

DPPSWH August 2004 Webcast

Racial and Ethnic Disparities in Birth Outcomes: A New Perspective

GAIL DAVIS: Before I introduce our speaker I want to share with you instructions on viewing the webcast. The slides will appear in the central window and will advance automatically. The slide changes are synchronized with the speaker's presentation. You don't need to do anything to advance the slides. You may need to adjust the timing of the slide changes to match the audio by using the slide delay control at the top of the messaging window. We encourage you to ask the speaker questions at any time during the presentation. Simply type your question in the white message window on the right side of the interface. Select question for speaker from the drop down menu and hit send. Please include your state or organization in your message so that we know where you are participating. The questions will be relayed to the speaker periodically throughout the broadcast. We encourage you to submit questions at any time during the broadcast and all questions will be answered at the end of the presentation.

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have with us Dr. Michael Lu. Dr. Lu is an assistant professor of obstetrics and gynecology at UCLA School of Medicine and is at the Department of Health sciences in the UCLA in public health. An MD from UCSF. I don't think there any degree left to receive. He received residency training at UC Irvine. His research focuses on racial ethnic disparities in birth outcomes. He is conducting a multi-center community based study on child health studies.

He's on the county wide collaborative to develop a plan for improving birth outcomes. He is developing performance monitoring for the quality of maternal healthcare in California and the association director of the MCHB funded leadership training program at the UCLA School of Public Health for the centers of healthier children, families and communities. He received the 2003 national MCH epidemiology young professional achievement award. Without further adieu, Dr. Michael Lu.

MICHAEL LU: Thank you very much, Gail. Next slide, please. 28 years ago the nation was founded on the truth that all men and women are created equal. 228 years later in the nation that truth is still not quite self-evident. How are you created equal if you can't get an equal starts? On the steps of the Lincoln Memorial Dr. Martin Luther King junior said a dream he had. That black boys and little girls would be able to join hands with white boys and girls and walk together with sisters and brothers. All too many little black boys and black girls die even before they learn how to walk with their white sisters and brothers. Next slide. I want to thank you for tuning in to join in on this discussion on a very important problem. A problem that has really plagued this nation's health physically,

morally even before we were a nation and one that continues to be one of the greatest challenges to public health in the 21st century. Talking about the problem of racial/ethnic disparities in birth outcomes. There is a major goal of eliminating that over the decade and nowhere are the disparities more persisting and more disgraceful than in birth outcomes. Next slide.

An African-American born today is twice as likely to die within the first year of life. Twice as likely to be born low birth weight. Three times as likely to be born very low birth weight. Twice as likely to be born pre-term. Nearly three times as likely to be born very pre-term. And as you can see, these disparities really aren't going away not for infant mortality, not for low birth weight and not for pre-term births. Although today I want to focus on black/white differences I don't want you to think this is a black and whitish -- white issue. There are disparities among all nationalities in low birth weight, preterm births and even within ethnic group there are great differences. Infant mortality is about 70% higher among Puerto Rican Americans than Cuban Americans. Here you see pre-term birth is 60% higher among Filipino Americans than it is among Chinese Americans. Next slide. There are also great differences in the causes of infant death where as -- pre-term is the leading cause of death among white Americans. Low birth weight is the leading cause of death among African-Americans.

We'll try to address the question of why, why do you think that black babies have twice the chance of dying within the first year of life? Twice the chance of being low birth weight and pre-term. Three times the chance of being born very low birth weight and very pre-

term and how do they compare to white babies? Next slide. Since we're talking about racial and ethnic disparities let's start with race. Do you think that the disparities are due to some sort of inherent biological genetic differences between the races? Probably not. That's because we know that race is really much more of a social than it is a biological concept. What we've been learning the last decade from the human genome project is that genetic diversity appears to be a continuum with no clear breaks delineating racial groups. We know today American Blacks and American whites share 99.99% of their human genome in common. Whatever variations there are don't fall into the easy racial categories. There are certain genetic diseases which are racial pre-dispositions. Sickle cell, cystic fibrosis.

Many of the birth outcomes that contribute to the low birth weight have no clear genetic basis. There is no genetic basis until very recently some low birth weight genes have been discovered. Now, what is interesting about these studies that simply having these genes doesn't confer a higher risk for it. It takes the bad genes as well as bad environmental conditions to confer that high risk. And so that's really confirming that we've been learning in the last few years about that gene environment interaction, to take certain environments for certain gene expressions. Genetics have anything to do with any of this? You would expect that women of the same racial descent should have comparable birth outcomes. We see that's not true. You see Mexican Americans born in Mexico do much better than those born in the United States. Foreign born black women than U.S. born black women. Infant mortality is 1/3 lower among Hong Kong women as

women of the same race in the U.S. It would argue against a purely genetic -- you would think that women of the same racial descent should have comparable birth outcomes.

How many of you think that the disparities are due to some sort of racial difference of the maternal behavior? One would think of a bad behavior that lead to poor birth outcomes. Cigarette smoking comes to mind immediately. On the population basis cigarette smoking is responsible for about 10% of pre-term birth and 25% of intrauterine growth restriction. Next slide. What if I tell you that more white women reported smoking cigarettes during pregnancy than African-American women? Or that African-American women who didn't smoke still had high infant mortality rates than women who did? Now, I don't want you to get the wrong message. Not that smoking doesn't matter, it doesn't explain away the magnitude of the disparities that we see. How many of you think that the disparities are the consequence of the different utilization of pre-natal care? It's a popular concept. It has shaped our national policy over the last several years. Women of color are less likely to start pre-natal care early. They're also less likely to get adequate pre-natal care.

At least some studies, though not all, show the relationship between pre-natal care and improved birth outcomes so we can talk more about that a little later on. If that's true, this is a little harder to explain, right? Despite comparable levels of pre-natal care we see Hispanic women do much better in their outcomes than African-American women.

African-American women who start prenatal care in the first trimester have more infant mortality rates than white women. Or white women who start pre-natal care after the first trimester or had no pre-natal care at all. Next slide. Economic status. How many of you

think that this has to do with socio-economic status? This is a very popular explanation. So popular that some people would say they're talking about racial/ethnic disparities we should be talking about socio-economic matters in terms of either household income, occupational status, housing conditions and so forth. But then again this is harder to explain, right? As a group African-American women are actually better educated than Hispanic women and yet they have much higher infant mortality rates. Next slide.

African-American women with more than 16 years of schooling still have a high infant mortality rate than white women with less than nine years of school. I want to pause and think about this for a second. We're talking about African-American women who graduate from college, who have gone on to graduate schools, medical school, law schools, business schools, M.D.'s, J.D.'s, MBA's we're talking about African-American doctors, lawyers, business executive and they still have a higher infant mortality rate than women who never went to high school in the first place. Here you saw similar data that basically showed that non-poor African-American women have infant mortality rates than poor white women. Virtually all the studies that looked at socio-economic status through educational status still find the black/white difference in birth outcomes that is not explained by their background, socio-economic characteristics. Stress. How many of you think stress has anything to do with it? Certainly you have accumulating data that stress causes a role in low term and pre-term birth rate. It releases hormones and one of the most important being CRH and could initiate the cascade leading to pre-term labor.

There you see that women who deliver pre-term actually have a higher level of this stress hormone than women that deliver at term and you can see the difference as early as the second trimester. The question then is do you think African-American women are more stressed out during pregnancy than white women are? Actually there are some national data to show that's true. But let's assume they are. What do pregnant women get stressed out about? This is a partial list of stressors in women's lives. Let's examine them to see whether they help to explain the disparity. Let's start with work. We know that work that requires prolonged standing, heavy lifting, shift work, cumulative fatigue are associated with poor birth outcomes. Do you think African-American women on average are more likely to work in jobs that require longstanding, heavy lifting shift work and cumulative fatigue? That's just physical stress. What about psychological stress? We've known for a long time that psychological stress could be bad for your health. Look at the studies among bus drivers.

They're probably some of the most stressed out people on the face of the planet because they have so little control over their schedule. Psychological terms we talked about control of destiny. And studies have shown that because of such low control destiny bus drivers have higher levels of these stress hormones and higher heart disease and high blood pressure. Do you think African-American women on average are more or less likely to work in jobs where they're more likely to have a loss of control that is external or low control? What about relationships? We know that relationships, that psycho social support that is important for birth outcomes. We don't know whether African-American are more or less supported during pregnancy than white women are. African-American

women are more likely to be the head of a single parent household. The absence of a father is the norm rather than the exception in an African-American household. Do you think this has anything to do with stress? What about abuse? We know that on the average somewhere about 4% to 8% of women are beaten up at some point during their pregnancy.

When the studies are done better with multiple questions over the course of pregnancy as many as 20%, as many as one out of five women are being abused during pregnancy by their partners. The studies are fairly inconsistent whether African-American are more or less likely to be victims of domestic violence than other women are. Racism. You think racism has anything to do with this? Certainly known for a long time now that racism is bad for your health and healthcare and surprising to me it wasn't until a couple years ago that the first study on racism and birth outcomes was published. In a very small study found that women who deliver very low birth weight baby were significantly more likely to experience racial discrimination during pregnancy than women who deliver normal birth weight babies. They're what we call -- they found that the experience of racial discrimination during pregnancy increased your likelihood of having a very low birth weight baby by 3%. Next slide, please. Do you think culture has anything to do with it? Here is an interesting study looking at Mexican American women living in the United States. I'm sorry, go back.

Basically they compare these Mexican American women based on cultural orientation. They ask them questions like whether you prefer to speak Spanish at home or English at

home and whether you identify yourself more as Mexicans or more as Americans. Guess which group of women have better birth outcomes? The ones with the traditional mex call cultural orientation. Why is that? We're not quite sure about that. Maybe it's the family support, maybe it's more positive attitudes and behavior around pregnancy. So maybe there is something in the traditional Mexican culture that protect them against stress that can lead to poor birth outcomes. These protective cultural factors become loss when they become more Americanized. Mexican American women who live in the United States for more than five years they lose the birth advantages. There is something about living in the United States that takes away those traditional birth advantages. We can argue that perhaps the same protective factors are also lost from the African-American culture so they no longer protect the population, particularly the most vulnerable.

Argue while it's true that other racial U.S. ethnic minorities have suffered economic and social discrimination few have faced these exposures for as long as have African-Americans nor have they faced them standing on an cultural and economic base that was undermined by larger society. At this point I tell you don't think I'm saying everything has gone wrong with the African-American culture or everything is bad about the African-American community. That's what the community hates about us researchers. In order to explain the disparities we go in and look at all the things that have gone wrong without looking at things going right. I think every day there are very positive things going on. Things such as resiliency which we researchers largely overlook. If we want to do better research around disparities we have to look at not only the disadvantages but the strengths and assets that the community offers. Do you think infection plays a role in

causing disparities? It's generally accumulating data that infection may play a very important role in causing pre-term births.

Some expert would say 80% are caused by infection. Urinary tract infections, sexually transmitted infections, bacterial vag INOSIS and peridon'tal infections. I usually tell my students don't just look at the -- they want to identify the pathogens. Think of the infection as a relationship between the host, parasite and environment. We know there are certain host factors that increase risk for infection, factors like overall health, smoking, nutrition or even stress can affect your immune functions and therefore increase your susceptibility for inspection. We also know in public health for over 100 years now that environmental conditions can increase your risk for infection. Sanitation, overcrowding and poverty which then increases your vulnerability for infection and therefore your susceptibility for pre-term birth. We know African-American are more prone to certain types of infection during pregnancy but we don't know whether there are some host factors or environmental factors that pre-dispose them to get infections and increase their vulnerability to pre-term labor. Next slide, please.

If you were to put these two pathways together to low birth weight and infant mortality, all things considered that the way to prevent these poor birth outcomes may not be so simple after all. Now you have to work on host factors and en vironmental factors and socio-economic, and work on all the underlying causes in what in public health we call the multiple determinant of health. If that's true, if birth outcome is the problem is not one single risk factor but multiple factors why did we go through the whole exercise where we

look at one single risk factor at a time? Why don't we look at all of them to see how they do when it comes to disparity? That study is actually being done. A study published in the American Journal of Public Health several years ago talked to thousands of women and asked all these questions about the demographic characteristics. Psychological risk factors, social risk factors like racial discrimination. Exposures to smoking. They even came up with a few of their own newly defined ones. Maternal adversity. Guess what? They still found the black/white difference in birth weight.

MICHAEL LU: Are we back on? This is actually a perfect break. I was giving you all these things to think about. How else we can explain the disparities since we can only explain 10% right now. Are you ready? As we were talking about we can only explain about 10% of the variance now. How do we explain the other 90%? This is where I think we've been looking at this all wrong. When you think about it, what we've been trying to do, we've been trying to explain differences in birth outcomes based on snapshots during pregnancy. We need to take a snapshot of a pregnant white and black woman trying to explain the disparities. We won't explain very much. We know what their nutrition is now but they have no idea about their pre-conceptual nutrition but we don't know about their healthcare overall. We may know what their socio-economic status is now but no idea of the poverty with which they grew up. But –

MICHAEL LU: Are we back on? So as I was saying, right now -- what we need to do is look at the life experience exposures of the women rather than taking the snapshots during pregnancy. It's the life course perspective I want to talk to you about today. So

here I have diagrammed that on the life course, a function of an organ or system. The black white gap in birth outcomes is not just what happened during pregnancy but a consequence of what happens over the life course of the woman. It's really the consequences of not only different exposures during pregnancies but having different developments across the life course. Basically as you can see on the red line and the blue line basically having different slopes on these developmental trajectory. We may be able to narrow the gap somewhat with pre-natal care but have a tough time closing the gap completely. In real life I think these developments are probably curves rather than straight lines because we think there are actually certain critical periods during which women are most vulnerable to bad influences and more amenable to good influences. I think the earliest of these developmental critical periods probably occur at the left-hand side of your screen right when you were a baby inside your mother's womb that is occurring in utero and the basis for the hypothesis receiving a great deal of attention.

Now, what barker and his colleagues found are a remarkable series of studies. They found a relationship between low birth weight and high risk for heart disease, high blood pressure, and diabetes later in life. Of course, if I were to ask you tell me some risk factors for heart disease what would you tell me? You would ask me -- you would tell me about cigarette smoking, high cholesterol, obesity, hypertension. How many of you would have told me about low birth weight? What does low birth weight have to do with heart disease years later on? What barker and his colleagues thought is there are these critical periods in development in which the function of an organ or system is being programmed and if there is a disruption to that development and to the programming, then that organ or

system may never function optimally over the life course. An example. If you were to get undernutrition in second trimester you get a smaller pancreas that can't handle sugar load as well leading to the risk of diabetes 50 years later. If that's true that got me started thinking, could your future birth outcomes be programmed in utero?

Could your future reproductive potential be programmed while you were a baby inside your mother's womb? I'm not talking about having a small uterus but all body systems are involving in pregnancy. Let me give you an example. Let's say your mom was stressed out when she was pregnant with you. What happens? Well, we know her brain puts out all these stress hormones and the placenta sends out the stress hormones and we know that in several different ways the stress hormones can cause the placenta. You're bathing the baby in the stress hormones while the baby's brain is developing and you're doing this with all these stress hormones. Could that actually cause the baby to have higher stress reactivity later in life when she's exposed to a certain amount of stress that she puts out a lot more of these stress hormones? If she were pregnant it could cause her to go into pre-term labor 20 or 30 years later on? Well, the life course hypothesis differs from the barker hypothesis there is critical periods in programming and also argues that development doesn't stop at birth.

In fact, it goes on for the rest of your life and all of these other things, the stress, poverty, abuse, that further depress your development leading to a widening gap in birth outcomes as you get older. Again let me give you an example from the stress literature. At this time your mom didn't have to be stressed out when she was pregnant with you but rather it's

the daily wear and tear, the chronic stress and strain that women, particularly women of color, experience that cause them to have high stress reactivity. How does that happen? Well, think about what happened when you see a -- you run, right? What will help you run faster is your body activating that flight or fight response, and the adrenal systems to put out the stress hormones to run faster. What happened after you got away? Your blood pressure comes down, pulse comes down and you relax. And that's the amazing thing about the human body is that it is self-regulating and knows to shut itself off once the stressor has been removed. That's the whole concept to maintain stability through change.

Now, what would happen if there is nowhere to run? What would happen if you can't get away? We know in the chronic and repeated stress the body loses the ability for self-regulation. Now you can turn it on but you have a tough time shutting it off. Biologically speaking for those of you who are more biologically oriented what happens is you get the elevated levels and you lose that negative feedback. So the stress hormones stay up. In fact that's what we find in animals and humans subjected to repeated and chronic stress that they walk around with higher levels of stress hormones. If you were subject them to stressors they put out a lot more of these stress hormones than other women would. If they were pregnant and they were exposed to stress and they have high stress reactivity could it cause them to go into pre-term labor? What does stress do to your immune functions? In general stress suppresses your immune system and that's why perhaps we find in women who are chronically stressed or -- I say a lot of African-American women that they have high risk for disease. But that maybe is only part of the story. It turns out

that usually in the face of the infection your body activates that immunoinflammatory response to fight off the infection.

As soon as the battle is won the body shuts itself off to prevent you from having an inflammatory over-tour. The human body is self-regulating. It knows to shut it off once the infection has been fought off. In animals and humans subjected to chronic or repeated stress, they lose that ability for self-regulation but now they can turn on but they have a real tough time shutting it off. And again biologically speaking what happens is you get the chronically elevated level which down regulates the immune cells and so you lose that counter regulation from the HPA axis and you get all this information. So in the face of an infection, something as benign as bacterial VAGINOSIS we see that in women who are chronically stressed, that they actually send out all of these inflammatory things that could then cause them if they were pregnant that could then cause them to go into pre-term labor. -- labor. Of course, all of this is theory now. How do we know any of this is true? How do we know that what happens before pregnancy has to do with your birth outcome? Or what happened when you were a baby inside your mother's womb has anything to do with your pregnancy success 20 to 30 years later on? Perhaps this is a useful approach.

In the first line of evidence has to do with intergenerational factors because we know that you're a lot more likely to be born low birth weight if your mother was born low birth weight. You're even more likely to be born low birth weight if your mother and sister are born low birth weight. Researchers in the past have taken it as indirect evidence for some genetic transmission of low birth weight. The non-genetic explanation for this is rather

than the genes and maybe the environment perhaps even across generations that causes this familiar clustering all over the place. We have a study from England where there is a stronger recognition of the class system by women who were born to low social class that marry somebody in a higher class. But these upwardly mobile women still have worse birth outcomes than women born into high social class in the first place and it led researchers to conclude that both the conditions under which you were born and grow up as well as the conditions under which your pregnancy occurs are equally important reasons for the birth outcome but perhaps it will take more than one generation to equalize the disparity.

I told you earlier that foreign born women do better than U.S. born women in outcomes. Foreign born women do much better than U.S. born black women. The researchers in this study were curious as to why that was. They went back and asked more questions and what they found was that these foreign born women are a lot more likely to have fathers who work in a high or highest social status occupations than the U.S. born women. In fact, their father's occupations are a lot more predictive of their baby's birth weight than their husband's occupation. And it led researchers to conclude a partial explanation as to why the foreign born women do better than U.S. born women is perhaps they spend their childhood years under better social circumstances. Looking at the line of evidence has to do with pregnancy interval. The leading hypothesis for this is one of maternal depletion. Pregnancy takes a lot out of mom. It takes a long time to get back what was depleted. We don't know what that should be but here is an interesting study.

Comparing what that critical interpregnancy interval is for black and white women there was published in the New England Journal of Medicine a few years ago. The critical interpregnancy interval was three months for white women and about nine months for black women. That is for white women who waited less than three months before they got pregnant again and black women who waited less than nine months before they got pregnant again they were more likely to have low birth weight babies the next time around. Why three months for white women and nine months for black women? The black women start with next reserves nutritional and otherwise and it takes them longer to get back what was depleted? Pregnancy? Could an explanation be less than 5% of white women waited three months before they got pregnant again, nearly half of black women in this study got pregnant again in less than nine months. The other line of evidence has to do with another hypothesis. This says the effects of social inequality may compound it leading the growing gaps in health status and as you get older it can go on to affect your baby's health.

There is a study based on tens of thousands of birth certificates. She found that after women got older from the early 20's to the early 30's, African-American women, they were more likely to have babies who were low birth weight or very low birth weight and this was an increase not seen amongst white women as they got older. She found this increase in low birth weight with the increase in age found in African-American of low and average socio-economic status but also African-American with high socio-economic status. They were more likely to smoke cigarettes. More likely to have high blood pressure. More

likely to have all these high medical risk conditions that put their pregnancies at risk. What they found was disadvantaged African-American women have to weather through more bad stuff. Chronic stress and strain that causes a rapid deterioration in their overall health that could go on to affect your baby's health. I was involved in this study of reproductive health in Los Angeles. It was one of the largest studies among homeless. Over 1,000 homeless women in our area. Even in this population you still see the kind of disparities between black women and white women.

But the most interesting finding from our study and the methodology of what we did, that the percent of white women being homeless had a more powerful relationship with average birth outcomes than whether or not one went homeless during pregnancy. It lends to support to the hypothesis that what a woman has weathered through prior to pregnancy may be just as important, if not more important, than what happens during it. To conclude, why do I think black babies have twice the chance of dying within the first year of life compared to white babies? My first message to you is that if you're looking for simple answers, you're not going to find them. It is not just pre-natal care or behavior and socio-economic. It's all these underlying causes of disease and all the multiple determinants of health. The next slide, please. My second message to you is that racial ethnic disparities in birth outcomes carry over a lifetime of potential exposures. The consequences of bad health and bad healthcare and bad habits and bad nutrition and bad housing and bad neighborhoods and the joblessness and hopelessness accumulated over the life course of a woman.

So the implication of the life course perspective for those of us who do research. Taking snapshots during pregnancy isn't enough. Research needs to examine different exposures not only during pregnancy but over the life course of the woman. And the implication for those of you out in the real world making a real difference is this. There ain't no quick fix. If you think about it that's what we've been trying to do over the last 20 years. We've been trying to cram all the good things into less than nine months of pre-natal care and expecting everything to turn out all right in the end. If you think it will reversal the cumulative disadvantages and inequities that are accumulated over the life course of a woman, you may be expecting too much of pre-natal care. A simple an algae that I use with any students is some of you could relate to, just think you're -- how many do you ever cram for an exam? How many of you think cramming works? A little bit, right? We all learn from grade school on that you do much better if you pace yourself along the way and somehow that very simple lesson we learned in grade school has been lost in obstetrics in public health.

If we're serious about reducing disparity we have to start taking care of women before they get pregnant. And I'm not talking about the three months pre-conceptionally. I'm talking about when she was a baby inside her mother's womb, infant, child, adolescent, young adult and we have to do more than healthcare. We have to take care of all the underlying causes of the disease and the multiple determinants of health. If we do this and only if we commit ourselves as a nation will we be able to see the day when little black boys and black girls will be able to join hands with little white boys and white girls and walk together as sisters and brothers. I was asked to address how the life course perspective would

apply to the healthy start program so I'll take about ten more minutes to go over what I think. But I think in many ways already we are applying the life course perspective to healthy start. This is a 12 point plan I came up with as a way to use the life course approach to start closing the black-white gap in birth outcomes. You're doing a lot of these things already.

Pre-conception care and some of you are working on improving the quality of pre-natal care including increasing screening and referral from the children and some programs are working on male involvement programs and certainly all of you do a great job in terms of doing outreach, care, coordination and case management. Very importantly that community building is a very integral part of your work. I have to congratulate you and commend you on your vision and your work in leading the way to reduce racial disparities in birth outcomes. But let's talk about what else we can do. How else can we do better to close the gap? Let's start with the interconception care. It's to reduce the number of -- providing access to interconceptional healthcare by eliminating negative environmental conditions and behaviors. What is the content of interconception care? What do you do after you enroll the woman into your program who has had a pre-term baby or very low birth weight baby? What is it that you're doing that will help prevent the recurrence of pre-term birth and low birth rate? You all do a good job of outreach and case management. What about all the system components. Next slide, please.

How complete is your risk assessment? For example, we know that there are four major pathways leading up to pre-term birth. Infection, stress, vascular and stretching. So if you

have a woman who had a pre-term -- go back one slide, please. If you had a woman who had a pre-term birth caused by infections are you doing routine screening for infections including periDONTAL infection. If there was preabruption was she examined? Was she screened for potential genetics that could cause her to have abruption during pregnancy.

MICHAEL LU: Next slide, please. Health promotion? For example, is your dietitian talking to your client about the food pyramid? With emphasis of increasing intake of fruits and vegetables as well as walnuts and black beans which have high content of Omega three which are anti-inflammatory and decrease intake of red meat, deep fried foods, anything that is quite inflammatory. We also know that fish has high content of Omega three but again that's quite anti-inflammatory. But is your dietitian talking to your client about the advisory about fish and mercury contamination? How effective is the smoking cessation program. We know nationally 2/3 of women who quit smoking during pregnancy will relapse within six months after pregnancy. How effective is your breastfeeding promotion? There is a great deal of racial disparity in breastfeeding both in terms of initiation as well as duration of six months, and duration at 12 months. We have to do a lot better than that. And how effective is her family planning? Nationally about half of all women with unintended pregnancies are using nothing when they got pregnant and about half of them were actually using something and they have the unintended pregnancies.

How effective are you in getting your clients to use long term effective reliable contraception? We know that family planning is critically important for reducing disparities because we know that the unintended pregnancy as well as a short pregnancy interval

has an effect on low birth weight and pre-term birth. What about your medical and psycho social interventions? How effective with those? We don't have good studies of the interconceptional period that shows evidence-based intervention. We have a few of what to do with subsequent pregnancies. Studies that use fish oil in subsequent pregnancy was shown to reduce the risk of recurrent pre-term birth by about half. And the use of 17 Alpha hydroxy progesterone. Next slide, please. For example, we know that stress is an important cause of the disparities. How good are we in reducing stress and providing support? Obviously you all know you have to do screening for maternal depression, for domestic violence. What else can we work? Does yoga work? Does cognitive behavior work? It's a promising strategy of providing social support through pre-natal care. What about the idea of centering for interconception care? These are all things we don't know about that I think we really need more studies on. And that's just at the individual level.

What about the interpersonal level? We know that men could be a vital source of support. That they often could be a very important cause of stress. As I mentioned earlier we know about 70% of black babies are born into single parent families. Mostly headed by women. And there is -- you see about a third of poor black infants are born into single mother families with little or no father involvement and about half of black infants -- poor black infants are born into the so-called fragile families where the parents aren't married, they're either co-habiting or the father visits once a week. Over time, that involvement declines. So that -- so you see that basically about half of all poor black kids in this country grow up in households with little or no father involvement. And you know when the father is around she may not know how to provide support. I think most guys are clueless about providing

support. Here is the study from the national plan survey which found that black women are more likely to report partner-related stress than white women just before or during pregnancy.

So the question is, how do we get men to be more supportive? How do we get men to be more involved in pregnancy and parenting? This is where I think we need to address all of these. We really need to address the multiple levels. We need to address it at the individual levels. We needed indicational programs that work on changing attitude, knowledge and behavior in the employment related services. We need legal and social services to help dads deal with custody issues and child support issues. We need programs that work on interpersonal level especially in terms of improving gender relations such as marriage counseling, conflict resolution. We also need programs at the community level. This is where I think a lot of the black churches and black universities have taken up the leadership of the whole fatherhood movement but I think more need to do so. They can really shape the norms, values and expectations around fatherhood. And I think this is also where policy reforms can do a lot to keep fragile families intact.

Eliminating the distinction between one and two parent families in eligibility determination for temporary -- or to allow a second earner deduction for income tax credit or to allow non-custodial dads who are paying child support to access TANF. An economy that delivers consistent employment with fair trade, collective bargaining as well as job training and retraining will go a long way for returning black fathers to black families. The neighborhood and community level. What can communities do to reduce stress and

increase support? Let me give you an example from a program I'm working with in south and central Los Angeles called healthy African-American families headed by Loretta Jones. What healthy African-American did is started with focus groups asking pregnant women what were the stressors in their lives and they asked two more questions. They asked them what can families and friends do for you that is going to help you have a better pregnancy? And what can strangers do for you that will help you have a better pregnancy? Guess what kind of responses they were getting from the pregnant women? From families and friends they basically wanted, wanted help with things. Help me with childcare, doing the dishes and so forth. From strangers they wanted first of all respect for personal space. Don't come up and touch my belly without asking for my permission.

They also wanted some common courtesy. When you get on the bus -- when I get on the bus, offer me your seat. Or let me go to the front of the line in the grocery store or better yet, let me go to the front of the line when I'm looking for the bathroom in the church. Or help me carry groceries to the car. So what healthy African-American families said, they compiled this whole list of things that families, friends and strangers can do to help pregnant women have a better pregnancy where they called intentional acts of kindness for a pregnant woman. And they are now putting it on things that will be distributed in churches, barbershops and salons and other media. In a way they're creating a community of support around pregnant women that you should try to help them have a better pregnancy. Next slide, please. They're trying to create that network of social support that strengths and connectedness between the pregnant woman and her community. It's what we call reproductive social capital. Next slide, please.

Now of course you can have all the kindness in the world you're still not going to do much about disparities until you start addressing some of the underlying structural problems that underlie the disparity. Obviously it doesn't make a lot of sense to ask providers to screen for the depression. There are no mental health services available at the end of the referral. It doesn't make sense to screen for domestic violence when you don't have the infrastructure available for victims. It doesn't make sense to ask women to eat healthy when they don't have access to healthy food. In many communities in Los Angeles county, we have more liquor stores than grocery stores and more fast food restaurants than healthy restaurants who on average cost about 15% to 20% more -- the quality of food is less. It doesn't make sense to ask women to exercise and be physically active when they have limited access and opportunity to do so. In Los Angeles where I live there are thousands of acres of parks and recreation land for me to go exercise in. That's the west side of Los Angeles. In south central Los Angeles there is less than one acre. And again, this is where we're not going to do a whole lot in terms of closing the gap unless we actually start closing the gap in some of these community resources. And that's where the community building really has to come in.

For 20 years we thought if we can get women access to good pre-natal care that's our solution to the disparity in birth outcomes. Today we realize we need to do a lot more than that. We need a new model of prenatal care. We have to take prenatal care to the women. I'm talking more about than just from visitation or mobile vans. I'm talking about prenatal care in the broader sense of the word. Prenatal care in the -- where women by

their food and the jobs they work and the air they breathe and the job -- and in the water that they drink and the childcare they get. And it's about investing and building healthy communities so you have healthy women who go on to have healthy babies. And when we start investing in community building, not only are we investing in the health of that pregnancy, but now we're also beginning to invest in the health of the two-year-old who gets good quality childcare and the health of a 5-year-old who now has clean air to breathe and the health of a 12-year-old who can make healthy lifestyle choices. That's what the life course perspective is all about.

In the interest of time I'm going to go over some of the policy and institutional issues. I think there are a lot of things that I think policies can do much better in terms of supporting working mothers and families. This is the last point I want to make. I think this is most important point. I don't think we can really talk about addressing disparities without talking about racism. I think the first step to endure race -- racism is to know it exists in America and impacts on health and healthcare that is clearly documented in the Institute of Medicine report on equal treatment. We certainly have a number of studies that show that there are unequal treatment in prenatal care as well. For starters what you can do, make sure that all of your clients get equal treatment under your care regardless of the color of her skin, regardless of her race and ethnicity. To conclude, I guess again thank you and congratulations for your great work. Obviously there are a lot more we need to do. And you are the ones that we're really counting on to close the gap in birth outcomes and you're the ones that I think the nation can count on to make sure that this is very self-

evident truth that all men and women are created equal and that every child should get a healthy start. Thank you very much.

GAIL DAVIS: We would like to thank Dr. Lu for his presentation and giving us a lot to think about and thoughts and overview of some of the latest finding. We want to remind everybody that you can view this webcast, it will be archived probably by Monday and a slides will also be available. That's at mchcom.com

GAIL DAVIS: We would like to remind our audience this webcast will be available for viewing as an archive at mchcom.com That's mchcom.com and the slides will also be available. I would like to thank Dr. Lu for the wonderful presentation and the insight that he brought to this subject that we've been attempting to address for these many years. Some of the questions that we have, Dr. Lu, this one is from the project in Louisiana. It asks, has the issue of the age of first birth among black, white and Hispanic women been considered as a factor?

MICHAEL LU: The issue of the age of first birth certainly is important. We know the extremes of ages when you're very young or when you're advanced age of over 35 have increased risk of poor birth outcomes. There maybe an effect of the age amongst different population groups as well.

GAIL DAVIS: Infection is a risk factor that our project should screen for but the issue of X-rays. Can you give us suggestions on how that can be done either by nurse practitioner

or by a dentist? How do you suggest the issue of periodontal infection be addressed with pregnant women?

MICHAEL LU: As far as periodontal infection with pregnant women, certainly x-ray is a concern but we also know that one single X-ray doesn't pose, there is no clear evidence base to show that one X-ray is a risk to the baby's development. If you were to compare the risk of one X-ray versus the risk of periodontal infection on the baby's development it makes sense to do the X-ray even during pregnancy. The better approach to that is to do periodontal screening before pregnancy either before the interconceptional period or the pre-conceptional period before the first pregnancy. It's the issue of access to dental care for much of the populations that you serve. The problem with trying to address periodontal infection during pregnancy is that even if you identify and treat the infection, sometimes it may be doing too little too late. If you identify the infection in mid-pregnancy since it's been there pre-conceptionally you may be able to do something about stopping the infection but doing little to do something that has been activated that could cause her to go into pre-term labor whether or not the infection is treated. The idea of pre-conceptional program is something we need to take a hard look at it.

GAIL DAVIS: Could you look at the center of care.

MICHAEL LU: I'm not an expert on it although I love the concept. There are a number of sites across the country right now doing a study on centering pregnancy. The idea is in addition to individualized pre-natal care so one doctor sees one woman for prenatal care

that you get a group together and that group you are able to exchange knowledge, exchange information and really create a supportive environment for the prenatal care to take place. Of course, for many of your clients prenatal care can be a very stressful experience. If they have to change three buses and take their three children with them and wait for an hour and a half in the waiting room while their bosses are getting mad at them for taking time from work and then they go in and the doctor spends like five or ten minutes with them or the doctors don't even speak the language and can't really communicate with them, that could be a very stressful experience. We want prenatal care to be supportive. The whole idea is centering pregnancy is to provide the type of support in the environment for pregnant women and to reduce their level of stress. I think that there may be something to the whole notion of centering during interconception care. These are women who had a low birth weight baby or lost a baby and they could use a lot of support as well.

GAIL DAVIS: Has any study been done in terms of birth outcome for biracial children?

MICHAEL LU: The question is whether there are studies done for biracial children. There are some studies, not very good studies, but the studies seem to -- currently most of the studies focus on maternal race and that's really where a lot of our epidemiological data comes from as we look at the birth certificates based on maternal weight. There are fewer studies looking at biracial children and whether their birth outcomes are comparable to -- to children whose parents are black and overall it seems to suggest that if the mother is black, that the children's birth outcomes are poorer than if the father is black.

GAIL DAVIS: Are you advocating a comprehensive life development effort to improve birth outcome. It seems overwhelming.

MICHAEL LU: This question comes from a public health agency, right? So think back to the core functions of what you do in public health which is what? Policy development. Start thinking about what are you doing in terms of your assessment that -- currently we often do a perinatal assessment like low birth weight and teen pregnancy. Can we do more assessment than that? Can we think about the different factors that we should be assessing? Residential segregation, exposure to air and water pollutants. Those are all things that can impact on the health of the mother and child and yet the we need to do better if doing the assessment. We can do much better in assuring the quality of prenatal care and assuring women get access to preconception care and actually women's healthcare. There are a lot of things we can do around that. And certainly with policy development there are a number of issues that we can start addressing. Issues, as I mentioned, that have to do with increasing male involvement and keeping fragile families intact. Issues that have to do with protecting pregnant women who are working.

When you think about it, most European countries in the world actually do a much better jobs in terms of protecting the working mothers and families than we do and they provide longer maternity and paternity leave than we do here in this country. In July last month California became the first state in the country that actually provides for paid maternity leave. Overall in this country only 5% of women can take a -- have access to guaranteed

maternity leave for which they're paid for it. The problem with the California program is it's for six weeks. It exempts small employers and funded mostly out of payroll tax. We can do better to protect our mothers and families. There are a lot of lessons we can learn from European and other industrialized countries.

GAIL DAVIS: The healthy start program will be facing open competition this year. In terms of their needs assessment given your presentation around life course what would you suggest they should incorporate in terms of their needs assessment rather than the traditional birth outcome measures?

MICHAEL LU: I'm sorry, can you repeat the question?

GAIL DAVIS: With the healthy start program going through open competition they must complete a needs assessment as part of your grant application and traditionally they reported the birth outcomes. Infant mortality information. What would you suggest, given your new life course, that they include in making an assessment of efforts to reduce infant mortality in their communities beyond just the traditional?

MICHAEL LU: I think in terms of the needs. Obviously it depends on the availability of data but if you have the data I think you should start to include some of the conceptual factors. Look at the pockets where there are the greatest infant mortality and look at the environment where those infant mortality occur. If you can document some of the environmental issues with respect to housing or things that cause stress in women's lives.

I think those are -- those are issues that potentially you really need to be addressed, about closing the gap. I think from a life course perspective if you can also start thinking about how to express not just maternal health, because moms aren't just -- this is important over their whole life course. Addressing something with regards to women's health and disparities and women's healthy think that would be really important and certainly their access to healthcare both pre-conceptional that hopefully the next phase of healthy start will begin to address.

GAIL DAVIS: We have a number of questions wanting you to come out across the country and speak. So we would like to thank you again for your presentation. And we really enjoyed the information you presented here today. Any closing comments?

MICHAEL LU: My pleasure. Keep up the great work. There is a lot of important work to do. You are actually one of my favorite programs out there to really try to close the gap. So keep up the great work.

GAIL DAVIS: Thank you.