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Moving Ahead Together:

Celebrating the Legacy, Shaping the Future of Maternal and Child Health

The Changing Face of Children's Health:

Results from the National Survey of Children's Health

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REEM GHANDOUR: Good afternoon, my name is Reem, as Michael mentioned and my presentation today is going to be on emotional and behavioral health among children and I'm really going to be focusing in on geographic differences. My talk is going to follow the outline that you see here. I want to spend a little bit of time talking about the rationale for this work and particularly why we wanted to use the NSCH to investigate children's mental health. I am not going to spend a lot of time talking about the data source since Michael already covered that but I do want to briefly describe some of the analytic choices that we made in our analyses. Before moving into a discussion of the results and I'm going to present them in that order, so depression and anxiety followed by behavioral and conduct disorders and then treatment. And finally, I'll close with a discussion of some of the key takeaway points that we see and I'd love to hear your reactions as well to this data.

For those of you who are familiar with this subject you know that there's actually been a great deal of work done on children's mental health. Nonetheless we felt like it was

important to use the NSCH to do this analysis for a couple of reasons. The first is that many of the most frequently cited studies have a very limited generalizability or a geographic representation and so, i.e., either they are not nationally representative or if they are they lack the capacity to drill down to the state level and this is important as I'm sure most of you know because so much of the policy and program work around mental health happens at the state level. The second reason is that we often see the use of very broad measures of mental health and these combine emotional, behavioral and sometimes even developmental disorders. While, this metric is certainly very useful when you're trying to get a sense of the overall burden of these kinds of conditions, we think that there is a real benefit to looking at individual types of conditions particularly when you are talking about clinical implications or implications for families and kids themselves. For these reasons we felt like it was important to capitalize on the strengths of the NSCH, which allowed us to produce both state specific estimates and also allowed us to look at individual types of mental health conditions.

I'm just going to go ahead and skip that but I just want to take a few minutes to tell you about some of the choices that we made and I'm more than happy to talk about these after the presentation. For these analyses we used three questions capturing parents' responses about whether or not a doctor or other healthcare provider had ever told them that their child had depression, anxiety problems or behavioral or conduct problems such as oppositional defiant disorder or conduct disorder. Treatment was similarly assessed using one question, which captured parents' responses to whether or not their child had received any treatment or counseling from a mental health

professional in the year prior to the survey. We also made a couple of decisions. We decided to limit our analyses to school aged kids. So, our analytic sample was just over 64,000. We chose to combine anxiety and depression in our analyses and we also chose to focus on kids who had ever been diagnosed whether then those who just had a current diagnosis.

That said we found that 7.8% of children ages 6-17 had ever been diagnosed with depression or anxiety and 4.7% had a current diagnosis. As you can see from the bulleted points, comorbidity was an issue for children with emotional conditions with about half of those diagnosed with one condition also having been diagnosed with another condition. And, you can see that there were a number of socio-demographic and health related factors that were significantly associated with having ever been diagnosed with depression or anxiety and these include being male, being older, being white or non-Hispanic multiracial, being poor, near poor or having publicly funded insurance, being in poor physical health or having a comorbid mental health condition and having a mom who was in for mental health herself.

Here you can see a state by state presentation of the observed or unadjusted prevalence of diagnosed depression or anxiety and just to orient you to the presentation, the states with the darker fill are those that have the highest prevalence while those in light fill have the lowest prevalence. Overall, we found that the prevalence ranged from a low of 4.8% in Georgia to a high of 14.4% in Vermont. When we look at the adjusted prevalence estimates we actually see a very similar picture. So, this

indicates that even after we controlled for factors that are known to be associated with children's mental health problems and their diagnosis of those problems. So that includes sex, age, race, ethnicity, type of insurance coverage, health status, household poverty level, maternal mental health status and a lifetime diagnosis of another co-morbid mental health condition. We really saw a very similar prevalence pattern and again the highest prevalence of diagnosed conditions in the northeast and the lowest in the southwest. Overall, our adjusted prevalence estimates ranged from a low of 5.2% in Texas to again over 12% in Vermont.

Our adjusted analyses also found that children in 18 states had higher odds of ever being diagnosed with either depression or anxiety and particularly those in New England, Montana, Ohio and Washington state and consistent with our bivariate results being older, having public insurance, being in poor physical or mental health and having a mother with poor mental health or also associated with higher odds of ever being diagnosed. We also found that just under 5½% of school aged children had ever been diagnosed with a behavioral or conduct related condition and 4% had a current diagnosis. Again comorbidity was an issue for these children but somewhat less so than for those who had depression or anxiety and the socio-demographic and health factors that were associated with behavioral diagnoses were similar to those for the emotional conditions with a few notable differences. In this case age was not significantly associated. The racial and ethnic profile was a little bit different too. Non-Hispanic blacks were actually more likely to have been diagnosed with these conditions. And finally, although poor physical and mental health certainly were associated with either

type of diagnosis, so either an emotional or a behavioral condition. The association was actually much stronger for kids with depression or anxiety.

In this slide we see the presentation of the observed prevalence estimates for behavioral conditions and if you think back to the very first map that I showed you, you'll note that this is almost the reverse of the picture that we saw for depression and anxiety. Overall, the observed prevalence ranged from a low of 3.2% in California to a high of 9.2% in Louisiana. Again, once we adjusted it a very similar situation where the prevalence pattern didn't change a lot even after we adjusted for all of these factors that we know to be associated with poor mental health and the prevalence once we adjusted ranged from 3.2% in Montana, in this case after adjustment actually the highest prevalence was seen in Arizona with 8%. That said, overall, we found very little statistically significant variation in the odds of diagnosis with children in only two states and that was Arizona and Pennsylvania having higher odds of ever being diagnosed with a behavioral or conduct disorder but consistent with our bivariate results we did see that being black, having publicly funded insurance, being in poor physical or mental health and having a mom in poor mental health were associated with higher odds of ever being diagnosed.

We investigated the prevalence of treatment in two ways. One, we looked at it for all kids and then we also looked at it for those children with particular diagnoses and so what I'm showing you here is for all children ages 6 to 17 regardless of whether or not they'd ever been diagnosed with a mental health condition. We found that nearly 10% of

all school aged children received some kind of mental health treatment or counseling in the year prior to the survey. We also found that the prevalence of treatment varied by state with about 6½% of kids in Texas receiving treatment and over 15% in Pennsylvania receiving treatment. When we limited our analyses to those kids whose parents said, yes, my child has ever been diagnosed with one of these mental health conditions, we found that about 55% had received past year treatment and when we further limited it to kids who had a current diagnosis we found that 62% had received past year treatment. So, certainly better than the overall population but definitely not what we would like to see for children who are experiencing mental health problems.

We also found that the prevalence of treatment varied by state of residence for kids with different types of diagnosis and so in this case I would really draw your attention to the second bullet down and here we see that nearly 80% of ever diagnosed kids with an oppositional defiant or conduct related disorder received some kind of treatment in Pennsylvania compared to less than a third in Louisiana.

Overall, we found that the treatment picture was very similar across states for kids who had depression or anxiety. So, children in only four states had higher odds of not receiving treatment if they'd ever been diagnosed with an emotional condition. These were kids in Idaho, Kentucky, Louisiana and Nevada. This was not the case for children with behavioral conditions where kids in 17 states have higher odds of not receiving treatment, not notably Louisiana, Oklahoma, Nevada, Mississippi, Illinois and Florida. We also found that being uninsured, not surprisingly was associated with higher odds of

not receiving treatment while having ever been diagnosed with another mental health condition or having a mom who said, yes my mental health is not that great, actually had a lower odds of not receiving treatment. So, in some ways those two factors were somewhat protective. I think the limitations of the survey are similar to what I think Michael referenced when he talked about the survey overall. What I would highlight here for this particular study is the fact that we were dependent on parent report. So, it was parent report for whether or not their child had ever been diagnosed and it's also parent report in terms of how they are categorizing their child receiving some kind of mental health treatment. We really didn't have access to variables that gave us any kind of indication of what that treatment was, what the setting was, what the duration was, so it's a limitation but I also think in some senses it's a very generous way of thinking about any treatment.

By way of summary, what I've done here is just restated our questions of interest and then the results that we found. I want to jump down to number three because I think that really is the takeaway message for this presentation at least and that is that there is significant state variation in the prevalence of diagnosed depression and anxiety and there is significant state variation in treatment received among children with behavioral or conduct related conditions. Just a last couple of points, as we were trying to make heads or tails of what does this mean and what do we do with this information, the first thing I want to say is that our estimates do represent a statistically significant change from the data that we had from the 2003 National Survey of Children's Health and it's possible that these are actual increases particularly from emotional conditions but it's

also possible this is reflecting a different way that parents and that healthcare providers are approaching these conditions and particularly I think for developmental conditions, if providers are doing a better job of screening they may be ruling out kids who they normally would say, oh your kid has conduct disorder when in fact they have another kind of disorder. So, these diagnoses don't occur in a vacuum and so it's important to remember that some of what we're seeing may reflect other kinds of systematic changes.

The second thing that we wanted to raise is in thinking about the state level differences in diagnosed emotional conditions, so depression and anxiety, we wanted to say that just because some states may have a high percentage of kids with parents reporting these diagnoses that may not necessarily be a bad thing. It may mean that some states are doing a very good job of identifying those kids, communicating with the parents about what the condition is and so we don't necessarily want to just throw these numbers up and say, "Ha, some states are doing worse than others," but there certainly is a context there and that needs to be taken into consideration.

Third, when we looked at the differences in treatment for behavioral conditions we did want to emphasize that we looked at that analyses just for those who were currently diagnosed and we found very similar patterns. So, it's not just a case of some kids who had a very early behavioral diagnosis and then their parents five years later saying, "No, my kid's aged out of that. They don't need treatment anymore." Really this is an issue

where kids even with current behavioral conditions are not getting treatment in some states.

Then finally, I wanted to close with the fourth bullet because I think it's really important to keep in mind that a sizeable minority of children in this country are not getting treatment even by our very generous way of measuring treatment and we think it's important that we're not just focus in on kids that have a current diagnosis but also given the fact that so many of these conditions are both comorbid and they are also reoccurring that it is important to think about treatment for all kids who may have at one point had a diagnosis or even are exhibiting symptoms and we just want to make sure that that sort of remains highlighted in people's minds because it is very important.

I want to thank my co-conspirators here Dr. Kogan and Jessica, as well as Dr. Blumberg and Dr. Paran and I did not print out copies of my presentation just in order to not kill a small rainforest but I'm more then happy to email it to anyone who is interested. Thank you.