

DataSpeak
Social Determinants of Maternal & Child Health
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Presentation

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Good afternoon. Welcome to today's program on the Social Determinants of Maternal and Child Health. My name is Dr. Michael Kogan and I'm the Director of the Office of Epidemiology, Policy and Evaluation at the Maternal and Child Health Bureau. Our DataSpeak Series is sponsored through the Office's Maternal and Child Health Information Resource Center. With us today are two distinguished scholars and researchers in the field of social determinants of health and health disparities.

The first is Dr. Paula Braveman. She is Professor of Family and Community Medicine and Director of the Center of Social Disparities in Health at the University of California, San Francisco. Dr. Braveman will begin the presentation by discussing several of the major social determinants of maternal and child health and the ways in which they influence health status.

Our second speaker is Dr. Wilhelmine Miller, Senior Fellow with NORC at the University of Chicago and a Professorial Lecturer in Health Policy at George Washington University. Dr. Miller will discuss non-clinical interventions for addressing social factors that negatively influence health. She will also consider the adequacy of current levels of social investment in the well being of low-income families with infants and young children.

Both of our presenters recently served with the Robert Wood Johnson Foundation's commission to build a healthier America and will discuss several outcomes and resources from that working group. Now, before we begin I'd like to introduce Gretchen Noonan, the moderator for today's program.

Gretchen Noonan – MCHIRC – DataSpeak Moderator

Thank you so much, Michael. First, I'd like to welcome our presenters and everyone who has joined us in the audience today. Thank you so much for being here. Before we begin the presentations I have some very brief technical guidance for everyone.

First, please know that your phone line will be muted during the presentations. At the completion of the program we'll be having a question and answer session and someone will come on at that time and provide instructions for how to ask questions over the telephone. If you'd like to post a question on-line during the program you can do so at any time. Just use the Questions box on the left side of your screen. Type the question into the box next to the arrow and hit Enter.

Second, I'd like to point out that you're able to download today's PowerPoint presentations directly from the screen that you're looking at right now. Click on the presentation at the left that you're interested in to highlight it. Click Save to My Computer and follow the instructions.

Finally, I would like to call your attention to the DataSpeak Website, which we hope you visit after today's program. There you'll find some resources on today's topics, including some that the speakers will highlight during their presentation. On the Website you'll also find archives of all of the DataSpeak programs going back to 2000. The slide on your screen shows some of those most recent programs that are available and the address you can use to access them.

Now I would like to turn to Dr. Paula Braveman. As Michael mentioned, she is Professor of Family and Community Medicine and Director of the Center on Social Disparities and Health at the University of California, San Francisco. Thank you for joining us, Paula.

Paula Braveman – University of CA – Professor of Family and Community Health

Thank you very much, Gretchen and Michael. It's a real pleasure to be participating in this today. I'm going to be talking about the social determinants of maternal and child health and determinants of health disparities. I'd like to start off by posing a question to you. Why is it that the United States for quite a while has consistently ranked at or near the bottom among all industrialized countries on the key indicators of health of population, such as life expectancy and infant mortality and yet we spend more than any other nation on the face of the earth on medical care?

It's not just that we rank poorly in relation to other countries. We also have very large disparities within our country and I'm showing a few of these here that most of you should be familiar with. Let me get the— The much higher rates of maternal mortality among African-American women, much higher rates of infant mortality among babies born to African-American women than to women of European-American background. I'm sure everyone on this call is familiar with these disparities and other disparities by race or ethnic group, but because public health data in the United States typically has been reported and often only collected by race or ethnic group, far fewer people, even people in the public health field, are aware of the significant health disparities that are there by socio-economic status or socio-economic position and the most frequently used markers of SES in the U.S. are income and education. Now I'd like to show you a few slides to give you some examples of that.

Here on this slide you see infant mortality according to the mother's educational attainment. In this set of bars and in the next two slides that I'm going to show you it will go from left to right. We'll be going from the most disadvantaged group, in this case people with less than 12 years of education, over to the most advantaged, here, those with 16 or more years. You see this pattern that's been described as a step-wise, incremental, gradient pattern in which health improves; in this case, infant mortality goes down as education increases, with greater education.

Now, this is also, see that step-wise gradient pattern in many, many indicators is also seen according to income. So here again in this set of bars where you see the prevalence of poor or only fair health among children as reported by parents, you see that according to the parents' income. The income here takes into account family size, so these are increments of the federal poverty level, the FPL and then going again from left to right, from the most disadvantaged to the most advantaged. Here, as on the slide that I just showed you a minute ago, what you see is not only a tremendous disparity between the extremes, the poorest and those most affluent in this, but you see again this step-wise incremental pattern and so even those with incomes, children and families with incomes between three and almost four times the federal poverty level that bar next to the last on the right, comparing them with those, with incomes over four times the federal poverty level you see a difference there.

Here, now what we've done, we're looking at the same indicator, poor or only fair child health as reported by the parent and here we've broken it down into the three largest racial or ethnic groups that we can look at here, so non-Latino, Black on the left, Latinos and then non-Latino Whites over on the right. What you see here is that that step-wise increment pattern certainly does not go away when you break down the population by race or ethnic group.

I'm showing you this to make a point. I think that, again, because we are used to seeing public health data reported by race or ethnic group and we're not so used to seeing it reported by socio-economic markers, often people when they do see information on socio-economic differences they think and they may or may not say, but what they're thinking is, "Oh, that's about race." This slide is to illustrate the point that it's not about race; that both race or ethnic differences and socio-economic differences are very important. I should show you a couple of examples of indicators, but our group has looked at over 40 different health indicators, indicators of health status, health related behaviors, children, adults and we

found that these step-wise, incremental, gradient patterns predominate, so they're not seen for every outcome, but they are seen for most outcomes.

So I think this raises the question then what influences health. We all know that medical care can influence health. Genetic makeup, I think the public is very aware of that. It's logical that the climate and the natural physical environment, whether you're in a tropical jungle or you're at the North Pole could influence your health. Then I think the public has become increasingly aware in the last few decades of the importance of health related behaviors, but what else is it that influences health and in addition to that, what influences those influences that people do commonly think of?

Now I just want to take you through some steps leading to poor health among adults and among children. Now, I showed you the last couple of graphic slides that I showed you were about poor to fair child health by family income. Now, just looking, all I showed you was associations and associations don't prove causality, but I think that the data in the graphics there, that those response relationships supports a pretty compelling body of evidence that is from studies, including studies that have dealt with causal inference in more sophisticated ways than merely looking at association. So there's a compelling body of evidence linking low income to poorer health.

I'm just going to quickly give you a whirlwind tour of social determinants 101, including looking at a few of the determinants and what I want to say is that for all of the links that I'm going to be talking about there is a body of literature supporting that. That doesn't mean that there's no debate about it or no disagreement. It doesn't mean that everyone who is an expert in the field would agree, but for each one these there is a convincing, credible body of evidence and a number of experts would agree.

How could income influence health? I'm going to pose it now, thinking about poor health for children, poor health for adults. If you have a low income you're less likely to be able to afford to rent or buy a home that will be healthy. What do I mean by that? I'm talking about the absence of dust and mites and molds, the kinds of allergens that can trigger asthma, for example, exposure to lead. A lower income makes it more difficult to purchase healthy food. Lower income means less ability to rent or buy a home in a health neighborhood. In a minute I'll say some more about what would be a healthy neighborhood. Tied to the unhealthy neighborhood is the issue of exercise. If you have a low income you can't afford to belong to a gym. You may have to work more jobs so that you have less time, less leisure time to exercise, but also, you're less likely to live in a kind of neighborhood that facilitates exercise. Again, this is not an exhaustive list of the ways in which income could lead to poor health, but it's a few of the major determinants on which we have some evidence now and in some cases, compelling evidence.

Another really important likely mediator of some of the effects of low income on health is stress. If you just think about lacking resources, having fewer resources to face the challenges that you have to face, say someone that develops problems with their childcare situation. Well, if you can afford to find an alternative you're in a very different situation than the person who can't.

Now, what is it though that gets us into the low income? It's what I would call a poor job. That's the main way that income comes to most of us. There is that small handful of people who have inherited wealth, but for most of us the income comes with the job and the low income is with the poorer job. What you also get with a poor job are poor working conditions, exposure to physical hazards, lack of health insurance, lack of sick leave and a factor that studies, particularly in the U.K., have concluded, a number of studies have concluded that the issue of lack of control at work could be a very important way in which socio-economic status could affect health.

Now, what is it then though that gets one a poor job? It's low educational attainment. How could low educational attainment in a parent lead to poor health in the child? Well, I've mentioned through the low income pathway that I've mentioned, but if you also think of that, the unhealthy neighborhood part of the pathway then increasing the likelihood that the child of that person is going to have suboptimal schools and that having a big impact on the likelihood of that child going on to have a high level of education

attainment, as well as educational quality. Now, in no case here am I saying that there is a 100% guarantee that these arrows go 100% of the time. These are all factors that raise the risks.

How could education affect health? I showed you that first slide linking infant mortality to mother's education level and again, I'm not saying that those associations prove the causality, but I'm relying on a very large body of other evidence that I think makes a very compelling case for how education could affect health. I think for most of you on this call, if you're from the field of public health, and probably even for most people in the public it's not surprising to think of education as influencing health, but the assumption is it does so primarily because if you're more educated then you know more about health, you're more literate and you have better health related behaviors.

But what this slide illustrates is that that's not the only way in which education could affect health. These other pathways that have not received so much attention may be the ways and I would suspect are more important ways through which education influences health. The middle pathway is the one that was illustrated to a certain extent in a simpler way in that last slide, so low educational attainment means a poorer kind of job and then poor working conditions, fewer work related resources, lower income and then those going through some of the additional factors that are mentioned here. Then the bottom part of this three-part box here would illustrate what I would say how education can lead to health, can affect health through more psycho-sociopath ways, that middle box, those are the material pathways, how education could affect health by affecting level of material advantage. The bottom box is how education could affect health through more psycho-sociopath ways, including that sense of control that I mentioned, how you see yourself standing in the social pecking order, the prestige that goes along with education and the social support, the greater social support that you may be able to get when your associates, who tend to be of similar educational level, have more resources and can potentially give you a leg up when you are in need, unlike a situation when one's associates are all people who have lower educational attainment and lower income.

How could a neighborhood affect health? There are some obvious ways with crime, not having safe or pleasant places to exercise, the toxic exposures, living in a food desert. But a neighborhood can also affect health by determining the sort of social networks and social support that people get. For children the exposure to role models and the peer pressure and then the levels of stress and fear and anxiety and despair that are there in a neighborhood that could have a significant effect on health. I think one factor that I've mentioned that has not received so much attention is how a neighborhood could affect the health of the next generation by affecting the quality of the schools.

Now, I've mentioned a few times; I've had on the list there that stress could affect health. Stress could be important. Is that biologically plausible? Well, we're in a very different situation now than we were 15 or 20 years ago because there has been an accumulation of knowledge that makes it highly biologically plausible that stress could affect health and could be one of the most important mediators of the effects of low income and potentially low educational level. How could that happen? We're exposed to a stressor that gets registered in one part of the brain, the hypothalamus, which then sends a hormonal signal to another part of the brain, the anterior pituitary and that, in turn, sends a signal to the adrenal glands and they pump out cortisol. Having an acute stress, an acutely high level of cortisol, does not appear to be so damaging physiologically, but chronically high levels of cortisol have been implicated in chronic disease, in suppressing immune function, in promoting inflammation and are thought to play a very significant role in the socioeconomic differences that we see in chronic disease and probably in premature aging.

So now, because we're focused on maternal and child health, what about stress in childhood? It is reasonable and there are data to show that being poor and having lower income is very often stressful. It's associated with more stresses and fewer resources to cope with the stresses. Stress during critical periods, such as early childhood and/or chronic stress in childhood could lead to ill health in adulthood through pathways that I just mentioned a minute ago through the neuro-endocrine pathways, effects on the immune system and inflammatory pathways and lead to adult, chronic disease. A number of us are thinking, a number of researchers are questioning whether chronic stress in childhood or stress during

critical periods in childhood could be part of the missing piece of the puzzle of racial and ethnic disparities in birth outcomes, like low birth weight and pre-term birth. Chronic stress can also lead to neuro-endocrine dysregulation that could have life-long effects, even if someone had a stressful childhood, goes on in their adulthood and they're in better circumstances, but potentially if their hypothalamic pituitary adrenal axis was dysregulated due to chronic stress in childhood their physiology may be that of a person who's chronically stressed. Another consideration that's important is that stress in childhood may be the most crucial, but the cumulative effects of stress over the lifetime, including stress during adulthood, also are likely to be very important.

What does all of this mean in terms of understanding racial and ethnic disparities and the determinants of racial and ethnic disparities in health? It's very important to keep in mind that even if you look at a study in which current income and educational level are being controlled for that on average, Whites have higher incomes at a given educational level and all of this is reflecting the legacy that we have of racial discrimination in the country and it operates even when there's no longer any intention to discriminate. So at a given income level Whites have far more wealth and they live in much better off, meaning healthier, neighborhoods. It's also true that at a given current income or educational level if you're comparing Whites with Blacks and Latinos, the Whites are likely to have had more advantaged childhoods and from what current knowledge tells us, current science tells us that all of these factors can influence health through multiple pathways and yet these are often not being taken into consideration. I think it's very important for us to remember that when we're looking at race often and we're looking at racial differences in health often that race or ethnicity variable is often capturing unmeasured socioeconomic factors, like the ones that I just mentioned, childhood experience, wealth, the quality of education, the neighborhood conditions so that race is capturing a lot of health damaging or health promoting social exposures, capturing a lot more stress, fewer resources to cope.

In addition to that there is for people of color the added stress of living in a society that has a legacy of discrimination and the stress that could be there even without overt incidence and even without intentional bias, but the structural discrimination that's built into institutions, even when the intent isn't there currently. Some of us believe that there may be a cost, a physiological cost of the pervasive vigilance that would be logical for someone to feel, anticipating the possibility of unfair treatment or unfair judgment, so when you're looking at racial and ethnic disparities, particularly in studies that haven't done a very thorough job of describing the socioeconomic conditions, I hope that you will think about these factors as being part of the potential explanation.

I started off by posing a question about why we spend more on medical care than anybody else and yet we perform so poorly internationally and we have such big disparities within the country. I also said at the beginning that if you ask most people about the modifiable factors that influence health, so forgetting about whether you live in the jungle or at the North Pole and forgetting about putting on hold the issue of genes, what people will say is it's medical care and then most people will also say it's personal behaviors. The focus, I think, in the health sector until now has been on trying to improve health with medical care and then more recently, trying to improve health by informing people of what are good health related behaviors and exhorting them to change their behaviors, so could it be that the reason that we rank so poorly internationally and that we have such large disparities, could it be that we're not looking at what it is that shapes personal behaviors, what it is that makes it easier for some people to behave better and harder for other people, what it is that determines who does and doesn't get medical care and of what quality. If you look at this arch that I'm showing in this diagram, you also see that arch directly touching the bar that represents health and that's to remind us that living and working conditions in homes and communities cannot just affect health by shaping personal behavior and medical care, but they may shape health directly, for example, through pathways involving toxic exposures and/or stress.

Then beyond that, what is it that sorts some people into healthy and other people into unhealthy living and working conditions by characteristic, such as income and education or race and ethnic group? It's what we have termed the underlying economic and social opportunities and resources to which people have access, generally, in virtue of the advantages of the family into which we are born.

This here, this again and the last graphic and other material that I've shown you have come from the work of the Robert Wood Johnson Foundation commission to build a healthier America. I should clarify both Wilhelmine and I were staff for the commission. I was the Research Director and she was the Deputy Executive Director or Staff Director. This right here that you're looking at, these rings, attempting to focus us on how social advantage and health can be transmitted not just at a given stage of life of someone where the social and economic opportunities shape the living and working conditions and then that shapes health at a given stage of life, but the social and economic opportunities from the field of sociology and economics, they well demonstrated how social and economic opportunities in one stage of life lead to that they have a big impact on shaping those conditions in the next period of life, but that the social and economic conditions then say in childhood here ultimately can have a big role in determining what the social and economic conditions are of family headed by the adult, who comes from that, who is the product of that childhood and then that family is the context for raising the next generation. Wilhelmine is going to be talking with you; she is going to be focusing on solutions. I've been focusing on problems, but I think the body of evidence that we have right now about the social determinants of health tells us that we need to be paying more attention not just to how social advantage influences health at a given time in our lives, but how social advantage and health are transmitted across lifetimes and generations, so with that I will turn it over to Wilhelmine.

Wilhelmine Miller – University of Chicago – Senior Fellow, NORC

Thank you, Paula.

Gretchen Noonan – MCHIRC – DataSpeak Moderator

I'm sorry, Wilhelmine. Go ahead. I was just going to give a little segue there. Thank you, Paula. I just want to remind the audience—I'm sorry, Wilhelmine—that if you do have a question for Dr. Braveman you can submit it at any time on-line in the Question and Answer Box on the left side of your screen. I will be turning it over now to Dr. Wilhelmine Miller, who, as Dr. Kogan mentioned, is a Senior Fellow with NORC at the University of Chicago and she is also Professorial Lecturer in Health Policy at George Washington University. I'm sorry. Go ahead, Wilhelmine. Thank you for joining us.

Wilhelmine Miller – University of Chicago – Senior Fellow, NORC

Thank you very much, Gretchen. By way of overview, I'll quickly recap some of the risks to healthy child development that Dr. Braveman discussed and review key non-clinical services that have been found to improve health and development among children at greater than average risk. Then I'll look at the level of our nation's investments in some of these services in relation to the demand or need for them and finally, discuss efforts to provide preventive and remedial developmental services more effectively.

As we focus on these issues I'd like us to keep in mind the definition of child health offered by a recent IOM committee, the Institute of Medicine. The committee was charged with making recommendations about child health assessment and tracking progress towards child-health goals. They characterize child health as the extent to which individual children or groups of children are able or enabled to develop and realize their potential, satisfy their needs and develop the capacities that allow them to interact successfully with their biological, physical and social environments. Construing health broadly in terms of what children are able to do now and throughout their lives is a good starting point for looking at social factors and non-clinical early life interventions, I think.

As Dr. Braveman has shown, economic and social disadvantage in childhood can impair health well into adulthood. Often we tend to overlook just how prevalent economic disadvantage is among American children. Thirty-one million of the almost 75 million children under the age of 18 in this country live in families with incomes less than 200% of the federal poverty level and almost 10 million of these low-income children are under age 5. The federal poverty level for a family of three is now set at an annual income of just over \$18,000. Many poverty and child welfare researchers argue, and I agree, that 200% of the poverty standard, about \$36,600 for a family of 3 serves as a better benchmark of the minimum resources needed for basic household expenses than the poverty level itself.

Threats to children's healthy development often coincide. Let's look at a particular set of risk factors for children's development: Poverty. Living with a single parent. A parent's low level of education. Large family size. Inability to buy or own a home. In a recent study two-thirds of children were found to experience none or just one of these conditions, yet 7% experienced four or all five of them. Risks are concentrated for a significant number of American children.

Now, while you might expect to find a correspondence between, say, a family's low income and their living in an unsafe neighborhood and Paula pointed out many other correlations, some risk correlations are less obvious. For example, as this slide shows, a parent's risk of depression is correlated with their educational attainment and parental depression elevates the child's risk of health, developmental and behavior problems. A parent without a high school diploma is eight times more likely to report two or more symptoms of depression than is a college educated parent and while 1 in 11 infants overall will be exposed to their mother's major depression during the first year of their life, a fairly prevalent risk, that risk correlates with socio-economic disadvantage.

Now let's switch gears and look at some interventions. Because we're focusing on social determinants of health I'm going to set aside the extremely important set of preventive and primary care services that pregnant women, infants and young children should receive in primary care settings and consider family and community based interventions. Despite the strong body of evidence that Dr. Braveman presented, which links health disparities to early life socio-economic conditions, initiatives to make larger investments in child welfare and spending on social programs that could improve children's development and health trajectories are rare in national policy discussions about health or in public budgeting for health.

Family supports for pregnant women, new parents, infants and young children can take many forms. These include home visiting programs and parenting education and training. Home visitors can be nurses, social workers, counselors or trained non-professionals. A number of models have been associated with improved parenting, attitudes and behaviors, children's socio-emotional and cognitive development and with a lower risk of child maltreatment. Parents receiving home visiting services are more likely to continue their own education. Programs that last longer than one year and in which the family receives at least four visits per month have shown the most consistently positive results.

The best known and studied home visiting program, the Nurse/Family Partnership, has had several evaluations with up to 19 years of follow-up. The program has been most effective for first time mothers with multiple risk factors. Participating moms are more likely to be employed and have fewer subsequent births and their children are less likely in adolescence to run away from home, have fewer sexual partners and consume less alcohol. The Partnership reports average per family operating costs of \$4,500 a year, although effective programs are typically more intensive and therefore costly, on average home visiting yields a savings of over \$2 for every dollar spent and highly targeted programs yield even higher rates of return.

More than a dozen state Medicaid programs have begun to pay for home visitation services, either as a covered benefit or as an administrative or case management cost. The new Affordable Care Act Health Reform authorizes \$1.5 billion to be spent over five fiscal years beginning with 2010 for grants to states for home visiting services.

All young families can benefit from reliable information about child care and development programs and understanding of developmental stages and milestones and opportunities for informal or structured social and peer interactions with other families. Such information can be particularly hard to come by for economically disadvantaged and socially isolated parents. Models for parent education and training that operate at multiple levels allow for targeting services based on family risk. One well evaluated example of such a multi-tiered model is the PPP (Positive Parenting Program), which has a community wide social marketing component, as well as offering parenting classes and individual family counseling for families, whose children are at successively greater risk of neglect or maltreatment.

Comprehensive early childhood development programs have a track record of over 40 years with high quality programs posting cognitive gains and better academic achievement for preschoolers in the short-term and lower rates of delinquency and duress later in adolescence for those low income and at risk infants, toddlers and preschoolers served by them. The earliest models of comprehensive child development programs, such as the Carolina ... Project and the Federal Head Start Program incorporate health related components, such as developmental assessments, immunizations, dental care, high quality nutrition and adequate physical activity along with facilitating parental engagement and education and nurturing parenting. In reality though, most childcare settings in many early education programs lack the resources and staffing to provide all of the components of model programs, nor do they link to healthcare services, as is required of Head Start.

In-depth analysis of long-term outcomes among participants in the Perry Preschool Project, one of the longest and most extensively studied programs by Economist Jim Heckman, has yielded insights into how and over what time period early childhood programs achieve their effects. For example, while cognitive benefits surface in the initial school years and then may appear to fade out, do fade out, participants' relative advantages in terms of non-cognitive traits, such as conscientiousness and persistence, appear later and take the form of higher rates of high school completion and employment success among participants in the program. High quality developmental programs require more resources than are typically available in child care settings and very importantly, disadvantaged children are far more likely to be in child care than in Head Start.

Child care services present one of the largest, the greatest, largely unrealized opportunities for positively affecting the health and development of infants and children, particularly those in low income families. More than half of all low-income children under age five are in non-parental care, which includes care by relatives, for more than 30 hours every week. Of the 5.6 million children under age 3 living in low-income families, just 91,000 of them are served by Early Head Start or, in a few cases, Head Start and another 480,000 benefit from federal subsidies through the Childcare and Development Block Grant, also called CCDBG. Thus, just one in ten infants and toddlers in economically disadvantaged families receive federal financial support for these developmental and care services. State provider payments under CCDBG have declined relative to market rates. This year just six states paid for daycare at rates equivalent to the 75th percentile of going market rates. In 2001 22 states had been paying providers at this market level.

Although more than 12 million American children under age six are in a childcare setting weekly, either home-based, family daycare or in a center, the number of legally operating childcare spaces available are a million fewer than that number and these 11 million authorized spaces also serve children of school age in addition to preschoolers and toddlers.

In 2008 the annual average cost for center-based care for an infant ranged from \$4,600 to almost \$16,000 across the states and from \$4,000 to \$11,700 for a four-year old. In every region of the country the average cost of infant care is higher than average family food expenditures locally and in every state the cost of care for two children of any age was in the range of average mortgage payments and higher than median rents. Poor families spend about a third of their income on childcare, while families with incomes above 200% of the federal poverty level spend about 7%.

Childcare programs frequently do not meet minimum standards of safety and quality. At the core of the issue is our society's under investment in the childcare enterprise. Recruiting and retaining a skilled and stable early childhood workforce is integral to high quality care and developmental services for young children. Training and education requirements for childcare workers vary widely across the states, ranging from a high school diploma or completion of community college coursework to a college degree; yet, 21 states have no minimum education requirements, not even a high school diploma for teachers in child care centers.

Poor compensation contributes to high turnover rates in childcare and to less well trained personnel coming into the field. In 2008 the median annual wages of childcare workers were \$17,440. Their average earnings of a little over \$11 an hour amounted to just two-thirds of the private industry average wage for non-supervisory workers.

The Teach Early Childhood Project an initiative of the National Child Care Services Association that operates in 21 states, offers scholarships to child care providers to partially cover the cost of tuition, books, relief time and travel expenses for training. Scholarships are funded by a combination of public, employer and foundation support and that includes the quality improvement set aside of the federal child care development and block grant. Teach Scholarships help address the issue of under education, poor compensation and high turnover in the field.

The Child Care Services Association also offers a model and technical support for state and local agencies to increase financial incentives for their child care workforce. The Association's wages strategy is offered in three states, North Carolina, Florida and Kansas. In North Carolina wages provide salary supplements directly to low-wage teachers, directors and family child care providers working with children up to age five. As with the Teach Program, participants and wages have lower annual turnover rates on the order of 9% to 15% as compared with the national average turnover rate of about 30% among child care workers.

The American Recovery and Reinvestment Act of 2009 increased federal spending on young children through one-time supplementary appropriations to programs such as Early Head Start, Head Start, CCDBG and WIC. In the case of CCDBG that's essentially doubled the program's funding between 2008 and 2009 from \$2 billion to just over \$4 billion. Whether the increased funding level supporting additional child care slots in the states will be maintained in fiscal year 2011 and beyond is uncertain, although Congressional action to date suggests that it will be a bit closer to current yearly spending levels than previous to ARRA.

CCDBG has been due for re-authorization since 2001 and this is a critical issue because updating and upgrading child care quality and performance standards depend on amending the law in the program's re-authorization. It cannot be done simply administratively.

Last, I'd like to touch on the role of resource supplementation in child well being, a topic which Dr. Braveman covered very well in her presentation. Interventions that raise a family's purchasing power through cash or in kind supplements for food, housing expenses, medical services and child care are associated with better child health, development and academic achievement.

WIC, the national school lunch and breakfast programs and the low income home energy assistance program, or LIHEAP, not only reduce family financial burdens, but are also positively related to better child health outcomes. In both the U.S. and international settings income supplements for impoverished families have been found to have positive effects on children's health and development.

In 2009 the federal Earned Income Tax Credit for low and middle-income working families with children and for working poor individuals without children listed an estimated 6.6 million people out of poverty. Half of those were children.

One ongoing experiment to watch closely is Opportunity New York City Family Rewards, a privately funded, experimental, conditional cash transfer program in six high poverty New York City communities. Starting in 2007 the three-year program makes cash assistance available conditional on student's school performance, use of preventive healthcare and parent's work and training. The program is modeled on Mexico's 15-year-old Progres-a-Oportunidades Program, which provides cash transfers directly to poor families in exchange for participating in preventive health and nutrition programs and incentives for school attendance. Participation in the Mexican program has been associated with a decrease in maternal and

infant mortality rates, improved health, motor development and nutrition for young children and reduced smoking and drinking among adolescents.

Findings from the first two years of New York's program were released earlier this year. Evaluators reported that nearly all of the 2,400 families in the intervention group earned rewards, more than \$6,000 on average over two years. Effects from Family Rewards included reductions in poverty and hardship, increased savings and the likelihood that parents would have bank accounts, increased school attendance, course credits, grade advancement, reduced reliance on hospital emergency rooms for routine care and increased receipt of preventive dental services.

Although integration of children services and policy is far from realized at this time, a number of recent efforts suggest that policy makers increasingly recognize the need for a more comprehensive and coordinated approach. At both the federal and state level cabinet secretaries, governors and agency staff have begun to build the organizational scaffolding that will allow for standard setting, data sharing referrals and potentially service delivery across programmatic boundaries.

As I'm sure most listeners know, since 2003 the MCH Bureau has provided small grants to states through the Early Childhood Comprehensive Systems Initiative to plan and implement collaborations in early childhood service systems. States must address five domains in their programs, access comprehensive pediatric services in medical homes, socio-emotional development of young children, early care and education and parenting, education and family support. Although its route to enactment at this point is uncertain, the Administration's proposed Early Learning Challenge Fund would provide an additional impetus to the move to connect distinct service systems to better meet young families' needs. If adopted as proposed the Fund would provide competitive grants to states, up to \$10 billion over ten years, to improve standards for and raise the quality of child care and early learning programs. The Fund would be jointly administered by the Secretaries of Education and HHS.

A number of state efforts to rationalize the provision of services are noteworthy. In North Carolina, for example, the Smart Start Program provides financial means and policy research and development support to integrate services at the local level through early childhood development councils. Over the past decade the National Academy for State Health Policy has administered the commonwealth funds, assuring better child health and development or ABCD initiative, to improve developmental services and linkages between primary care and other service providers for low-income children. In its current and third phase, ABCD is challenging five states to make systemic changes to coordinate services for children with identified developmental problems and establish referral networks that cross health, social, educational and psychological services.

While many states and communities have the building blocks for more effective systems to support healthy child development, overcoming the daunting challenges to improve children's experiences, both at home and in care settings, will require elevating healthy child development as a national priority. Our investment in the well being of economically disadvantaged young children now falls far short of the level of commitment needed to underwrite their healthy futures.

With that I thank you and turn you back to Gretchen.

Gretchen Noonan – MCHIRC – DataSpeak Moderator

Thank you so much, Wilhelmine. You and Paula really provided some excellent information today. We do have some questions coming in. I want to apologize that we don't have the full 15 minutes for question and answer today, but just be assured if you do send in a question to us we will have the presenters give us a written answer and we will post those on the DataSpeak Website, along with the archive.

As I mentioned at the beginning, we will be taking questions on-line. On the left side of your screen is the Question and Answer Box. You can go ahead and submit questions that way. We've gotten a few already, so I'll get started.

The first one is for Paula. Paula, I know you can only remain for a few more minutes, but someone wanted to know are living and working conditions in homes and communities in several of the countries that you mentioned at the beginning that rank higher than the U.S., whether the conditions there are worse and if so, how that accounts for better outcomes in those countries. I don't know if you have any information about that.

Paula Braveman – University of CA – Professor of Family and Community Health

Yes. That's a good question. I think that there is general agreement that in the countries that do better than us there are lower inequalities in the living and working conditions, so it's not to say that people as a whole have better working conditions, but the size of the gap is smaller and that there are generally better safety nets that catch people so that they don't go, they don't fall off further, so that you can't fall as far as you can fall in the United States. I don't think anybody has an easy, just a pat answer to your question and there are some countries where it doesn't quite fit what the hypothesis is, but I think that that's the most prevalent view.

Gretchen Noonan – MCHIRC – DataSpeak Moderator

Wilhelmine, did you have anything you wanted to add to that or should we go on to the next question?

Wilhelmine Miller – University of Chicago – Senior Fellow, NORC

No, why don't you go on?

Gretchen Noonan – MCHIRC – DataSpeak Moderator

We had another question come in that said while the socio-economic status related risks to healthy development are well documented among low socio-economic status African-American women there are healthy births, so this audience member wanted to know if there is any published research on what the protective factors are among low socio-economic status African-American women. I don't know if either of you can address that.

Paula Braveman – University of CA – Professor of Family and Community Health

That is also a great question and I think that there's a lot of agreement now that researchers and probably also public health practitioners, that we've all been a little too focused always on the adverse outcome and that we do need more research on resilience and what promotes resilience. It is true that most African-American women have good birth outcomes. It's just that the rate of adverse outcomes is so much higher than that of European-American women and that that indicates to us that we need to look for the causes of that.

In terms of factors that seem to determine resilience, I think that one of the recurring themes in that literature is people, who had someone really there for them when they were growing up so that the early childhood psycho-social conditions are thought to be very, very important. Social support, social networks; those are some of the factors and the presence of a safety net, because that's one of the big functions of social support, right? Especially in a nation that has fewer safety nets. So I think all of those are important in resilience and we do need to look more at that.

Gretchen Noonan – MCHIRC – DataSpeak Moderator

Excellent, thank you. Dr. Braveman, I know you need to leave us now, so I just want to thank you for joining us. For everyone else, we will be staying on for just another one or two questions for Dr. Miller and then we'll adjourn.

Dr. Miller, we did have a few questions for you. Several people asked you to reiterate what the grant was for home visitation programs, if you had any more information about that.

Wilhelmine Miller – University of Chicago – Senior Fellow, NORC

Yes. The Patient Protection and Affordable Care Act, the health reform bill that passed earlier this year, includes a provision on authorizing home visiting services over a five-year period. Now, the grants to states in the first year, fiscal year 2010, which is actually just ended, but I believe these applications are still coming in, is for planning and proposing a system of services for home visiting, whether it be using nurses or some other evidence based program model, like the Nurse/Family Partnership.

It also allows for some of the funding to be spent by states on more innovative and perhaps home visitation programs with less of a track record, but for which there's some good reason to believe they are likely to be effective. These programs are to be targeted to high risk families and pregnant women, so largely low income or socially isolated or at some risk for child unhealthy development. So there is some leeway for states to design their own programs. There is a strong commitment that these programs be evidence based. The first year funding is a little less than the average after because it's a planning year. Then over four years I believe funding in each year is roughly over \$300 million across the 50 states.

Gretchen Noonan – MCHIRC – DataSpeak Moderator

While we're on this topic, actually, we had another question come in about whether you have a source for the data about home visiting costs, that is that more than \$2 are saved for every dollar spent.

Wilhelmine Miller – University of Chicago – Senior Fellow, NORC

Actually, yes, and those are in the resources that you will be posting.

Gretchen Noonan – MCHIRC – DataSpeak Moderator

I'm sorry to have asked you this.

Wilhelmine Miller – University of Chicago – Senior Fellow, NORC

No. I can actually send in the citation and respond better, but these are well known sources. I think RAND has produced a document on effective what works, effective social programs and that's one of the sources, but I can get that later.

Gretchen Noonan – MCHIRC – DataSpeak Moderator

I do want to let everyone know those will be posted very shortly to the DataSpeak Website, so you can take a look at them. I think we have time for one last question and then we'll go ahead and adjourn.

One of our audience members wanted to know if you happen to know where more information can be found about the New York City Family Rewards Program and the program that you talked about that took place in Mexico.

Wilhelmine Miller – University of Chicago – Senior Fellow, NORC

Yes. The citation for the New York City Program is actually on the slide. I believe it's among the resources that you will be posting. The Progresas-Oportunidades Program, I think if you were to Google that you would find the source. It's also referenced in one of the overview articles that are part of the resources posted. I'll be happy to give that to you directly so you can include it in written form.

Gretchen Noonan – MCHIRC – DataSpeak Moderator

Great. We will do that. Thank you so much. I'm afraid that is all of the time we have for discussion today, but as I mentioned, if you sent in a question and we do have several really good questions remaining that we didn't get to, we will have the presenters provide a written answer to you and we'll post those to the DataSpeak Website along with the archive. When we release the archive of the program you will receive an e-mail to let you know that it's available. If you think of any other questions in the next few days, feel free to send them to us. You can e-mail them to MCHIRC@Altarum.org. I believe the address was on the previous slide there.

Before you go, we would like you to know that we will be broadcasting several more DataSpeak programs in the next few months and announcements about those programs will be sent out via e-mail to everyone who registered for today's program. We'll also post announcements to the DataSpeak Website.

Finally, before you log out we'd really appreciate if you took a moment to provide us with feedback on today's program. You can do so by clicking on the program Evaluation Link on your screen as you see it right there, and the short survey will pop up in a new window.

Today's program is now complete. We thank you for joining us and hope you all have a great afternoon.