do not specifically have to do anything, only 11% say I would talk to my patient about that. But 17% might have to - another staff who's medical like a nurse or maybe their admin staff.

So you can see a lot of them see that somebody in the office will be helping. But there's this big thing and they may be right, it's housing which I didn't even go into rural housing. I had to stop myself because I was starting. A lot think that housing, affordable housing and food are important. Somebody should do something.

Somebody else has to fix this and we'll help. But somebody else. That's their problem. But it's everybody's problem. Well going back to that web that I started with, all of this - nothing in - no aspect of rural health will be improved by the rural healthcare system alone, nor will it be improved by jobs development alone or by more teachers or better teachers alone.

Everything that we have to do to fix this has to be intersectoral, all of the same people and it has to be collaborative. And now we're totally into the world of shameless self-promotion, although I will say that we did steal some of this - these basic concepts from I believe North Carolina.

A couple of years ago, the South Carolina Office of Rural Health embarked upon the development of a rural health action plan which you can now download from their website. But please don't all do it at once because if they crash the site they'll yell at me I'm sure.

We looked at Dr. Frieden's CDC Health Impact Pyramid, you know, all of this medical care somewhere at the top, but really decided that if we were going to make a dent in rural health after 20 years, 40 years, of the state office working on physician placement, loan repayment, supporting all practices, supporting hospitals, we've done everything we can on the practitioner side.

Well we've got - if we're going to - I hate this phrase, move the needle, I'm afraid of needles. But if we're going to bring about effective change we have

to focus with a laser beam on the socioeconomic factors that are affecting health in rural South Carolina.

And so we got together this big taskforce, and by we, I mostly mean Graham Adams. So happy with Graham. He is a fireball. And he has – I'm so inspired by his words. There was this notion that we couldn't do it alone. It is a 50-member taskforce and there are representatives not just of healthcare but of industry, of education, politics.

We have a representative there, a legislative liaison type person. And we also ask that the people who come to the taskforce be the leaders of the agencies. We didn't want anybody there who was just going to have to report back up the chain and nothing would happen. So we got a huge taskforce together.

We had that school district head that I was talking about, we had the heads of tech colleges, we got the Association for Community Economic Development, infrastructure, loan funds. We had - we wanted everybody who could make a difference in changing all what we perceived the drivers of why people don't have good jobs and don't have good health insurance and don't have self-care and good health.

And when this - this went on. You can see I'm wiping imaginary sweat off my forehead. Now I'm going to cough. Apologies while I pull myself together. So I'm just not coughing anymore. And I think we have 15 recommendations across five areas which you can see there. Only one of which addresses healthcare access.

And one of the things that I want to point out is that in addition to having this big taskforce meet, the State Office of Rural Health had people go out into all

of these communities - oh dear, I'm almost done - going out into these communities and having town hall meetings. So we did a feedback loop.

You know, we met with the town hall people, make all the notes, go back to the place, put up stuff on a white board and say this is what we heard. Is this correct? Because you haven't communicated and we got a feedback group that says both of you understand things the same way. So this was an enormous community intensive reach out and talk to a lot of people effort.

And given that I am actually the sort of person who is incredibly shy and hates going to rooms full of people I do not know, imagine the effort all this took. So we - I will - I will encourage you to look at some of the things that we did, if you will, to look at some of the recommendations because we really did focus a lot on building community leadership, economic development, education, and housing.

Having housing policies that did not exclude people inappropriately if they were trying to better themselves for example. And I say funded feedback. One of the things that we are doing now, we are in the feedback stages. We did get funding to track how we were doing on all the goals that we set.

So instead of just saying here's an action plan, toss it out there, we are keeping track of who many of those goals are being met so that we can report back whether we're getting - being successful or not.

Shawnda Schroeder: And Dr. Probst, I will give you a couple minute warning as you are on your wrap up slide, so it works perfectly. Thank you.

Dr. Jan Probst: Yes. I can talk faster. Just - I am wrapping up. I did rant - I wanted to say so much more. There is so much about rural that we can explore, that we can

look at. I say I almost had a whole other series on housing alone and how low-income housing policies affects the ability of people to pull themselves up from their bootstraps.

But we all know that this is going to vary. But each of us can look within our own states to see what's going on; what does our education system look like; what do our jobs look like; who's working to build economic development, to bring new industries and nice jobs to those areas?

And we can't do that as healthcare professionals, as public health professionals, as State Office of Rural Health people. We can only do it if we can find out, you know, grab a - be a convener; be someone who pulls people together, make them get in a room. If you see them once they usually come.

Make them get in a room and say yes, we think this is a problem and we think you can solve it. And of course, I do have some - I did disclose my links to the State Office of Rural Health. And the cat was not allowed into the room although he was meowing when I first closed the door. Much less distractions. Here is our website. Thank you. I'm done.

Shawnda Schroeder: Fantastic. Thank you, Dr. Probst. And thank you for answering questions throughout the presentation today. Recognizing that we are out of time, I appreciate those who presented questions as we went through today. If you have additional questions, Dr. Probst is always very, very willing to answer those so please email her and reach out to her.

I shared her contact information with you in the chat box and I would also like to promote the fact that it is National Rural Health Day Week if that can be a thing, if I can extend it all week. It's also going to then take over the month. So consider celebrating National Rural Health Day Week Month by visiting

Gateway reading more than 100 publications that have been written by Dr. Probst that are available on Gateway.

And consider joining us for a Twitter chat later this week, hosted by the Rural Health Information Hub and the National Organization of State Offices of Rural Health, which is being held on November 18th at 12:00 pm Central on Twitter.

And for those of you asking about the slides, the slides are already online. I will share the link to the slides again in the chat box. Feel free to access those and we will send out the slides, the recording, and the transcript via our Rural Health Research Gateway alerts.

If you have not signed up for those, I will share those in the chat box as well. Dr. Probst, any closing words before we sign off today?

Dr. Jan Probst: Oh, I just want to apologize. I talked much longer than I thought because I - it cut off questions and I'm sure I would have learned as much from the questions as anything. So if anybody has questions quickly type them in the chat really now or email me straight away. I love questions.

Shawnda Schroeder: Yes. And we will be sure to share any questions that come to the chat box with Dr. Probst as well. And I will share with you her email one last time in the chat box.

Dr. Jan Probst: Thank you, Dr. Schroeder.

Shawnda Schroeder: Yes. Thank you, everyone. I will also do one last plug. Dr. Probst is also proficient on Twitter. I will share her Twitter handle for those of you who

want to find her and Sam the rural health advoCAT. Thank you, everyone. I will now turn it over to Valerie, the operator, to close out today's session.

Dr. Jan Probst: Thank you, Valerie.

Coordinator: This now concludes today's conference. All participants may disconnect at this time. Speakers, please standby for your post conference.

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