>> I'm a clinical child psychologist by training,
and I started my career
in a regular old mental health clinic in the Bronx.
We were focused on early childhood,
and so kids would come in, maybe 4, 5, and you say wow,
that's so early, that's so preventive, and I say oh,
they had four years of exposure to toxic stress
and community violence and two years of exposure
to domestic violence, and it was way too late, from what we know
about brain development.
And the disproportionately receptive brain development
that we see in early childhood.
It's a sponge.
It picks up the good, and it picks up the bad, right?
And that's why your two year old can learn Spanish
in a quick minute, and you're still struggling with "Hola,
como estas," [laughter] but it's also why your two year old
exposed to two years of domestic violence is disproportionately
negatively affected, right?
So when I asked the parents of these 4- and 5-year-olds
who are showing up at this mental health clinic, you know,
"I wish I would have seen you sooner, did you tell anybody
about this before coming here?"
And they almost always say yes, I told the pediatrician.
So well why don't I go sit next to the pediatrician then.
If you're going to the pediatrician all the time,
and you seem to like to go to the pediatrician,
because when you don't come to see me and I ask you
where you were, you said you went to the pediatrician,
then why don't I go sit by the pediatrician and reduce some
of that stigma attached to get mental health services,
and really tackle these problems early on.
So, I share with you, as the title of my talk,
age 3 is middle age, when it comes to brain development,
which comes from Jack Schoenkopf at the Center
for the Developing Child at Harvard, and it just sort
of encapsulates it for you, the imperativeness
of getting it right in these early years.
So, like any good person,
I will tell you what I'm going to tell you.
We are going to review the importance
of two-generation interventions.
Just as Dr. Braverman said, there is really no point
in me treating a 2-year-old and sending that 2-year-old back
into a community in a family
that doesn't have the supports they need.
I'm wasting my time, right?
The impact of adverse childhood experiences are aces
on these families, toxic stress, and I will present
to you one possible answer to start
to moderate some of these effects.
The Healthy Steps Program.
The national model, I'll show you a few things
that we've done differently, and go through our interventions,
our teaching, some of the challenges around billing
and policy, and how you might bring this to scale.
I'm program agnostic.

I'm not here to say that, you know,
this is the one way to do this.
But I am a little biased about platforms.
There is something pretty extraordinary
about primary care.
Primary care is a remarkable platform to do this.
So, a few years ago, the American Academy
of Pediatrics put out this policy statement
on toxic stress, which hopefully you all are familiar with.
And they spoke about this two-generation intervention,
right?
They spoke about the critical need to provide targeted support
for parents and caregivers, if our goal is to identify and work
with children at high risk for toxic stress.
Again, from the Harvard University Center
around the Developing Child,
they talked about that inter-generational transmission
that Dr. Braverman talked about.
That it begins with the future mother's health before she
gets pregnant.
It's the best predictor of how that child is going to do,
and that lifetime of well-being for that child, right?

So just so we're speaking the same language,
this comes from the Ascend Network at the Aspen Institute.
What is this two-generation continuum?
And people get worked up about this, and say well,
how about three-generation?
Fine, multi-generation, right?
Two-gen just has a nice ring to it, I think, quite honestly.
So that is why people like to say it.
But it is multi-generation.
And it is not serving solely the family, the parent, right?
So it's just job training.
And it's not serving solely the child, so it's just child care.
It is really bringing all of that together.
And if you want to know a little secret,
if you want to find parents of young children,
there is one place that you can universally find almost all
of them regardless of their racial, ethnic,
socioeconomic status, background,
and it is in the primary care pediatric setting.
Right? If you have young children,
or you once had young children, or you know anyone
who has young children, you know you are
at the pediatrician 13 times in the first three years of life,
even if you're perfectly healthy.
We don't have any other system like that
in this country, where everybody goes.
They go pretty often.
And it's non-stigmatized.
I even sometimes think it's positively stigmatized,
you're a good parent if you take your kid to the pediatrician.
Almost no matter, your community,
or no matter your beliefs, right?
You're a good parent if you take your kid to the pediatrician.
Now, contrast that with the mental health system,

which suffers from a great deal of stigma.
Nobody wants to take their kids there.
So why don't we bring them together, and start solving some
of these problems you see up on the screen,
which is that children of all ages exhibit symptoms
of mental health problems, and a very low percentage
of them receive care from the specialty mental health
care system.
But 50% of mental health diagnoses show symptoms before
age 14.
So, if we can prevent it, if we can predict it,
then let's get started.
If this was any other disease state, I would argue to you
that we wouldn't stand for this.
If I told you that only a quarter of people
with cancer actually went and got cancer treatment
at the right cancer hospital, you would say "Well,
we need to do something drastic!"
But we seem to stand for it with mental health,
because we don't think it's quite as critical,
or we don't think it's quite as important,
or maybe we don't trust that we can fix it, as Dr. Adams said,
early this morning, his brother is incarcerated right now,
and he attributes that to untreated mental health.
So let's get to work.
So the National Model of Healthy Steps,
Healthy Steps started back in the mid-90s up at Boston,
and the idea was that you would bring another person
into the pediatric office.
If any of you are a pediatrician,
or you know pediatricians, you know that they have 15 minutes,
at this point, to do like everything
under the sun and then some.
Everything from bicycle helmets, to fluoride,
to checking if you're actually growing,
to deciding what shots you need, to actually saying "Hi,
how are you," you know, and all those sorts of things.
And doing it on their medical record.
You know, so adding this Healthy Steps specialist
into the pediatric primary care team,
and that Healthy Steps specialist might be a clinical
social worker.
It might be a child psychologist.
It might be a nurse.
And they are going to co-manage the well child care of that baby
for the first three years of life,
because there are 13 visits, remember,
and because it's important with that sponge-like brain
to get it right, and because it's universally accessed
and non-stigmatized, right?
We are going to do all sorts
of developmental screenings for the child.
We're going to do home visits.
We're going to have parent groups.
We're going to have this thing
that they call a Child Development Telephone
Information Line, which sounds very exciting.

It's a voice mail, as far as I can tell.
It's a phone, with some voice mail, with somebody
who answers it, and answers your questions.
And all sorts of written materials, and all sorts
of linkages to community resources.
That is the national model.

Things that we do a little different
in the Bronx is that we go to age 5.
We do lots of parent mental health screenings,
as part of our screening, because there is no--
well there's no health without mental health.
There is certainly no child mental health,
without parent mental health most often.
Right? And really focus on that.
I'm going to show you, if it works, a brief video.
Because there is nothing better than just sort of seeing it
in action, not hearing me talk about it, but hear one
of our families talk about it.

>> The family that I grew up in was pretty rough.
There was a lot of abuse.
I would never want that for another person.
For another child.

Two months before our wedding was set,
I found out I was pregnant.
I was told that it would be a good idea for me to abort him
because carrying him could be detrimental
to my health and his.
I looked at the doctor and said "I'm having this baby."
>> Motherhood didn't come as naturally as I thought it would.

When she came, we did not feel totally prepared,
and her birth was rather sudden and tumultuous.

>> I was scared.
Every time I had a contraction, I was afraid
that I was going to rupture.
I made it to the day they scheduled my C-section,
and my uterus gave out on the operating table.

Being able to take him home-- I was so happy, all I kept saying

to him was, "We made it."

>> Even after we came home, it was kind of rough.
I felt horribly guilty for what Caroline had gone through,
that I hadn't been able to, you know, take care of her.
She'd been alone in the NICU for a while.
Family wasn't really available to help or willing.
I went through a lot of depression at that point.
>> It was like, I was so scared.
I felt like every negative thought.
We're not supposed to be here, we beat these odds,
something is going to go wrong. And a knock at the door came,
when I took him to his first appointment and

it was Janelle from the Healthy Steps program,
and she said, hey, do you have a moment.
I was like, I don't know who you are, but you're like an angel.

>> Healthy Steps is the integration of health
and parental support right here in pediatrics,
starting from that very first newborn visit.
It's stressful to be a parent,
and it's isolating to be a parent.
Especially for people who have a history of trauma.
>> That was scary, you know, you're pregnant,
and I'm thinking, yeah, but just go to sleep and not wake
up again, and that's when I was like,
I should just not be alone right now I don't even want those
thoughts.
>> When we talk about parent anxiety disorders,
post-partum depression, not a lot of people are asking
about that in pediatrics.
Healthy Steps asks those hard questions.
>> I think when we show genuine interest
in a parents' well-being, they start to build trust,
and through that trust, we can really work together
to talk about the baby.

>> As soon as the nurse puts you in the waiting room
for the doctor, the Healthy Steps Specialist will come in,
and she usually has a questionnaire
for whatever kids at the visit.
When you finish that, she'll go over it with you,
and they ask you if you have any concerns or issues.
>> For a while, just watching these milestones,
and because he was premature,
we were just constantly worried about that.
And she held our hand every step of the way.
I was in a very unhealthy place, worried every single day
that something was going to happen,
instead of just allowing him to be one and a half years old.
>> Raising a child is hard, and it's uncertain,
and unpredictable, and they're vulnerable, when that happens.
>> I just find myself, and it's all in my mind, you know,
you feel like, it's something like me, I'm broken,
I'm not handling this stuff.
She was like, you're doing great,
for the circumstances you had.
>> We work together to kind of reassure the parent,
and ask them about those instincts that they're feeling.
I do think the reassurance, that it's okay, you know,
they can really trust themselves,
and what they think is best for their baby.
>> They feel so good about themselves, after our visit,
that they want to come back.

>> The best part of my job is knowing that someone who came
to the doctor for their flu shot, or for a well child visit,
also got an opportunity to talk about the other things
that are hard for them.
Whether I'm directing people towards resources

in the community or whether I'm having a session with a parent,
when they got to relieve a little bit of their stress,
or take a little bit off of their plate.
It's that they came here for their kid,
but the family was served.
>> I think the most beneficial aspect to Healthy Steps is
that it's my life, it's just to provide reassurance,
and will he help find in me the answers that
I'm kind of seeking for them,
and have the confidence that I can do this.
I am the child's parent, and I have everything I need
to be this child's parent, to do a good job at it.
>> It has allowed me to be the type of mom that I wanted to be.
It has allowed me understanding and peace of mind
to raise Lake to be this natural, normal kiddie self.
I'm not afraid anymore, like when he was first born.
I look at his birth story now as, yeah, I went through that,
but in the process I got sweet Janelle,
and I got to have someone that I considered a partner
in my parenting process.
I feel stronger as a parent with Healthy Steps.
[Music]

>> So we are in the Bronx.
The Bronx, there are 62 counties in New York,
and the Bronx usually ranks somewhere around 62nd
on most health outcomes.
There is a congressional district in the south Bronx
that is the poorest urban congressional district
in the country.
We are dealing with very high rates of asthma, obesity, etc.--
So if we can do this in a place like the Bronx,
where poverty runs very deep, and risk runs very high,
and ACES, adverse childhood experiences,
are almost universally impacting our families,
I want you to remember that at no point did Brittany say
that this solved her poverty or it solved, you know,
her current circumstances.
She said it "allowed me to be the kind
of parent I wanted to be."
It wasn't our agenda of what kind of parent she should be,
and just like Dr. Bregman said, nobody chooses
to raise their child in adverse circumstances, right?
So I just want to tell you a little bit
about how we got there, share a couple of research results
with you and then we'll move on.
So we have really redefined the patient as the dyad.
It's that two-generation.
It's no point in pediatrics just focusing on the baby.
We have two levels of care, a more intensive arm,
for our families, where parents had really high ACES scores,
really high adverse childhood experiences,
and a less intensive light-touch arm for families
that just need a little bit of guidance,
about how to get Johnny to sleep at night.
We focus on parental mental health.
Again, you want to find parents?

They're in the pediatric practice, right?
I know that doesn't make sense, it doesn't sound obvious,
but you know, when is the last time you went
for your well check?
Nobody has to raise their hand, you don't have to tell me,
but I doubt it was 13 times in three years, right?
They're known for their kids' checks.
No matter what else is going on, families make it to that.
Right? And we, like I told you, expanded our age range
to the fifth birthday.
So this just shows you, we've got this enhanced care as usual.
We do so much screening in the primary care pediatric practice.
We are screening for parental depression, and screening
for ACES, like I told you.
Universally screening.
All of our 90,000 kids every year.
For their parents ACEs.
Because if you can predict it, you can prevent it, right?
So if I can predict that parents' experiences of abuse
and neglect impact their child's well-being,
then why are we not getting involved long before the child
gets kicked out of preschool, right?
This short-term treatment is really short-term,
it's like one session to talk
about how you actually get that kid to sleep.
Then that intensive services,
where we co-manage every single well-child visit alongside
the pediatrician.
We enroll the babies up until they're 18 months,
because we really want to keep those slots for real prevention.
And PMH stands for parental mental health.
So remember, I told you treat the parents' mental health right
there in pediatrics, because if dad has significant trauma
in his background, and you're trying to sleep train an infant,
and the very idea of that child crying
for 20 minutes is triggering for dad, you can forget
about sleep training the infant.
You've got to treat that trauma, right?
I said we like to screen.
I wasn't kidding.
This is our screening schedule.
If you hear anywhere that if you think about policy or you think
about change that pediatricians don't like to screen,
they will screen, if they have the resources
to deal with what they find.
They know this is the new morbidity of pediatrics.
They know that they're not so much looking for measles,
mumps and rubella anymore.
They know that if you're working in a place like the Bronx,
you know that equity and social justice is at the heart
of the health care that you're providing,
and so you better be screening for it, right?
The ages and stages questionnaire is a social
emotional screening tool, and also a cognitive
and motor screening tool.
You see autism on there.
And then in our school age kids, we screen for internalizing,

externalizing, and intentional issues,
and then ACEs as you see as well.
The screening work flow involves the whole practice,
the front desk staff gives out the screening tool.
The nurse might score it and load it
up into the electronic medical record,
and only then does the physician get involved,
and with all due respect to the physicians in the room,
all of my physicians tell me,
if you want like a good quality improvement program to work
in a primary care practice,
don't put it all on the physician.
Involve the rest of the practice.
I'm not going to belabor the issue of documentation,
but just to let you know that we have met with legal teams,
and we have figured it out.
We document in the child's pediatric chart.
You may be familiar with some guidance that came out from CMS
in May of 2016, that said you could even document the parents'
depression score in the child's chart,
and that best practice would then be to treat that parent
and that child together.
We provide a confidentiality disclosure.
That we're going to share this with the pediatrician.
So far, you know, I can count literally.
We've been doing this since 2005.
So 12 years, I can count on two hands the number of people
who said "Oh, can you actually make my notes be private?"
And they are all people who were employed by that practice,
and they don't want their fellow nurses seeing what was going on,
but otherwise people say "I don't care,
I know this is what is driving my kid's health and my health,
and let's talk about it."
We are trying to bill
under Medicaid Health and Behavior Codes.
But I will get into that in my next slide.
We have a health care system at this point that is predicated
on billing for a diagnosis.
And everything I've described to you is trying
to prevent mental health diagnoses from ever happening.

And so although we can get reimbursed for screens,
it averages about $7 per screen.
It doesn't quite cut the mustard.
It's better than zero dollars, but I've got 90,000 kids
in my system, like $7 per screen isn't quite going
to get me there.
And we don't get reimbursed
for a Healthy Steps visit unless someone has a diagnosis,
and it has to be the patient, not the parent.
So even if mom has a diagnosis of Major Depression,
and we all know how incredibly impactful that is
for that kid's brain development,
we know the relationship between maternal depression
and child language development, right?
We can't bill in baby's chart based on mom's diagnosis.
Does that make sense?

So we've got some work to do on that.
So this is your ACEs visual.
Remember that adverse childhood experiences lead
to all these things, even early death.
It has since been after the wonderful study from the CDC
that is kind of having a second life now.
It has also been replicated prospectively by colleagues
down in New Zealand, and again, what we want to do is look
at these ACEs and not just say oh, well,
if you've got four ACEs then you're more likely
to inject IV drugs, cancer and heart disease and so on.
Let's get before these ACEs, and get underneath these ACEs.
So I'm going to show you two research slides,
then I'm going to wrap up.
So, I'll show you quickly a design
of we took two matched primary care pediatric settings,
and we enrolled, we gave Healthy Steps
to one, and not to the other.
They're both in the Bronx.
They're both staffed by our general pediatricians,
and our enrollment criteria were first-time moms,
and the baby had to be less than two months old.
And so you either got this Healthy Steps specialist
in your visits, like you saw Janelle, with Brittany
and Lake, or you didn't.
Right? And what we wanted to know,
did mom's ACEs predict the child's social emotional
development at age 3?
Social emotional development really being the foundation
of mental health and wellness, right?
Talk to any kindergarten teacher
about what kid is going to be successful.
It's not the kid who is necessarily reading the fastest,
it's the kid who can like, sit in circle time
and get along with the others.
That social emotional development, right?
So we just wanted to know about mom's ACEs, and then her report
on the ASQSE, the most widely-used screening tool
for social and emotional development at 36 months.
We asked dads as well.
We didn't have enough to include in the sample and get power,
but we certainly know that is going
to be a relevant factor here as well.
So I'll walk you through this slide from your left to right.
Our outcome of interest here is the ASQSE Mean Score.
You want a low score on this tool.
A high score means you're at risk for problems in social
and emotional development, the foundation
of mental health, right?
And so when we look at comparison group kids,
where mom did not experience abuse or neglect,
and I want to be very, very--
there's something very important on this slide.
We didn't include all 10 ACEs.
We only included the abuse and neglect, right?
We didn't include the ones
that are called household dysfunction,

a parent who is incarcerated, or a parent with mental illness,
because they were too ubiquitous, okay?
We wanted to look at the big stuff,
the abuse, and the neglect.
So if mom had experienced abuse or neglect in her own childhood,
her 3-year-old social emotional development was way off the
charts at 90.4.
The cut off is 59, that big,
black line across the middle, you see that?
But if mom hadn't experienced abuse or neglect
in her own childhood, the baby's social emotional development
looked good down there at 28.3.
Go over to that red bar, mom had experienced abuse or neglect
in her own childhood, but she got the Healthy Steps program,
and look, that baby is doing really well in terms
of social emotional development, nice under that cutoff bar.
That pink bar is important too.
Because those babies got healthy steps, but mom didn't have abuse
or neglect, and even if you're not a statistician,
you know that 28.2 is pretty much the same number as 28.3,
so we didn't have much of an effect
with kids whose moms didn't have abuse or neglect
in their own childhood, and that's good news.
Because we didn't need to have much of an effect.
Even in the Bronx, where risk runs so deep.
We don't have to give this service to everybody.
Can get kind of depressing when you think about if we have
to give some service to every, you know, all six
or seven million children growing
up in poverty in this country.
No, because of differences in how resilient children are,
we're learning more about genetic makeup.
We are starting a study with--
to look at biomarkers for toxic stress in two month olds,
next month, I mean, we're learning a lot about the ways
that different kids contribute.
So it tells us that also we can do some short-term mild
intervention with some of these families,
and they'd be just fine.
So that is the slide I'll show you next.
These are those development in behavior consults.
So that's an average of 1.4 sessions
of interventions with a family.
So if you didn't screen at risk on the ASQSE, at age 5,
about 21% of those kids had a BMI at
or above the 95th percentile, right?
If you did screen at risk on the ASQSE,
but you received an average of 1.4 sessions of intervention,
that short-term intervention, only 16% of those kids
at age 5 had a BMI at or above the 95th percentile,
compared to 42% for kids who screened at risk,
did not get the service, then at age 5,
42% of these kids had a BMI at or above the 95th percentile.
Yes, there is a self-selection bias here, right?
It's the parents electing to take up this service.
But this is a pretty extraordinary finding.
This is a program not-- you know, we don't say we're

out there to cure childhood obesity,
but early childhood obesity is a parent-child relationship issue,
in the absence of any medical things going on.
Right? So you're wondering, well how do you do this?
How much does it cost?
And holy moly, this sounds like how much are we going
to have to spend on that?
I've been taught not to say that it's cheap, it's affordable.
So for that short-term light touch, we're spending about $50,
five-zero, total dollars, per family per year.
I spent more on that on the cab on the airport
to my hotel last night.

And $450 per family per year for intensive services, right?
Which is about what my flight cost.
I will close just by saying this is our community.
Thirty percent of people in the Bronx live at
or below the poverty line,
and 40% of children are below the poverty line, right,
68% of our residents are overweight or obese.
So if we can do this in the Bronx, where social determinants
of health are everywhere we turn, we have overcrowding,
we have crime, we have community violence,
and we also have very resilient families
who want to do it better.
I've never met a family, no matter how badly it's gone
with previous children, who for a little moment didn't have a
window of hope that it was going to go better this time around.
And if we can get there with those families, at that time,
then we can really change that trajectory, right?
And where they are is in the pediatric practice.
We work with families from everywhere, and we're trying
to learn every day about what it means
to have healthy brain development
if you're from Bangladesh.
It means something different
than if you're from the DR, right?
Turns out they told us that folks from Bangladesh told us
that serving kids sufficient amounts
of fish was what they thought was going to be most important.
All right, well then let's work with you and figure out how
to get you to what you need to get to right?
We're just making the point that this is adaptable,
everyone is coming to pediatric primary care.
So I would suggest to you that this is an ideal setting
for population-based prevention.
Again, 90,000 kids and we're able to do this.
The two generation, your ideal vehicle
to break the inter-generational cycles of risk and trauma.
This Healthy Steps specialist is almost working as a quarterback,
sort of helping to coordinate care,
and ensure positive outcomes, and just, as Brittany said,
help her to be the kind of mom that she wanted to be,
and that we need to continue our work on payment and policy
to really make this be an intervention that we can spread
around the country to really bring some care.
So thank you.

[Applause]
>> So I want to be mindful of the time.
We got a little bit delayed this morning,
and I want to be respectful to the panels
that are this afternoon,
so can someone tell me how much time we have
for quick discussion and some questions?
Ten minutes, okay, so I will cut my part short.
But first, let me just start by really thanking Dr. Brace
and Dr. Braveman, again, for even being here [applause]--
and really giving us a really solid summary
of the science base in this area.
And let me just reflect that as you're discussing, you know,
the charge of the day is really, you know,
in the name of the forum, even,
it's Healthy Start, Healthy Life.
The Building Blocks to Healthy Equity.
I would suggest that it is also the building blocks to health,
to well-being, to productivity, and even to prosperity.
So then it is our charge,
the charge of public health researchers,
public health leaders, public health practitioners,
to really assure the conditions
where children can really thrive.
That children can be healthy and well, and recognizing
that children are all of their biologies,
all of their characteristics, their histories,
the historical trauma, the culture.
All of that, you know, when they come into this world.
Then we have the environment.
The physical environment,
but also the sociopolitical environment,
the context with which these kids are raised.
And we talked about, it's not deterministic.
It's not that things happen, and they set us on a pathway,
and oh, you have high ACEs,
you're going to have poor health.
It means that we need to really boost the protective factors,
the protective relationships, the protective environments,
the protective contexts,
to really change those trajectories for kids.
And I would say that means we need to be assuring safe,
stable, nurturing relationships and environments
for all children if we're really going to be strategic
about achieving our public health goals.
So it doesn't matter if you're in the business
of preventing mental illness, if you're, you know,
preventing infectious disease.
If we have healthier children, healthier communities,
we will have a healthier, more productive nation.
So that's just some context to keep in mind.
And as I reflect on some of the really excellent, you know,
programs, policy levers, that kind of were touched on today,
again, recognizing
that preventing early adversity before it occurs is a
two-generation approach, a strategy,
to really achieve our health goals.

So, if we know that there is about a 19-year difference
in life expectancy between those who have high, measured six
or more, versus those who have no ACEs, okay?
19-year difference in life expectancy is a greater life
expectancy and equity than we see in most any other injury,
illness, or geographic comparison.
Almost 20 years of life lost, okay?
But we know that is just the ACEs we measured.
That's just the stuff that we asked about,
that we had data for.
Of course we have this context.
We didn't measure poverty,
we didn't measure social iniquities, all of this,
you know, complex interplay between risk
and protective factors, resources, etc. And if we know
that ACEs affect our health outcomes,
and now we have more recent data that say
that ACEs also impact our ability to graduate high school,
through the brain function and development effects,
endocrine system, epigenetics, how our genes express,
so now you have this double whammy
where it is affecting our health,
but it is also affecting our ability
to have these life opportunities that are protective of health.
It is our charge to invest
in preventing early adversity before it occurs.
So all of that is the context to say we are just so thankful
to really raise up this work of healthy equity as the charge
of all of us in this room, certainly in our, you know,
prevention of childhood abuse
and neglect, and ACEs in general.
This is something that is really an intentional priority,
for the injury center, and for division of violence prevention.
But as I reflect on what that means, let me--
and posing a few questions to start us off here
in our 8 minutes that are left, I want to say that as we,
you know, do strategic plans and logic modeling
across the agency, right?
We usually recognize that kind of big thing, okay,
the goal is health equity.
But we put that in our models
and the distal outcome section, right?
Something that we are working toward, but we don't expect
to be held accountable for 10, 15, or more years.
So my first question is really for researchers, practitioners,
public health leaders in this room, I would look
to doctors Braveman and Briggs for their advice
on what are the metrics that are more proximal, the measures,
the indicators of really that we could be tracking along the way,
to assure that we're chipping away
at really progressing toward that end goal.
I think that's the first question.

>> Well, that's a great question,
and especially because, I mean, with health equity, I mean,
it may not even be-- we might not be able
to measure the end point that we want, even in 15 years.

It could be decades
and it actually could be generations before it comes.
So it's absolutely essential that we are always thinking
about the intermediate measures and we are referring
to the literature, that ties those intermediate measures
with our ultimate outcome.
And I mean, those-- so those intermediate measures are going
to be different to some extent, they're going to be different
for different health outcomes, and I think we just--
we need to do these logic models, and sort of maps,
of which, you know, which way the arrows go.
The, you know, the kind of maps
that I showed are incredibly simplistic,
because it's not just the things that weren't even on the map,
that are important, but also the interactions
between the different elements that are on the map,
and interactions of the things on the map
with things that are outside.
So it is really challenging.
But I think we have to think in those terms.
And to the best extent possible,
and think about the resilience factors.
What could make a difference along the way.
It's a slippery slope.
And I mean, it's one that I've confronted throughout my career,
and I would think everybody here who has struggled with it,
it's like you do, you know, you have to be accountable
for showing something, you know that's the progress.
But that's not going to be enough.
And sometimes does that deflect you from doing something
that would have more of a chance long-term at getting
at the upstream thing?
And I think we just have to struggle with that every time.
>> I think that's an excellent answer.
I would add to it, you know, in our work, we look at things
like birth weight, and birth spacing, and NICU stays,
and then child language development,
and secure attachment, and parental mental illness,
and then social emotional development of the child,
and then kindergarten readiness,
and then third grade reading scores, and emergency, you know,
so all of that are just gross mean averages, right?
And the work that I'm most excited about gets
to this individual difference in susceptibility,
so some of this dandelion orchid work that Tom Boyce, and others,
have put out-- work in the biomarkers is going
to be looking at individual children and their variance
on some of this resilience or risk susceptibility sensitivity
because I think in order to do our work best,
we need to know who needs what.
How much of it do they need?
And when do we know when they've had enough, right?
And we can throw a program at a group of folks,
because we think that's a good match, but there are going
to be people within that group
who have different resilience profiles,
and don't need as much of it.

So when we incorporate some of this biological understanding
of real risk and resilience, I think we're going
to get much further in some of that outcome measurement.
>> If there are questions, please approach the mics.
I will ask a second one, in the interest of time,
we have three minutes.
But you know, as I reflect on what you all have shared,
and think about the resources that we've developed recently
in terms of prioritizing primary prevention of early adversity,
like violence, in achieving multiple goals, you recognize
that there's primary prevention, but of course, we need secondary
and tertiary prevention efforts as well,
that are trauma informed.
We need trauma informed systems.
You know, and all of this is a very complex interplay
between risk and protection.
But I would ask, ask the panel and others, for thoughts
on what are the sort of policy levers
that you see in this space?
We've recently gone through this exercise
of developing these technical packages,
based on the best available evidence and the one
for preventing child abuse and neglect,
or preventing early adversity in general,
really prioritizes policy level.
Interventions or strategies first, and then norms,
and then goes to the kind of programs that, of course,
that's where most of the evidence base is,
because we've been trying to program our way
out of these problems for decades.
But we know that we're going to need to like, shift our focus,
and really, you know, one of the major ones that we--
that is in our technical packages really, you know,
providing economic supports to families,
through your family friendly business policies, for example,
paid family leave, things like this.
But I'm just wondering, from your view,
what are the policy levers in this space
that can really help us on our way
to reducing these health iniquities?
>> Until we pay for prevention it's going to be sparse.
>> Yeah, yeah.
>> We were 100% grant funded
for the first eight years of our existence.
We were raising about a million dollars
of grant funds every single year, and most people don't have
that capacity, that energy, that drive.
So, until we figure out how to pay for prevention,
we are not going to see widespread prevention programs,
no matter how evidence-based they are,
no matter how impactful they are,
no matter how comparatively affordable they are.
The return on investment when you intervene early is profound,
compared to intervening later.
But until we figure out a payment mechanism, I think,
you know, that's the policy lever that I always look to.
>> Well, the policy levers that come

to my mind are the Earned Income Tax Credit,
and the Child Tax Credit, and both of those are
on the chopping block
in the administration's proposed budget.
But those have actually been evaluated, I mean,
including with some child health outcomes,
and they have been very-- they've been very popular,
so I think it's critical to preserve those, and to expand
and then in addition, these sort
of center-based early childhood development programs have,
you know, there have been a number of randomized studies,
of some of these programs,
and the outcomes have just been incredibly impressive.
And the business community has gotten behind this,
that the business round table,
and other major business groups have come out for universal--
and when you say universal, that means it's going to be paid for,
by the people who can't pay for it--
universal high quality child,
early childhood development programs.
And the-- it's the, I think, I mean,
there is an opportunity there.
There has almost been no other major intervention
with health implications that has gotten
so much support and diverse support.
And the, you know, this has been acknowledged many times,
with the obstacle, it's not a lack of science.
The obstacle is political will.
>> Yeah, yeah.
>> Well, thank you,
and unfortunately we are out of time.
We want to be respectful, but I encourage you to seek
out our speakers after the panel,
thank you again [applause begins] to Drs.
Braveman and Briggs.
[Applause]

>> We'd like to ask for our second panel to come forward.

>> Our second panel this morning is going to focus
on strengthening programs to ensure health equity,
as a component in interventions that support healthy children.
Our first presenter this morning
for this panel is Dr. Paul Jarris.
Dr. Jarris is Chief Medical Officer
and Senior Vice President, Mission Impact,
at the March of Dimes.
His overall responsibility includes advocacy,
Maternal Child Health, Consumer Education,
Professional Training, and Perinatal Data Center,
and the NICU Family Support Program.
Dr. Jarris is a nationally-recognized expert
in health care policy, clinical quality initiatives,
public health, and disease prevention and wellness.
He previously served as Executive Director
of the Association of State
and Territory Health Officials, ASTHO.

Prior to his role at ASTHO, Dr. Jarris served as Commissioner
of Health for the State of Vermont,
where he led public health, mental health,
and substance abuse for the State of Vermont.
Dr. Jarris has a distinguished career, spanning 20 years,
leading policy and care initiatives
to improve public health, at the local,
state, and national levels.
He is a Board Certified Family Physician, with over 20 years
of clinical practice, and received his BA
from the University of Vermont, his M.D. at the University
of Pennsylvania School of Medicine,
and MBA from the University of Washington.
Our second presenter for this panel this morning will be Dr.
Zakiba Henderson.
Dr. Henderson is a Medical Officer in the Maternal
and Infant Health Branch, in the Division
of Reproductive Health, here at the CDC.
She is a Board Certified Obstetrician, Gynecologist,
and leads the division's activities in support
of state-based perinatal quality collaboratives,
which currently provide support to 13 states,
and the national network
of perinatal quality collaboratives.
In this position, she also provides clinical input
into the research agenda for the maternal
and infant health branch, including activities
and pre-term birth,
and pregnancy-related morbidity and mortality.
Dr. Henderson received her B.S. degree in Biochemistry
from Oakwood University in Huntsville, Alabama,
and her medical degree from Harvard Medical School
in Boston, Massachusetts.
Our discussion for the second panel is Dr. Colleen Boyle.
Dr. Boyle currently serves as Director of the National Center
on Birth Defects,
and Developmental Disabilities here at the CDC.
Dr. Boyle began her career at CDC in 1984,
as part of a large effort to study the adverse health effects
of exposure to Agent Orange,
and herbicide used during the Vietnam war.
Following that project, Dr. Boyle joined CDC's work
on birth defects and developmental disabilities,
holding various positions of increasing responsibility
until her appointment as Center Director in 2010.
Her interests and expertise span a number of areas related
to child health and development.
She has contributed widely to the field of newborn screening,
guiding CDC's work in newborn hearing,
and congenital heart disorder screening, and has served
on the Department Secretary's Advisory Committee
on heritable disorders in newborns and children.
She has also led the development of CDC's autism research
and surveillance activities that have documented that changing,
preventing autism in the United States.
She has twice received CDC's highest award
for scientific excellence, the Charles C. Shepherd Award

for Outstanding Scientific Publication.
Please join me and welcoming Dr. Jarris.
[Applause]
>> Well, thank you very much.
It's really a great pleasure to be back here at the CDC.
It feels like coming home to family.
And also I want to thank Lee Anders for inviting me,
and the March of Dimes, to speak.
And also for the leadership you provide
for many years here at the CDC.
So I also am very pleased with Dr. Fitzgerald,
that she will have a real interest, I mean, yes,
it's about brain development,
but she will also have a real interest in health equity
and I've worked with her for years on that.
And, in fact, as you may know, she and Dr. Montero are
in the U.S. Virgin Islands in Puerto Rico this week,
where we clearly have equity issues and problems,
and frankly are not treating our citizens there the way they
should be treated.
And again, it's a pleasure to be on the panel with Kiva,
who we worked so closely together
with on the national network of perinatal quality centers,
an important initiative, to make sure women actually get the care
they need, when they need it, which so often is not happening.
And Colleen, thanks.
It's great to be up here with you.
So I'm going to start a little bit,
and three things I'll talk about.
And actually I wasn't even nervous
until Jerome mentioned my name [laughter],
then I became nervous, and like, now I've got to live
up to this [laughs], but three things I want to talk about.
One is brain development doesn't start at birth.
Brain development starts way before birth,
and childhood development starts way before birth.
And it is very interesting how many people conceptualize it all
about from birth on, and early childhood,
when in fact things go back.
And I will have a few slides to show you on that.
I'm going to also talk to you
about the national collaborative we have,
which is the prematurity prevention collaborative.
We have over 300 different organizations.
CDC is very involved.
I want to thank Eve for your leadership in that.
And Dr. Braveman is leading in one area, also,
and we're very fortunate to have her resources with us.
So I'll tell you a little bit about that
and what is driving it.
Because that is all about equity.
And thirdly, just to talk about how we built equity
into that initiative, because we know, and we wish and we have
to get to the place where working on equity is part
of what every public health professional does.
Both working-- using the World Health Organization's terms
Goodness, what are we trying to do in terms

of lowering pre-term birth,
or improving child health, but fairness.
What are the gaps there, and how do we close those gaps?
And we need those two things to go hand in hand.
We also know we're not there yet, as a country.
And so recently, for example, a wonderful--
about a year ago or so, maybe two now,
a wonderful report was put
out by the IOM called the Vital Signs,
which was to develop a measurement
for population health that we can use
across the whole country,
an agreed upon measurement standard, and if you read it,
they said that they decided they weren't going to actually break
out a special measure for equity, that it was going
to be embedded in every other area.
That is our aspiration.
But when it was released to the National Press Club,
I think I spoke on the last panel, and it wasn't until I,
and George [inaudible] who was on that panel spoke,
in the entire production, that health equity even came up.
And they are now working on measures,
and they're picking one measure per--
one measure per area they're measuring.
That one measure means you don't have a goodness
and a fairness measure.
So you know, we're just not ready yet.
We have to recognize that equity is a specialty,
where we have academia.
We have governmental leaders, practitioners, and we need that.
But we also need to build it into everything else.
We did a lot of research back with ASTHO
on the State Health Agencies, and around their work in equity.
And found that those that were most funded by the Office
of Mental Health, those that were most effective were those
that had somebody at the commissioner level,
or show level, who was the expert
and led equity throughout the entire organization,
as an internal consultant, and they had a unit that worked
on health equity specifically.
And so that combination of overall leadership,
with embedding it everywhere, I think is the way we have to go
until we're ready for it to be everyone's work.
So showing you this, to give you some context.
Because March of Dimes, as you know,
works on equity in pre-term birth.
Or you may not have known the equity part of it.
That is where clearly we are going as an organization.
If you look at this, you'll see the green bars are the rates
of pre-term birth, based on last menstrual period,
which is how the United States did it until 2014.
And now we switch to the blue bars,
which is how we use what is called obstetrical estimate,
or a based upon an early ultrasound.
But what you can see is a number of years, about eight years
of declining rates of pre-term birth in this country,
which is excellent, but what happened in 2014 and 2015?

We actually had a statistically significant increase,
and I will show you a little bit more about that increase.
2015 to 2016 a 2% increase.
That represents about 8,000 additional pre-term babies
being born.
So not only do you see an inflection in the curve,
but we see a worsening.
And as I think that maybe Dr. Braveman mentioned,
compared to any other highly developed nation,
the United States is probably in the bottom 10%.
We are just above Oman in most of these measures.
So we do poorly internationally
and we're getting worse nationally.
But there is more to it than that.
It's even-- and I hate to be a downer, but if we look
at the change between 2014 and 2015, the increase was
in non-Hispanic, Black women and Hispanic women.
So less goodness, less fairness, 2015 to 2016,
you can see on the right side of the slide that all racial
and ethnic groups increased,
but higher increases among women and people of color.
So this is a big wakeup call for our country.
The reason we took a look at pre-term birth,
because pre-term birth and the conditions associated
with it are the biggest killer of children to age 5, globally,
as well as in the United States.
So if we're looking at infant mortality, we've got to look
at pre-term birth, as well as other things.
The fact that we are doing so poorly, and that one
in ten babies in this country is born pre-term,
with all that means for them, it's mind boggling
that the biggest killer of children
through age 5 is not an issue in this country,
and one of the things we're trying
to do is to make it an issue.
How do we talk to people so people recognize it?
And the fact that we have these disparities
in maternal mortality and infant mortality and pre-term birth,
and that there is about a 31-year historical lag
between black infant mortality and white infant mortality.
That is outrageous.
And what are we doing about it as a country?
Art James, who many of you may know, as this great slide
that says Do Black Babies Matter?
Because we're not closing that gap.
So this, to us, was a huge wakeup call.
And that is what led to the collaborative we're doing.
Now, the 2017 report cards came out, because we're now working
with the CDC, and folks in Wanda's Shop and the March
of Dimes Perinatal Centers to say,
you know, why is the increase?
What we do know is that it is widespread.
So, in fact, 45 states had worsening
of pre-term birth rates.
That is terrible that that is happening.
Now, we are looking at a number
of different factors including we do know it's late pre-term,

between 34 weeks and 37 weeks, so we don't know
if we're slipping on the progress we had made
on early elective deliveries,
and preventing non-medically indicated deliveries.
But we still don't know the reason.
And like so many of these things,
there are probably many reasons,
and our science isn't good enough to capture certain things
like increases in stress among women right now.
Which his a very stressful environment, particularly
for people of color or, so, you know,
that is going to be hard to show.
So this is basically the map of the country,
to show the red is the poor states.
There are four states who have hit tremendous 8.1% pre-term
birth rate, and Washington State is quite a diverse state,
so it also can be done in the state diversity.
We calculate a disparity ratio.
So this is a methodology adopted from Healthy People 2020.
And what it does, we basically look at the racial
and ethnic group with the highest rates of pre-term birth
and compare them to the average of other groups.
There is no good, perfect way to measure disparities or equity.
You can criticize any one of them,
but we think this is the best we have.
And someone asked the question about measurement before,
we really do need to sit down with people like Brian Smedley
and Tom Laviste who are the experts
in this area, and come up with something nationally.
But the point here is, we got worse as a nation, as we saw,
in the other statistics, worse as a nation
in terms of our iniquities.
And this is a map, now, of the iniquities, and according
to the disparities index across the country.
Some of these states you would expect.
Look at Washington State, very interesting.

They were the state that had the best rates of pre-term birth.
But they are doing poorly in terms of equity.
So one of the reasons we think this is so important is
to get back to the message of goodness and fairness.
To say to Washington State, don't rest on your laurels.
You still have an issue here that you have to look at.
And what you're doing overall may be working well,
but it's not working for lots of populations there.
So we get a lot of attention out of this.
And it really is a-- we released it last week,
and it's a great opportunity to start talking
about social determinants, structural racism,
and the impact of that.
The other thing that we continually stress is
in this country there is either an implicit or explicit bias
that these iniquities are based
on either some pre-determined genetics or group flaws.
And we're very clear that this is not pre-determined genetics,
and there are studies, like inner growth 21st
that will show women

of different racial ethnic nationalities around the world,
if they're in optimal health, with optimal care,
do approximately the same.
And the differences between the groups is bigger
than the differences-- uh, within the groups is bigger
than between the groups.
So we don't believe this is genetically pre-determined.
But we also don't believe that this is a matter
of group behavior, and I don't think anyone
in public health would believe that, frankly.
But the rest of the world doesn't necessarily know.
In fact, even YouTube of political leaders
at the governor level making comments like,
well if those people only behave more
like the majority we wouldn't have these problems.
And I won't mention the person's name, because I might get shot,
but you would know the name of this person.
So we have got to change that narrative.
Part of what we're doing, so we can recognize that this is due
to the toxicity we have created in this country.
And that this is baked into our nation, the racism,
the historic structural and systemic racism is built in,
that is causing these stressors, that affects epigenetics,
and as Dr. Braveman also went over,
also affects the allopathic load, and the immune system,
and all of these other things.
It really makes great sense biologically,
it's very plausible, and March of Dimes is leading research
into the effect of stress on epigenetics, and expression.
So I put this in here, because I know
that Dr. Fitzgerald is now your director, and I've been talking
to her for years, and she actually now has extended
to include prior to birth in her initiative,
at least the last time I saw her present it.
But long-term cognitive impairment is affected
by prematurity.
So as we see, this is a life cycle approach we have to take.
There are a couple of things that are very clear.
We don't make healthy babies in nine months.
We're trying to change that narrative.
You can't take sick women, give them nine months
of prenatal care, now matter how good it is,
and expect to have healthy babies come out.
So 40%, these are children born very pre-term or pre-term.
And you can see the definitions there.
A 40% increase in the risk of significant cognitive deficits
of school age, and then the--
even if they don't have a neurological event, like a bleed
or something else going on, they still have a greater chance
of having cognitive impairment.

One of the explanations possibly for looking at this is
that normally a brain will develop in the--
well, while the baby is still in mom,
in the most natural environment for that baby, and there's lots
of neurological development going on there.
No matter how well we support a baby

in an extrauterine environment, in the NICU,
it's just not the same.
And it does affect, we believe, to use Dr. Braveman's theory,
research to demonstrate that the extrauterine environment does
alter the developmental trajectory.
Smaller cortical area, microstructural abnormalities.
There is probably some threshold at 28 weeks,
where before 28 weeks, the brain development is much more
severely affected, but any decrease from the full-term baby
at 40 weeks is going to impact brain development.
So we really want to make sure that moms make it,
and babies make it as close to term as possible.
Which is why these early elective deliveries,
that are scheduled deliveries at 37 weeks,
or scheduled C-sections, are just not a good idea,
unless they're necessary for the safety of the mom and baby,
and unfortunately they're happening way too often,
and often a woman isn't even given a choice.
We're scheduling your C-section.
And it made me wonder about that prior video,
why was that C-section scheduled for a woman
who had never had a baby before?
So visual spatial reasoning, visual memory,
slower processing speed, less cortical white matter,
smaller thalamus which are involved
in sensory and motor signaling.
These are significant things that affect these babies.
And to look at it another way,
the risk of special education needs, by gestational age
at delivery, and you can see that look at 37 weeks,
which we consider term, for some-odd historic reason,
it's still three to four weeks early, so I don't know
who decided that is term.
But 40 weeks is the referent group
where you have the lowest rate here, but you know,
even at 37 weeks, you have a 36% greater odds that there is going
to be needs for special education.
So it's very important that we address pre-term birth in terms
of the trajectory for the child.
This is something called the brain card,
the March of Dimes developed as a way to show people
in a simple way the difference between-- in brain development,
and why it's important to continue.
Now, the brain does develop, you know, if a baby is born pre-term
and cared for, but again,
that extra-uterine environment is not the same
as it is naturally developing, and it does have consequences.
So that is just my pitch.
Please remember, no matter what you're working on, and I'm just
as guilty of this as anyone else, I worked for years
on chronic disease, and started to think about kids
with type 2 diabetes at 18 years old, five or more when you're
over 65, I personally didn't think about the impact
of the birth process on chronic disease.
Pre-term babies have a higher rate of hypertension,
higher rates of diabetes, we need to start including
that baby's development before birth in all our work.

So we pull together, based on this challenge
of seeing worsening going on, and this was
after the 2014-15 increase, we said there is something going
on here that is not right,
and we knew for many years the disparities
in our heart rates compared with other nations, and things,
right, so we did a process
where we first did key informant interviews, for about 15 leaders
in government, in clinical medicine, and public health,
community groups, organizations,
where we asked them what is it this, as a country,
we need to do, as a field of maternal child health,
if we're going to turn the corner, start lowering the rates
of pre-term birth again, and start closing these iniquities.
And so you can see some of the groups
that were here were very grateful for the CDC support
in this, and currently, Wanda Barfield
and I co-lead this collaborative.
But very important, all levels very important
that we also have parents in the room
who can experience it, and can talk to us.
So you'll recognize these groups here,
and these are obviously very influential groups.
The central challenge, this was very consistent
with what the key informant interview said,
surveys of maternal health professionals,
and what the group came up with, is that we have
to approach equity and pre-term birth hand in hand.
You cannot separate the two in this country.
You can't work on one or the other.
I mean, you know, for example, you could close disparities
by worsening the rates of those who are doing better.
We don't want that.
Like Washington State, you could have great rates.
But there's big disparities.
We don't want that either.
So we have to, in this country, work hand in hand.
And it was very gratifying, oh man, five minutes!
Did that work for any other panel [laughter],
so to go through this again, this is critical,
this is what we're trying to achieve.
And we have a steering committee that I will tell you
about in a minute, about that.
We came up also-- this is what happens
when you only have five minutes left,
with other areas we are going to work on, we have a group looking
at clinical and public health practice, and how do we do more
of what we need to do?
There are so many evidence-based interventions, 17P,
for women with a prior pre-term birth.
Aspirin. A free, well almost 20 cent pill given to women
who have risk factors or history of pre-eclampsia.
We have not found a single system in this country,
and we're going to ask, or go looking,
that has taken aspirin on systematically.
And the problem there is nobody gives you a piece of pizza
or a sandwich for a 20-cent pill, so maybe we need

to make it an orphan drug, and then we'll see it being used.
But so often, Oregon's study of 17 hydroxyprogesterone,
which is a steroid, given and how many women received
that who had a history of pre-term birth.
They only used four shots rather than the full series,
gives at 36 weeks, between 18 and 36 weeks.
Guess what percentage of women
in their Medicaid data base received even four shots
in this series if they had a history of pre-term birth?
Less than 10, and that is
in what is considered a pretty good health system.
And I could keep going on with other states.
It's quite problematic.
So if we are working on this, and I'll get a little bit more
into it later if I have time.
Across the board, I'll go through this stuff.
But again, as we've heard so much,
we have to look at the life cycle.
And I think-- I don't remember who said it.
You can't have a healthy baby unless you have a healthy mom.
And so-- and believe it or not,
that's a challenging notion in this field.
We also know that we have
to include families in the communities.
Healthy Start, City Match and Stork's Nest are part of this.
We need to know how to work with people
in a culturally sensitive way where they live, and the data.
There are lots of issues around setting goals for health equity,
and again, I don't have time to go into that.
But we are working on that now.
The Health Equity Work Group was the first group we got together.
So we brought about 30 health equity specialists
from academia, from practice,
from community organizations together,
to spend two days looking at how do we take the science
and practice of health equity and apply it to pre-term birth?
And this group is led by Arthur James, Fleta Mass Jackson,
Diana Ramos, these are names you probably know.
And they are working on several things.
But the concept here is let's bring a group
of experts together to support all the other groups.
Guiding principles for those groups?
How do you take an equity approach
to the work you're doing in all those other groups?
A glossary, because there are so many terms and definitions
and how do we use them, and talk about things?
And then they are working on a consensus statement,
basically saying, you know, as we've heard before, this,
we need multiple sciences to come to the table.
This is not just
about biological science, clinical sciences.
We need economists, sociologists, anthropologists,
women's study specialists,
to come because they each have a way to approach this,
and as...I can't think it was Paul said, you know,
I think it was you, who said basically this is equity--
healthy equity is much more than health, and we've got

to approach this in other ways,
meaning the sciences have got to come to the table.
Even if all-- so we have over 300 organizations, like ACOG,
and AWAN, and AAP, and ASTHO and HO, even if all we did was
to influence those organizations,
and there are probably a million constituents and members,
we would have accomplished something.
But of course, we want to go much broader than that.
So that was the first group.
Clinical and public health group,
I won't go into all the details.
They are working on low-dose aspirin.
They're working on 17P, they're working on intentionality
and birth spacing, still 45% of the pregnancies
in this country are unplanned.
Planned pregnancies are healthy pregnancies.
And they are doing that specifically
with an eye toward populations that are geographic,
racial and ethnic, that have been underserved.
So, again, the equity there is clearly--
it's very interesting to see the excitement
of ACOG's Executive Director around this equity approach.
I was a little surprised, frankly,
but he was passionate about it.
Policy and communications workshop.
There are policies in this country
that are simply not conducive to health.
Certainly we have all the history of the Jim Crow Laws,
and we have history of redlining,
which now is much more subtle, but still does happen.
But the policies, for example, around social--
other social determinants, for example,
we know that paid parental leave, maternity leave,
is associated with lower infant mortality.
We know that if we really want women to be able to care
for their children, we have
to give them an adequate minimum wage.
We have to make sure they have sick time off, so they can go
to the doctor's office.
So we are working on a number of those things.
We've invited housing to that.
We are going to expand beyond it.
Then the communications,
the idea here is how do we make this an issue,
that it should be, and how do we talk to different populations.
So, for example, with contraception,
we know there is historic coercion.
So how do we reach people in a way that is sensitive
to that historical coercion,
and the justifiable reaction they may have based on that.
Now, this I stole from Paula.
The research group, and she is really the thought leader
in this area.
I won't go through all this, but the idea here is we have a view,
and I bump into this a lot, that it is all biologic.
And unless you understand the biologic mechanism,
you just don't know what to do.

That epidemiology, all those other sciences find
associations, they're not causal
and so you don't know what to do.
So basically Paula and other renowned scientists are going
to write a paper addressing that,
saying this isn't just all biology,
that this all takes place within the context of environment
and social setting, and therefore,
we need to bring those sciences in.
And that may sound like not a big deal,
but to get that published in a prestigious medical journal
by prestigious biological researchers is going
to make a big statement.
So that group is beginning to work on that there.
So the approach here, and I'm out of time, you don't have any
out of time ones do you?
Good, oh, no, you do [laughter], shouldn't have invited it.
The approach here really is, we have a specialty, a science
and practice of equity.
And we absolutely have those specialists, we need them
to support and work with everybody else, in this case,
in the collaborative, and in public health.

But that's not enough.
You can't just have this be the job of people
in six cubicles over there.
They've got a spread to the organization, and everyone
in public health must learn to work in this way.
We need to set those goals for goodness and fairness,
and view the world through a health equity lens.
We have embedded the health equity experts
in every work group.
So that they're there
at the table during the discussions and helping them.
I think this is going to help.
I know it's shifting our organization.
It's shifting the prematurity collaborative, and you know,
I suggest that specialty with embedding is an approach
that you all take a look at.
And it's not easy.
This is my last thing I'll say.
It's been a real struggle working with some
of the communication staff, and people like that
who just don't know how to talk about it.
Or they believe, well you know,
a lot of the press won't want to talk about this.
And we've got al of training to do of people.
So with that, I'll finish and thanks very much.
[Applause]

>> Good morning.
I know we are approaching the lunch hour,
so hopefully I'll be able to hold your attention,
and that your stomach growls will not deter your attention
from my talk.
I'm really excited to be here.
I'm excited, because this work that I get to tell you

about is something very personal,
something that I think really makes a change and an impact
on the care of women and infants in this country.
I am really excited to talk to you today
about a program supported by CDC that focuses
on truly giving children the best start by improving care
and outcomes for pregnant women and newborns.
I know that there are different aspects of tackling the problem
of disparities in health equity, and I'm going to be talking
about the health care aspect,
because it is an important aspect
that once patients do access care,
that they are receiving equitable care,
and that the care that we provide is
of the highest quality.
So, I'm going to first give you a little background information
on the need for improving perinatal health, and then talk
to you about how perinatal quality collaboratives work
to improve health and outcomes,
and I'll also discuss some examples and opportunities
to reduce perinatal health disparities,
and to improve health equity for pregnant women and newborns.

So the seeds of success in every nation on earth are best planted
in women and children.
Maternal and infant morbidity and mortality are key indicators
of a nation's health status, and are associated with a variety
of factors, such as maternal health,
access to high quality care, public health practices,
and socioeconomic conditions.

And this graph of infant mortality rates, of organization
for economic cooperation and development countries,
you see the number of deaths of children under the year
of age expressed per thousand live births
for the countries listed here.
I know you can't see the names of the countries, however,
I would draw your attention
to the United States, which is in red.
With an infant mortality rate of 5.8 at the time of this ranking,
and as you can see, the United States falls at the bottom
of this ranking of developed countries, despite spending more
on health care per capita than any other country on this graph.

The good news, however, is that since 1980,
the nation's overall infant mortality rate has declined
approximately 52%.
This includes a plateau from 2000 to 2005,
followed by a decline to 5.82 in 2014, however,
there was a slight rise from 2014 to 2015 to a rate
of 5.9 infant deaths per 1,000 live births in 2015.
However, this national decline
in infant mortality has not been equal.

While we've seen encouraging declines
in infant mortality among African Americans,
a critical gap still persists.

In 2015, black infants died
at 2.3 times the rate of white infants.

One of the main causes for the higher infant mortality rate
in the United States compared
with other industrialized nations, as discussed
by Dr. Paul Jarris, is the relatively higher number
of pre-term births in the United States.
The pre-term birth rate rose significantly by more
than one-third from the 80s to the early 2000s, but then fell
for eight straight years in a row to 9.57% in 2014.
However, the pre-term birth rate has risen again.
For two straight years since 2014.

As with infant mortality,
there is also marked racial disparity in pre-term birth.
In 2007, the pre-term birth rate among black infants was still
higher than that for any other race or Hispanic origin group,
and was more than 1.5 times the rate in non-Hispanic whites.
And in 2015, the rate
of pre-term birth among black women was still about 50% higher
than a rate of pre-term birth among non-Hispanic white women.
Although there has been a decrease in pre-term birth
between 20-- excuse me, between 2007 and 2015--
most of the decrease in pre-term births has been due
to a decrease in late pre-term births,
and not early pre-term births,
which contribute to higher mortality.

Another measure of our nation's health, deaths to pregnant
or recently pregnant, women has been on the rise.
As you've probably seen recently in the news media,
this increase has been seen significantly in all races,
but particularly has impacted minority populations.
Although this increase may be partially attributable
to better identification of maternal deaths over time,
maternal mortality does not appear to be decreasing,
and this increasing trend has been consistent when you look
at data from the National Center for health statistics,
and also from our national surveillance system
of pregnancy related deaths.
The pregnancy mortality surveillance system,
which includes deaths of women while pregnant,
or within one year of termination of pregnancy.

As is the case with infant mortality,
there are striking racial disparities
in pregnancy-related mortality in the United States.
Black women have a three- to four-times higher risk of dying
from pregnancy complications than white women,
and this trend has persisted for over 25 years.
Also, while maternal deaths are relatively rare sentinel events,
severe complications of pregnancy are
about 100 times more common than maternal deaths,
and the disparity exists also with maternal morbidity.

Substantial components of our nation's health are influenced

by decisions made in health care facilities,
and by health care providers.
Collectively, these decisions comprise our health care
delivery systems, and there is definitely room for improvement.

State perinatal quality collaboratives,
or PQCs are multi-disciplinary networks
of perinatal care providers
and public health professionals working together
to improve pregnancy outcomes
by advancing evidence-informed clinical practices
through continuous quality improvement.
PQC members identify processes that need to be improved,
and use the best available methods to make changes
and improve outcomes as quickly as possible.
They do this by working with local clinical hospital teams,
experts, and stakeholders
to spread best practices using rapid data collection
and feedback of data to meet goals to improve care.
State PQCs include key leaders in private, public,
and academic healthcare settings, with expertise
in obstetrics and neonatal care, and in quality improvement.

Strategies of PQCs include use
of the collaborative learning model,
such as the breakthrough series collaborative model,
developed by the Institute for Health Care Improvement,
use of rapid response data to provide feedback
to clinical teams on their progress, and the provision
of quality improvement science support
and assistance to clinical teams.
The ultimate goal of state PQCs is to achieve improvements
in population level outcomes in maternal
and infant health throughout the state.

Although individual institutions and organizations have been able
to achieve some improvements in perinatal care outcomes,
regional PQCs serve a unique role, because they take
on the responsibility of improving outcomes
for the entire region.
They understand the regional network of perinatal care,
and they collaborate among teens in both hospital
and community settings.
And they have the ability to compare the performance
of hospitals that are operating within a similar context.
Members of a regional perinatal quality collaborative represent
a community of change.
And this model has been shown to be successful
for rapid dissemination
of evidence-based protocols and processes.

There is growing evidence of how PQCs have contributed
to important changes in health care delivery
and how their work has led to significant improvements
in perinatal outcomes.
Such evidence includes reductions
in elective deliveries without a medical indication prior

to 39 weeks gestation,
reductions in healthcare associated bloodstream
infections in newborns,
reductions in severe maternal morbidity,
increases in appropriate use and documentation of use
of antenatal corticosteroids to improve fetal lung maturity
and improvements in the use of progestin therapy
for prevention of pre-term births.

CDC has been providing support
to state perinatal quality collaboratives since 2011,
and the main goals
of CDC support has included providing support
for funded states to expand their ability and their efforts
within a state to improve perinatal outcomes,
by enhancing their ability to collect timely data,
increasing hospital participation in the PQC,
making the PQC truly representative
of the entire state, and also expanding the range of neonatal
and maternal health issues addressed by PQCs.
CDC has also worked to transfer experiences and knowledge gained
from established PQCs to help additional states,
including a webinar series on various topics
with expert presenters throughout the country,
the development of a resource guide to provide assistance
to states that may wish to form a PQC, or may have challenges
with PQC development, and also support for the development
of the national network
of perinatal quality collaboratives.

In 2011, CDC's division of reproductive health entered
into a cooperative agreement
with three established perinatal quality collaboratives
in California, New York, and Ohio, to improve perinatal care
through a quality improvement model.
And in 2014, CDC support for PQCs expanded
to include three additional states in Illinois,
Massachusetts, and North Carolina,
to further support shared learning
and collaboration among states.

As of September 2017, CDC now provides support
to 13 state PQCs, as well as a new coordinating center
for the National Network
of Perinatal Quality Collaboratives.
The states currently being supported include: Colorado,
Delaware, Florida, Georgia, Illinois, Louisiana,
Massachusetts, Minnesota, Mississippi, New Jersey,
New York, Oregon, and Wisconsin, covering key states in all
of the major regions of this country.

As you can see by this map, most states currently have a PQC
in varying stages of development, as indicated
by the darker colors on the map.
There are some states that are further along in the development
of the infrastructure and activities
for an ongoing statewide perinatal collaborative,

and there are other states that would benefit
from further support and assistance
in expanding their efforts.

In collaboration with the March of Dimes,
CDC has supported the development
of the National Network of State Perinatal
Quality Collaboratives.
As a consultative and mentoring resource to increase capacity
in states to improve maternal and infant health.
This network was officially launched in November of 2016,
with participation of 48 out of 50 states in over 20 partners.
The National Institute
for Children's Health Quality was recently awarded
to coordinate the activities
of this network as of September 2017.
The goals of this network are to strengthen leadership
and state collaboratives, to identify
and disseminate best practices for establishing
and sustaining PQCs, and identifying
and developing tools, training, and resources necessary
to foster the sharing of best practices
to support a sustainable PQC infrastructure.
And the ultimate goal is to reduce maternal
and infant morbidity and mortality in this country,
making it the best place to give birth and be born.

The central mission of this network is
to support the development and enhance the ability
of state perinatal quality collaboratives
to make measurable improvements in statewide maternal
and infant health care and health outcomes.

Here are some examples of maternal
or obstetric focused initiatives undertaken by PQCs.
As you can see, there are a variety
of efforts spanning the prenatal antepartum
and post-partum periods, and including efforts
that impact both maternal and neonatal outcomes,
and allow for collaboration among both obstetric
and pediatric care providers.

There are also a large number of neonatal focus initiatives
that include optimization of care, in the delivery room,
in the neonatal intensive care unit, as well as efforts
to improve well newborn care.
In addition to efforts to spread best clinical practices,
PQCs have also undertaken efforts to improve data,
excuse me, to improve data quality,
and to make administrative data more useful for scaling
up of quality improvement projects statewide
and reducing the burden of data collection.

Now as we move forward with our next set of awardees,
these are the initiatives
that the current CDC supported collaboratives are addressing.
Some clinical topics have multiple states working on them

as indicated by the numbers in parentheses,
which presents further opportunity
for sharing between state PQCs.
PQCs that are supported by this program are encouraged
to integrate the cross-cutting issue of health equity
into their quality improvement initiatives,
as much as possible.
While aiming to improve outcomes for all patients
through quality improvement initiatives, it is possible
that the disparities between different groups can
simultaneously widen.
In addition, certain initiatives would be most successful
if the highest risk groups are targeted.
So, it is encouraged that all state collaboratives make sure
they pay special attention
to how their efforts are impacting disparate groups.
I'll now discuss a couple of examples
of how CDC supported PQCs have incorporated health equity
into their work.

Pre-term birth is the number one cause of newborn death
in the state of Ohio,
and progesterone is an evidence-based therapy shown
to reduce pre-term birth by more than 30% in women
with prior pre-term birth, or with a history
or identification of a short cervix.
The Ohio Perinatal Quality Collaborative, or OPQC,
OPQC has tested strategies for implementing this intervention
with outpatient obstetric clinics,
and successful strategies are currently being disseminated
to other obstetric practices throughout the state of Ohio.
The aim of this project is to reduce the rate
of pre-term births in the state by increasing the screening,
identification, and treatment of pregnant women at risk
for pre-term birth who will benefit from progesterone.
Because the rate of pre-term-- excuse me.
Because the rate of pre-term birth is highest among black
women in the state, they were targeted for intervention.

There are many barriers that have been identified for women
to receive progesterone therapy to prevent pre-term birth,
including health system factors, provider factors,
and patient level factors.
The Ohio Progesterone Project focused
on addressing the patient provider
and health system barriers to improve uptake
of this important therapy.

As part of their efforts, excuse me, an important part
of their effort was the development
of various culturally-competent informational brochures
to educate patients and providers about pre-term birth,
infant mortality and how progesterone can help prevent an
early delivery.

The Ohio Progesterone Project was associated
with a sustained reduction

in pre-term birth before 32 weeks gestation in Ohio.
Births before 32 weeks decreased in all hospitals by 6.6%
and births before 32 weeks to women
with prior pre-term birth decreased by 20.5%
in all hospitals, by 20.3% in African American women,
and by 17.1% in women on Medicaid.

Another example is an ongoing initiative
to reduce unnecessary caesarean births.
Caesarean section-- excuse me,
caesarean section delivery increases risk
for both the mother and the infant, and the rapid increase
in caesarean birth rates over the last two decades,
without clear evidence of concomitant decreases
in maternal neonatal morbidity
or mortality has raised significant concern
that caesarean delivery is over-used.
The California Maternal Quality Care Collaborative has developed
a new toolkit to support vaginal birth
and reduce primary caesarean
which is a comprehensive evidence-based how-to guide
designed to educate and motivate maternity commissions and teams,
apply best practices for supporting vaginal births,
and to reduce unnecessary caesarean section births among
first-time mothers with pregnancies that are term,
singleton, and in a vertex presentation, also referred
to as NTSV, or low-risk first-birth caesareans.
Black women in the state experience higher rates
of low-risk first birth caesarean.
In a recent study in California, black women were
about 30% more likely to have a low-risk first-birth caesarean
section compared to white women.
Implementation of this improvement project will include
targeting, and addressing this disparity in California.

CDC is working with PQCs
to actively monitor how their quality improvement initiatives
incorporate health equity.
Increasing attention is also being given
to how perinatal quality improvement projects impact
disparities, and how interventions can be targeted
at the most vulnerable groups.
Efforts include education campaigns for both parents
and care providers, improving access to care, and provision
of higher quality equitable healthcare.
In addition, the National Quality Forum, an organization
that sets standards for healthcare quality measurement
in the United States is particularly seeking composite
and outcome measures, and measures that are sensitive
to the needs of vulnerable populations,
including racial ethnic minorities,
and Medicaid populations that may be used
for further quality improvement efforts.

Although the work of PQCs mostly focuses on the health system,
patient level, and provider factors that contribute
to disparities, the real challenge lies

in addressing the structural factors, as listed here.
As PQCs grow, and move outside
of the inpatient hospital setting for their work,
there may be more opportunities
to address these factors as well.

Partnerships, collaboration
and sharing are what make the PQC model so successful.
The National Network of PQCs provides a forum
where successful strategies, tools,
and metrics can easily be shared,
and significant improvements in population level outcomes
and health can be realized.
Multiple partners working together
to reach this common goal is more effective
than each individual entity working alone.
As this program moves forward, it is crucial
that we include partners to help us remain committed
to making sure that health equity is a priority
and that initiatives include special effort
to improve the health of those who have experienced social
or economic disadvantage, so that all mothers and infants
in this country receive the best care,
and to give children the best start at a healthy life.

I'd like to take this time to thank the California
and Ohio Perinatal Quality Collaborative,
that has provided leadership in this work and leadership
in providing assistance to other states throughout the country.
I'd also like to acknowledge Dr. Barfield, the Division Director,
for her support of this work, and Drs.
Callahan, Shapiro, Mendoza, and Olson,
also for their support and input.
And also the rest of our team who have put a lot of work
into this work, Daniel Suchtab,
and Emily Johnston.
I also would like to thank Dr. Fitzgerald
for her support of this work.
It is because of her support of improving care
through State Perinatal Quality Collaboratives
that we have been able to grow this program
and to support our National Network to provide support
to states throughout this country.
Thank you.
[Applause]

"I wish I would have seen you
sooner, did you tell anybody