

DataSpeak: Disparities in the Health and Well-Being of Children and Youth in Rural Areas

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Program Transcript

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Introduction

Michael Kogan, PhD
Director, Office of Epidemiology and Research
Maternal and Child Health Bureau

Good afternoon. Welcome to today's DataSpeak web conference, Disparities in the Health and Well-Being of Children and Youth in Rural Areas of the United States. I am Michael Kogan and I am the Director of the Office of Epidemiology and Research at the Maternal and Child Health Bureau which is the sponsor of the DataSpeak series.

The health of children in rural areas is a topic of vital interest to MCHB and its partners. Children and youth in rural areas face disparities in both access to healthcare and in health outcomes. Today our speakers will present recent data on access, health status and mortality patterns of children and youth in rural areas along with resources and information on improving the health of these populations.

[00:48] We are excited to have with us today three expert speakers. Our first presenter today will be **Dr. Jan Probst**. She is the Director of the South Carolina Rural Health Research Center at the University of South Carolina. Dr. Probst will present new data on key indicators of access to healthcare and dental care for children in rural areas.

Our second presenter will be **Dr. Alana Knudson**, Principal Research Scientist and Co-Director of the Walsh Center for Rural Health Analysis for NORC at the University of Chicago. Dr. Knudson will present data on rural and urban mortality differences for children and youth.

Finally, our third speaker will be **Dr. Steve Holve**. He is the Chief Clinical Consultant in Pediatrics for the Indian Health Service. Dr. Holve will present on the significant disparities faced by American Indian and Alaskan Native Children compared to the general US population.

I will now turn the program over to our moderator: Sarah Lifsey.

Sarah Lifsey, MPP
Altarum Institute

[01:54] Thank you so much. Before we get started I would like to welcome our presenters and also everybody who is in the audience today, thank you so much for joining us. Before we begin our presentations I just have some brief technical guidance for everyone.

First, I would like to call your attention to the [DataSpeak website](#) which we hope you will visit after today's program. On the website, you will find archives of all the DataSpeak programs going back to the year 2000.

If you would like to make the slides larger, simply press the “fullscreen” button at the top of your screen, and to return to the original view, press it again.

Finally, please know that your phone line will be muted during the presentations. At the completion of the program, we will be having a question-and-answer session, and we will provide instructions for asking questions over the telephone at that time.

If you would like to post a question online, you can do so at any time during the program using the “questions” box on the bottom of your screen. Just type your question in the box, and hit “enter.” So, now I would like to turn to our first speaker, Dr. Jan Probst.

Trends in Rural Children’s Access to Medical and Dental Services

Janice C. Probst, PhD—Director of the South Carolina Rural Health Research Center, University of South Carolina

[3:04] Thank you, Sarah. Hopefully, I am using our device correctly and my slides will be up. I would like to say that I am in the room with Ms. Karen Jones who is the Associate who has worked with me on helping with this analysis. I should also, although I will again at the end, point out that this work was funded by the Federal Office of Rural Health Policy which has an interest in all things rural and therefore made it possible for us to do this analysis.

[3:35] What we are going to present today, is some new data on children’s health and these are trends over 3 waves of the National Survey of Children’s Health. As you can see there, it has been done at approximately 5-year increments over the past decade. We are going to look at some of the social determinants of health—very specifically poverty—since we only have a few minutes. We are going to look at health access as measured by basic preventive visits, but before we get there, and as the leadoff hitter, I am going to introduce what rural means in terms of definitions so that our remaining speakers do not have to cover the same territory.

[4:14] What is rural? There are 2 ways that rural can be measured, big picture which a lot of people use, 1 is measuring at the county level, and basically a county with no urban area that has more than 50,000 people in it is a rural county. There is a lot of variance on that, but that is a basic crux of it. The advantage of using counties is that a county is a unit of government. Somebody is in charge of a county, and you can talk to them.

The disadvantage, as will become evident in the next slide, is that counties are really, really big, particularly in the west, and they can over-bound rural.

[4:53] If you look in this little map for example, you will notice that pretty much all of Southern California is identified as being urban, even though anybody who has driven east, from say San Diego, knows that it in fact gets rural pretty quickly. But the counties in California and some of the other western states are quite large.

[5:16] For this reason, a lot of researchers like to use a second definition of rural that is a little bit more precise. It measures whether a census tract is rural or urban, and there are ZIP code approximations of census tracts that can be used.

People, most notably, Gary Hart, because I believe he was in charge of the big project, have gone through all of the census tracts/ZIP codes in the U.S., and classified them from number 1, highly urban, to number 10, very remote.

The advantage of this manner of dividing up rural and urban is that it works really well in some of the bigger places like the west. Unfortunately, there is no one in charge of a ZIP code, but still, because it is a more precise and smaller-grained definition of rural, it is what the National Center on Health Statistics and prior Maternal and Child Health Bureau reports have used, and it is what we used in the data that are going to be presented next.

[6:21] As you can see, these rural-urban commuting area codes divvy up the whole country fairly nicely, and Southern California no longer looks to be entirely urban but instead, and more accurately, shows up as a mixture of rural and highly-rural places.

[6:41] So, with all that, what did we do and what new data are we presenting? We are working from the National Survey of Children's Health which Dr. Kogan must be extremely familiar with, because it is sponsored by his Bureau [MCHB]. That is a telephone survey of households with at least 1 child between the ages of 0 and 17. It is a very large survey, approximately 90,000 observations in each of those 3-year segments, and it uses RUCAs to define rural.

[7:11] For those of you who are really interested, here is a big picture of rural as a context. I am not going to give a lecture on that.

[7:20] Let's look first at that context for rural children among which the overwhelming fact, as a lot of people have brought to our attention lately, is poverty.

[7:30] As you can see in these slides, and these are all significant changes, the percent of children living in poor families has been increasing. This first slide shows that the percentage of families below 100% of the Federal Poverty Level—it is consistently higher in rural, and it has increased in both rural and urban children over the past decade.

When you add poor and near-poor and these dashed lines, which have now appeared, are the near-poor lines, you can see that in remote rural areas about half of all children are in fact living in what we would definitely consider to be low income homes, if not strictly-poverty homes.

The proportion of children living in this disadvantaged economic status is much lower in urban areas across the U.S., although, unfortunately, across the whole country it did grow during that big recession period.

[8:32] A second change that has occurred in rural America, although to a somewhat lesser extent than in urban America, is the increasing diversity of the country. The rural U.S. has always been, if you will,

whiter than the rest, but that distinction remains but is slowly fading. In 2003, 73% of kids in large rural areas and 76% in small rural areas were white. By the year 2011/12 that had decreased to 65% in large rural counties and 69 in the smaller rural counties.

The proportion of African-American children however, as you can see from this graph, really stayed pretty flat and did not really change or increase much. Where the diversity has come in rural areas in particular, as this next slide shows, is in the growth of the Hispanic population. The little line spans quite nicely as Hispanic kids increased from 12 to 17% across the decade in large rural counties, and from 8 to 14% in smaller rural counties. Whereas among children of other race/ethnicity, slight increases as well.

[10:10] In general, while rural America and its children remain majority white, there are increasing large segments of the population that no longer meet that white rural kid out of Andy Griffith stereotype.

[10:15] Another change that has been going on throughout the country and has affected rural areas as well, is the increase in the number of children who are special needs—and I have just put that little slanty line in there (that is not very scientific)—but basically shown is the proportion of children who are special needs has increased significantly in all children and in children who live in large rural areas—large rural areas—large rural RUCAs. No significant change, as you can see the increase is a little bit more modest, in the remote rural areas. I will allow the people who are much better expert at it than I to state whether these are true gross or an advance in our ability to identify children with special health care needs. So we've got a population with more poverty, more diversity and more special health care needs.

[11:16] On the plus side we are able to address those populations with more children being insured than pretty much ever before. There are rural disparities—they remain—as you can see if you look at the 2011/2012, somewhat fewer rural children are insured than urban children. But overall, those numbers are getting so high that in aggregate, we may be getting as close to getting all the kids covered as we are going to get—given accounting for the inevitable little bits of churn.

[11:50] What is particularly important is that this gain has included children who are in poverty as you will notice that there is a really sharp uptick by the year 2011/2012 in the proportion of kids in families below 100% of the Federal Poverty Level who are insured.

In fact, in this population, the rural poor are actually doing better than urban kids. They are more likely to be fully insured or as near as you are going to get.

[12:21] One thing that I will remind everyone which may be speaking to the choir for this audience, Medicaid is a more important source of health insurance coverage for rural children than for urban children, and as you can see in this last side, by 2011/12, half of the kids who were living in small rural areas who had health insurance, had it through Medicaid. This, of course, reflects back on the increased level or the higher levels of poverty in rural compared to urban communities that were noted in a previous slide.

[12:58] African-American kids—we are doing great at getting them health insurance. Where do our disparities show up in that new growing population of Hispanics? Our Hispanic kids, although obviously well-covered compared to adults, have not reached the levels of African-American children, and our other children are just sort of somewhere in the middle there. So we are doing better at getting our kids insured but we still have a gap when it comes to the Hispanic population.

[13:33] So what does this mean? We have talked about poverty. We have talked about who is insured. Okay, so are people getting in to see a physician or a dentist and to measure this, we really just looked at preventive visits, because it is all we can fit in our short presentation.

[13:50] Here we have a rural gap that reappears. You can see 2 things going on in this slide: 1 is the rural urban gap. Most kids are getting a preventative medicine visit, but it is lower in rural than in urban areas, and you can see that dip the between 2011/2012. We speculate that these are lingering effects of the recession in that even though a lot of children are insured, there are costs to a parent to getting a child to a provider that may not be fully-compensated by insurance like the need to take time off from work and so on.

[14:31] I will also note that preventive medical visits particularly lag among children in poverty. Looking at this little top bar, this little top bar is all kids. And the peak in 2007 and the decline subsequently affects all kids. But it more stringently, if you will, affects poor kids who are all sort of lumped together. There are not huge rural/urban differences, and rural is actually just a smidgen above urban. But for rural and urban, children living in poverty families that fall off after 2007 is more marked.

[15:14] Preventive dental visits lag in rural again, and you can see this line that is lower for rural. Things got a little better in 2000. There is not quite the big gap that there was for the preventive medical visits—partly because fewer children receive preventative dental visits, but still we see the fall-off for urban children on dental visits was not as great as the fall-off for rural children.

[15:41] For poor kids, you can see that preventive dental visits rose between 2003 and 2007, did not fall off greatly between then and 2012—the problem here is more that they are below the visits that all children get.

Poor kids are basically less likely to get that oral health supervision that might benefit them later in terms of reduced caries, reduced inflammation, and all of the subsequent problems associated with poor dental health.

[16:16] Okay, kids are essentially healthy, so they do not get quite as many dental visits, or they don't get quite as many preventive medical visits. Does it matter? Maybe it doesn't.

[16:28] This is the percent of people saying their children are excellent or very good health, or what I call the world's most boring graph, because as you can see, there is no change by residence, there is no change by date. Roughly 85% of folks say their kids are just in terrific health.

[16:50] But if you split things out, it gets a little more interesting. As you can see here, this top line is that boring 85% of people, but you will notice that for poor kids, the situation is a little bit less

robust—fewer parents are willing to say, “my kid is in excellent or very good health.” Although, interestingly enough, there are health disparities here that favor rural children.

[17:17] Oral health—-not quite as boring a graph—although close. You will notice that there is basically no significant change over time: approximately somewhere around 70% of parents say that their children have excellent or very good teeth. And you might wonder, “well, do people always say excellent or very good?” I put this green line in to say that was the line for health. 85% of folks say, “my kids are in good health,” but somehow there is not an obligatory feeling that you have to report that your children’s teeth are really good, if that makes sense.

While there may be a reporting bias to say things are better than they are; people evidently do not feel that same bias with regard to reporting on their children’s oral health.

[18:19] And that same problem that we saw before with regard to overall health appears even more sharply for poor kids. You will notice that poor children are somewhere between 50-60% of parents will say that the child’s oral health, their teeth, are in excellent or very good condition, and there is really very little change in these numbers over the decade.

[18:32] What do I take away from all this and our little team of rural folks here? We do think there is some progress—all is not gloom and doom. Rural children are increasingly covered by insurance. However, rural disparities persist across most measures of access, although not necessarily measures of health status.

I am sort of disturbed and continually disturbed because of what it implies for long-term dental health in that a substantial group of parents do not see their child’s oral health as excellent or very good.

Finally, there are some things that are getting worse, and we are not quite sure why. Well, the why maybe bigger questions than we can answer in our paygrade. Rural poverty has continued to increase with no change in rural/urban disparities, and where that marked decline in preventive visits. Now it is possible that those will uptick after the ACA [Affordable Care Act], and if the recession recedes across rural areas, but at the moment that is an open question.

There are very high levels of insurance among our children’s population in 2011/2012, but still, the rebound in preventive visits did not occur.

[19:51] And with that, I will say, thanks. There’s our website.

[19:55] Because the folks at the rural health research gateway will kill me if I do not, I will show their slide, and I will turn it over to our next speaker.

Sarah Lifsey

[20:04] Thanks, so much. Just a quick reminder for our audience, if you have a question for any of our speakers, you can submit it online at any time using the “question” form at the bottom of your screen. Next, I would like to turn to our next speaker, Dr. Alana Knudson.

Rural Health Indicators

Alana Knudson, PhD—Principal Research Scientist & Co-Director of the Walsh Center for Rural Health Analysis for NORC - University of Chicago

[20:21] Hello, thank you so much for the opportunity to share our work. I, too, would like to recognize the Federal Office of Rural Health Policy for funding this research and for giving us the opportunity to share these findings.

[20:36] I would also like to recognize my colleagues at the University of North Dakota Center for Rural Health along with my colleagues here at the NORC Walsh Center for Rural Health Analysis for contributing to this research.

I also wanted to share that the intent of our research center is to look at means to increase access to healthcare services for rural populations as well as looking at the overall health status of rural residents and also to assess the impact of health reform on rural populations as we continue to look at finding new ways to secure adequate and affordable high-quality healthcare services in our rural communities.

[21:21] First of all, I would like to share a little bit about our study that I will be sharing the findings with you today. First of all, cause-specific mortality is often higher in rural counties than urban counties and we refer to this as the “rural mortality penalty.”

We know there are a number of different contributors that really impact the mortality rates—social determinants such as Dr. Probst talked about with regard to poverty—is an important issue for consideration as is smoking and access to secondhand smoke, obesity, physical inactivity. We also know that high mortality reflection is a reflection of the physical and social environment where people live, and these are particularly important for children’s health and well-being.

[22:14] The methods for this particular project included an analysis of the National Vital Statistics System data. We looked at death record data, if you will, and we used the 2013 National Center for Health Statistics Urban/Rural Classification Scheme for Counties by which we are primarily looking at the 5 different designations, and I will explain a little bit more about those designations.

For this analysis, we looked at the 10 different Department of Health and Human Services (HHS) regions, and we also looked at Appalachia and Delta regions. We stratified by age, gender and the top 10 causes of death for each age group.

[23:00] As Dr. Probst referenced, this particular classification scheme really focuses on using counties as the level of designation, and the ones that I want to call most attention to are micropolitan, which are the large rural, and those are counties and populations of 10,000 people to just under 50,000 residents; whereas non-core or small rural are those remaining non-metropolitan counties that are for the most part less than 10,000 people and not in a micropolitan statistical area.

[23:38] This map just provides an overview of where our 10 HHS regions are located.

[23:48] This particular slide designates which states are located in each region.

[23:55] To give you a little bit of context of how to look at these different maps and what they depict. This particular map provides information on mortality rates for children under the age of 1, and the cause of death is for congenital malformations. This map contains information for both genders, and if you look at the map on the left, that is urban which includes all 3 designations of sizes; whereas the map of the right indicates rural.

Now the mortality rate for this is up on the right-hand corner, and the mortality is a low of 80.4 per 100,000 to a high of 168. So there is a twofold difference in mortality rates between those areas in our country that have the lowest rate as compared to those areas in our country that have highest. As the color gets darker—that is an indication of a worse or a higher mortality rate. As you can see from this slide—children under the age of 1—the mortality rate for this particular cause of death—congenital malformation—was highest among our rural areas—particularly in the central part of our country and in the southeast.

[25:16] This particular slide is also for the age of under 1, and this cause of death was due to short gestation and low birth weight. And again, we combined the sexes or the genders because of the small numbers that we were looking at. Interestingly enough, in this particular slide, the worst mortality rates for this particular indicator are actually in urban areas—in the great lakes area—as compared to other areas of the country.

[25:47] When we look at ages 1 to 14—looking at unintentional injuries—again, we combined the genders for this particular slide, and as you can see, there is almost a 6-fold or a 6-and-a-half-fold difference between the mortality rates for those that are in our urban areas versus those in our rural areas. Again, our rural children, ages 1 to 14, have a higher mortality rate for unintentional injury—particularly in the southwest.

Again, looking at the 1 to 14 age group, and this time we are looking at malignant neoplasms, and again we are looking at all genders we see a mixed bag where we have some hotspots, if you will, of high mortality rates in urban and more of those in the south-central part of the country versus in the rural areas where we have more of the central area having higher rates.

[26:49] Then, when we look at young adults and adolescents—ages 15 to 24—and again, we are looking at unintentional injuries and this is stratified by gender. We can see that there are some differences, and once again, there is almost a twofold difference in mortality rate between the lowest and the highest areas. But as you can see—in the rural map—again, the darker the color, the more intense or the higher the mortality rate—you can see that we have the highest mortality rates in the southwest through some of the Great Plains as well as in upper Appalachia.

[27:31] Likewise, when we look at females—ages 15 to 24—and their cause of death—also for unintentional injuries—we can see that rural areas have the highest with the Great Plains having the highest.

[27:49] Looking then to another cause of death—suicide—and again, there is almost a fourfold difference here—and we are looking at males—we see once again, that in rural—particularly in some of the plains and the western part of our country—we have highest mortality rates. Whereas in, for example, the southeast, it is not as high.

[28:14] Again, looking at suicide for this particular cohort—for females—we see a very similar pattern as we saw for males. We see in part of the Great Plains and the southwest, we see the highest mortality rates for these populations.

[28:32] Now I am going to shift to the Appalachian region. Just looking at this particular slide, you can see that the darker the region is the orange colors, the darkest one is non-core or the smallest rural, and the orange is the larger rural, and the greens are the different variations of metropolitan counties.

[29:00] This particular slide provides information on the top 10 causes of death for children in Appalachia under 1 year of age—and again, this is for both genders. Because we had such small numbers of mortality—which is a very good thing—we are only looking at stratifications that have been combined for all rural for both small and large rural as well as for the 3 different stratifications of urban.

The chart can be read in this way: the index is 100 which means that is the average across the country for mortality for this particular age group. And any of the bubbles—if you will—on top of that line is an indicator that this area has a higher mortality rate whereas the bubbles that fall below the line mean that this area has lower rates of mortality or these areas are doing better for these factors.

So, for example, the highest particular rate here for children under the year of 1 is sudden infant death syndrome, and you can see that is highest for children who reside in rural which is followed by circulatory system diseases.

[30:23] Looking then to children ages 1 to 14 in Appalachia, we see that the highest cause of death or the highest mortality rate for this population are for children that experience unintentional injuries—and again, you can see that this is significantly higher than the rest of the country. Likewise, we still have issues of congenital malformations, flu, and pneumonia, and suicide among our rural children that are higher than the rest of the country.

[30:58] Likewise, when we look at males 15 to 24 in Appalachia— again, we can see some differences. Interestingly enough, it is about 2.5 times the mortality rate for this population who experience flu and pneumonia. Likewise, we also see unintentional injuries as being higher—1.5 times higher—than the national average for this mortality rate.

[31:27] Then looking onto the same age group, 15 to 24, for females in Appalachia, unintentional injuries again is almost twice as much as the national average followed by—of all things—heart disease. And we often do not expect to find chronic conditions such as heart disease, but for this particular population—15 to 24 in Appalachia—we are seeing rural females having an almost 1.5 times higher mortality rate than the average in our country.

[32:03] Now we are going to switch to the Delta. Once again the orange counties here represent rural with the darkest orange being the most sparsely populated or the small rural. The lighter orange is the larger rural and then the greens are the different continuum of urban counties.

[32:26] Once again, when we look at the difference causes for death for under 1 year of age—again, we are looking at both genders in the Delta—we see unintentional injuries at almost 2.5 times what the national mortality rate is for children of this age group followed by almost twice the rate of sudden infant death syndrome.

[32:51] Likewise, when we look at 1 to 14—again, looking at both genders—we see in the Delta that children are dying of lower respiratory disease at 3 times the mortality rate of the national average and about 2.5 times for unintentional injury.

[33:11] Then looking to adolescents and young adults—15 to 24—again, looking at males in the Delta region, we see some differences. The greatest difference for our rural males in this age category is heart disease: almost twice the national rate for heart disease. And again, interesting to look at chronic issues contributing to this particular age cohort followed by unintentional injuries.

[33:46] Then looking onto females age 15 to 24, we see that of this cohort almost a little over 3 times the mortality rate for females of this age are dying of pregnancy- or childbirth-related issues. Likewise, we are seeing almost 2 times the rate of unintentional injuries. So, again, some very great differences depending upon where people reside and then ultimately what they die from.

[32:40] As Dr. Probst said, there are also positives, and one of the positives when we start looking at some of these different mortality rates—and especially looking at some of the causes of death as well as the underlying causes of death—there are a number of different innovations that have been implemented across the country that provide evidence as being either effective or promising practices that can help address issues such as childhood obesity. And these can be located on the rural health information hub on the community health gateway site. This information can be browsed by topic, by state, and by level of evidence.

[35:03] Likewise, there are also toolkits available that provide specific information to help communities look at how they can address the unique issues that their particular populations are facing—again, be it obesity, access to oral health, mental health, and substance use disorders. There is a whole array that are included, and most of these have a school-based or a function that provides some specific information to help address the early childhood and adolescent health issues that are impacting our rural communities.

[35:41] If you have any questions, or need any additional information, please contact myself, or my colleagues, and we would be happy to provide some additional information. And you can also find this entire chartbook on our website. I will now turn it over to our next presenter.

Sarah Lifsey

[36:05] Great. Thank you so much. Just a quick reminder for our audience: we are holding questions

over the phone until the end of the presentations, but if you have a question for our speakers, you can submit it online any time using the “questions” form at the bottom of your screen. Next, I would like to turn to our final speaker, Dr. Steve Holve.

The Trajectory of an American Indian/Alaska Native Child from Birth to Teen Years

Dr. Steven Holve—Chief Pediatric Clinical Consultant, Indian Health Service

[36:24] Hi, thanks for inviting me. So I thought I would try and give people a sense of what is a kind of hypothetical of how life would be—a life trajectory of an American Indian or Alaskan Native child from birth until teen years—recognizing that there are hundreds of tribes in America and each one is different, but for the purpose of some meaningful information for our audience—trying to give a sense of some of the common struggles that American Indian and Alaskan Native children face.

[36:57] Just some background—this is a map of the United States which includes tribal lands—they are in the purple areas on the map. And as would be expected, most of the tribal lands are in the Western United States. There is a small scattering in the southeast and in the central area, but the vast majority is in the plains and in the intermountain west.

There are currently 566 federally recognized tribes. In the 2010 census, 5.2 million people or 1.7% of the population, self-identified as American Indian or Alaskan Native either alone or in combination with some other race.

Importantly now, probably a little less than 50% of self-identified Native Americans live in reservation areas—that is—many people now live in suburban or urban areas. But for the purposes of this talk, what we are going to focus on are American Indian and Alaskan Natives who live on or near reservation areas, which again on this particular map are the purple areas.

[38:07] So let’s imagine when a native child is born now, and if this baby is the firstborn in their family, it is highly likely that the baby’s mother will be young—and in fact—40% chance the mother will be less than 20 years old. There is a very high likelihood that the child will be born into a family who lives below the Federal poverty line.

[38:32] This slide kind of captures the real dilemma facing American Indian and Alaskan Native infants. This is the infant mortality rate from 1999 to 2009. If you look on the far right, you will see that the overall infant mortality rate for American Indian and Alaska Native children is roughly double that of U.S. white infants. So, a major disparity there—but when you break that down between neonatal and postnatal death rates—what you see is that the neonatal infant mortality rate—that is the death rate in the first 30 days of life—is remarkably similar despite the serious socioeconomic barriers that most American Indian and Alaskan Native children face.

Really, almost all of the infant mortality disparity is in the post-neonatal death rate, and there, you can see that the overall death rate for native children between one month and 1 year is roughly 2.5 times that of the U.S. white population.

So, the question is “what drives this disparity?” Actually, so the summary is that American and Alaskan Native infants are born healthy, but they go home to a risk-filled environment. So, what drives this disparity?

[39:57] As an infant, the post-neonatal mortality rates are listed below as a relative risk that is the relative risk between a native child and that of a U.S. white infant. You can see the drivers of disparity here. SIDS or Sudden Infant Death Syndrome is 2.5 times higher in native children.

Injuries—this is predominantly motor vehicle accidents—are 3 times higher. Flu and pneumonia mortality rates are 5 times higher though these are extremely small numbers compared to the other two categories listed above. And then most distressingly homicide or child abuse is 3 times higher.

[40:40] Now, when we look at a 5-year-old Native American child, there is actually some very positive news. A 5-year-old native child is extraordinarily unlikely to get a vaccine-preventable disease, and that is because the Indian Health Service, if nothing else, is a public health system. Given the significant morbidity, mortality, and disparity of infectious diseases in the past 50 years, there has always been a major effort to make sure that Native American children are vaccinated. As many of you may know, the Native American children are eligible for free vaccines through the Vaccine for Children’s Act.

So, the Indian Health Service and Tribal Facilities get all approved vaccines at no cost to deliver to their patients. And, in fact, when the economic barrier is removed, and when there is a system in place to make sure children are tracked, vaccine rates can be quite high—and in fact, remarkably, the rates for disease—that is the second bullet—for pertussis, chicken pox, Hepatitis A and Hepatitis B are, in fact, now lower in American Indian and Alaskan Native children than children in the general U.S. population, so a really remarkable achievement for the Indian Health Service in the past 50 years.

[42:06] But not everything is perfect for 5-year-old native children, and, in fact, the vast majority of deaths for children in this age group are from unintentional injuries, and the relative risk compared to U.S. white children is still roughly 3 times greater, and again, of course the greatest risk is in motor-vehicle accidents and maybe in the same way that unintentional injuries in the previous presentations were also 2-3 times higher. I think most of this risk relates to distances, rural roads—which often are 2 lanes—rural roads which are often not straight and then also probably also related to alcohol issues. So, motor-vehicle accidents are a major driver of childhood mortality—I suspect in the same way they are in other rural areas of the United States. Again, most disturbingly the homicide risk, again, child abuse is also 3 times higher than the US general population.

There are some other significant morbidities that occur in American Indian and Alaskan Native children: 1 is early childhood caries, and 1 of the other presenters talked about the disparity in oral health for poor or rural children. And this is, if this anything, magnified in native children.

Native children in general have by far and away the highest rate of caries in the United States. And in surveys, 85% of American Indians or Alaska Native preschoolers have some caries which is 5 times the U.S. rate. But it is not just that they have caries—it is the intensity and severity of caries—and in fact, there is probably a 50 times higher rate of severe caries, caries which are intense enough that it would require operative repair or what is called full-mouth dental rehabilitation so again serious caries being a major health disparity for American Indian and Alaskan Native children.

[44:11] Another disparity and morbidity—if not mortality—is native children are significantly more likely to be obese and overweight. Right now, in children 2-5 years of age, 31% are obese—so much higher than the overall U.S. rate.

[44:31] What about when native children become teenagers?

[44:35] Again, there is some positive news here and again the Indian Health Service and Tribal Facilities obtain vaccines at no cost through the Vaccine for Children’s Program. Vaccinations are also tracked as a public health measure.

You can see on this graph, it compares national vaccine coverage through the National Immunization Survey for U.S. children as a whole—which is the green bars—versus children who get their care through the Indian Health Service or Tribal Facilities. You can see that in every category, the vaccination rate is higher for native children.

There is a slight difference in the tetanus vaccine—an even higher difference in the meningococcal vaccine—but what is most striking is the far higher rate of coverage for the HPV vaccine both in females and now in males. Again, part of this, I think is there is a concerted effort as a public health system to make these vaccines available to children, but probably another important feature is that the cost barrier is removed for our native patients.

[45:44] Another terrible disparity for native children is suicide. Again, for teens—especially male native teenagers—the suicide rate is unacceptably high and up to 6 times higher compared to some other U.S. groups.

[46:00] Other morbidity issues for teenagers: 20% of American Indian teens are overweight, 31% are obese. Type 2 diabetes among native children is at least 2 times the U.S. rate. Another important barrier is when native teenagers are in high school, they have a significantly high dropout rate, and also a much higher pregnancy rate compared to the U.S. white children.

[46:30] So, summing up the disparities across the age range for native children: probably the biggest driver of infant mortality and childhood mortality statistics are unintentional injuries, but other significant morbidity issues are overweight and obesity, mental health, teen pregnancy, influenza, and pneumonia.

[46:51] So we might rightly ask, “what should we do here? What can we do differently?”

[46:55] Money is not the answer in everything, but it is sometimes helpful. And this is a 2010 graph comparing expenditures per capita for the Indian Health Service which is on the far right of your picture—the smallest graph, unfortunately—compared with other Federal programs. And you can see compared to Medicare, which is roughly 11,000 per year, the Indian Health Service is much lower at 3000.

Now, you could argue Medicare, of course, will be higher, because it includes a lot of elderly people, but when we look to other Federal programs such as Medicaid or the Federal Employee's Health Benefit Program—that's the FEHB—again, the Indian Health Service appears to be markedly underfunded. It is markedly underfunded and also serves a population which is considerably poorer and more disadvantaged than the overall U.S. population.

[47:51] This is a summary of various demographic categories, and of course poverty—you can see—overall is 28% versus 15% for the U.S. average... high school... college, but again, I do not think even the measurement of poverty fully captures the disparity for many tribal members and in fact there is poor and then there is being crushingly poor.

And again, looking down below at crowding—and crowding is defined as greater than 1 person per room—the rate of crowding is much higher for Native Americans as a whole at 90% versus 6%, and in fact, in some tribal communities, the crowding rate is as high as 35 to 40%.

Then, I think, a really telling statistic is lack of safe water or indoor plumbing and I think it is true even in poor areas of Baltimore, New York or Detroit, no one imagines they would normally not have indoor plumbing or safe water—but, in fact, for 12% of Native Americans, they lack this basic amenity, and again in some tribal lands, the percentage of families that live without indoor plumbing or water can be as high as 40%.

So, Native American children are poor, but again, the intensity of the poverty and the lack of basic necessities are probably significantly higher in a number of our children.

[49:18] This graph just kind of sums up the fact that these disparities, for example, and illnesses are not genetic but entirely driven by social and economic factors. This is just a measurement of respiratory syncytial virus hospitalizations by home location. And this looked at children in the YK Delta, which is a part of Alaska, which had an extraordinarily-high rate of hospitalization. You can see it was almost 160 per 1,000. The U.S. rate on the far right was is about 25 so a major disparity, but in fact, if you look at native children who lived in Anchorage—in an urban center—the rate was really no different.

So, the driver of most health disparities for Native American children is certainly not genetic, but something about the environment.

[50:07] So, I am going to close with some really interesting findings about economic well-being, and one is: reducing poverty reduces psychiatric illness. As many of you may be aware, tribes are allowed to operate casino gaming, and for some tribes—especially those who are near major population centers—this can have a marked impact on overall economic health of the community.

This is a study from JAMA in 2010 which looked at family income supplements in a tribal group that developed a casino gaming program. And in a natural experiment, in the few years after casino gaming came online and economic improvement came to this tribe there was a marked decrease in substance use disorder in adult Native Americans in that group.

[51:02] Then probably, even a more striking finding, reducing poverty reduces obesity. Again, using a natural experiment in a tribal community that opened a casino over a 5-year period, they noticed a significant reduction in childhood overweight and obesity and in fact as they drilled down there was in fact a dose response rate to number of slot machines and reduction in childhood weight.

[51:32] I will close with this: I think overall, Native American children have significant disparities, but I am optimistic that the future for native children will be better. So, I will stop there and I believe we can take questions.

Questions and Answers

Sarah Lifsey

[51:47] Great, thank you so much, and thanks again to everyone who has presented today. It has been a very engaging program, and we already have some questions coming in. To ask a question on the web, you can just enter your questions in the field at the bottom, and hit enter, and your question will be sent directly to me. If you would like to ask a question over the phone, please press star [*] 1 to indicate that you have question, and the operator will help you know when to ask your question for us.

[52:23] So, while we are waiting for folks to join the phone queue, I will start with a couple of the online questions that came in. One of the online questions that we have is from Adrian, and this is really a question I think all of our speakers could address:

“Are the programs that are aimed at increasing the presence of health care professionals in rural areas making a difference in health status and health outcomes?”

[52:44] (Steven Holve) This is Steve, and I may be the only person who worked clinically in healthcare facility. So, I work for the Indian Health Service in a relatively-large hospital and clinic which has nearly 100 physicians on staff. But of our staff, probably 15% are here partly through the National Health Service Corps, which provides loan repayment to people who work in underserved areas. So, I do not think it is not the only reason that these physicians came here, but it certainly is helpful in attracting physicians or encouraging them to stay up to 4, 6, or 8 years after their arrival here. So, it's not the only factor, but it is definitely a positive factor given the significant indebtedness that young physicians face nowadays.

I do not think people that live in urban areas can appreciate the difficulty in attracting physicians to small, rural, impoverished areas. It is not where most physicians will normally choose to go—not just

Indian Health Service—any rural community. So, there is significant monetary—but also significant cultural—barriers in recruiting post-graduate trained physicians to a rural area.

[54:20] (Sarah Lifsey) Great. Dr. Probst or Dr. Knudson do you have any thoughts on that question?

[54:25] (Janice Probst) This is Jan; I will take a shot at it. It is, as I texted to the questioner, the really hard part is imagining what our rural areas would be like without those programs. Dr. Holve just mentioned the importance of the National Health Service Corps. We have one poor, predominantly-minority county that has had something like 25 National Health Service Corps physicians. You could say it is awful they did not stay. The problem is they would not have gone there at all without the National Health Service Corps. So, it does help somewhat.

The other problem, of course, is that imagining what our world would be like if we did not have those—with no interventions, with no rural health clinic status to try and keep physicians in rural areas, no National Health Service Corps, no community health centers—how bad might things be? I will defer to Dr. Knudson now.

[55:27] (Alana Knudson) My comment also would be that we also look at a lot of social determinants that we certainly cannot attribute to providers solely addressing. So, I think recognizing some of the challenges, too, that our providers have in supporting the health and well-being of the patients they serve given some of the challenges that their communities are facing, is an important consideration.

[55:55] (Sarah Lifsey) I have a question from David that I think that could be answered by any or all of our speakers.

“How has telemedicine impacted rural clinics and access to healthcare?”

[56:06] (Steven Holve) Again, being a person that is in a rural clinic, this is Steve, I think right now we are just starting to use telemedicine and it has incredible promise for the future—especially for maybe some of the specialty work where it is very hard to get specialists to come out to a rural area for the day, because of the time driving, loss of income, and we are really hoping to expand our telemedicine work.

Quite honestly, our problem is finding physicians in urban areas who are willing to do this work. The one place that has really been a pioneer in this is Alaskan Native Medical Center in Anchorage. And they have an incredibly robust telemedicine service for the State of Alaska which has enormous, of course, geographic issues. And they have both physician services and services to community health representatives in remote villages that they operate every day. So if you were looking for more information on a successful telemedicine program, Anchorage Native Medical Center would be the place to look at first.

[57:26] (Alana Knudson) This is Alana. There have been also some really great demonstration projects looking at the delivery of tele-behavioral health to children and adolescence in rural communities. There have been some real positive outcomes from them; however, at this time, most of those are delivered through grant funding, and I think one of the bigger challenges in expanding telehealth services for children is the reimbursement component.

Adjourn

Sarah Lifsey

[58:00] Well, I am sorry to say but we are at 4 o'clock now, so we have kind of reached the end of our time for questions. I want you to know that answers to the questions that we were not able to address on the telephone here will be posted in writing along with the program archive in a couple of weeks, and you can access those in the archive at your convenience.

If you have any other questions, you can submit them to us via email through the end of the week using the email address on your screen—dataspeak@altarum.org—and before you go, we would like you to know we will be broadcasting more DataSpeak programs in the coming months and announcements about these future programs will be sent out via e-mail to everyone who registered for today.

[58:47] Lastly, I would like to thank our speakers, all three of our great speakers for being on today and for talking to us about this interesting topic. Today's program is now complete. Thank you all for joining us and have a great afternoon.

About DataSpeak

The MCHB's DataSpeak webinar series is dedicated to the goal of helping MCH practitioners on the Federal, State, and local levels to improve their capacity to gather, analyze, and use data for planning and policymaking. DataSpeak is funded by the MCHB's Office of Epidemiology and Research.

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