

DataSpeak: Measuring the Return on Investment in Maternal and Child Health Programs

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Program Transcript

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Good afternoon. Welcome to today's program, "Measuring the Return on Investment in Maternal and Child Health Programs." My name is Gopal Singh and I am a Senior Epidemiologist and Researcher with the Office of Epidemiology and Research in the Maternal and Child Health Bureau (MCHB). The DataSpeak series is sponsored by the MCHB.

Recent events have highlighted the fact that there is a need to show policymakers, funders and other stakeholders that investments in maternal and child health bring measurable returns. Measuring the economic impact of the maternal and child spending has been identified as a top priority for the MCHB. Today we are excited to have three speakers with us who can give us an overview of how to create and use economic analyses to reach out to policymakers and other partners.

First, Dr. Scott Grosse from the Centers for Disease Control and Prevention, Division of Blood Disorders of the National Center on Birth Defects and Developmental Disabilities, will give us an overview of the how economic analyses are conducted and used with examples from his work on newborn screening and asthma care. Second, Stephanie Lee from the Washington State Institute for Public Policy will discuss her institute's approach for estimating the cost and benefits of prevention and intervention programs for children at the state level. Lastly, Dr. Ricardo Basurto-Dávila, from the County of Los Angeles

Department of Public Health will present on how local maternal and child health funding has impacted low birth weight rates in California. Now, before we begin, I would like introduce Sarah Lifsey, the moderator for today's program.

Sarah Lifsey, MPP – Policy Associate – Altarum Institute

Thank you, Gopal. First, I would like to welcome our presenters and everyone who is in the audience today, thank you for joining us. Before we begin our presentation, I have some brief technical guidance for you all. First, I would like to call your attention to the DataSpeak website, which we hope you'll visit after today's program. There you'll find resources on today's topic including some that our speakers will highlight in the presentations. On the website, you will also find archives of all the DataSpeak programs going back to 2000. The slide on your screen shows some of the most recent programs that are available and the address you can use to access them.

I'd also like to point out that you're able to download today's PowerPoint presentation and additional resources directly from the screen that you are seeing now. Click on the file that you're interested in to highlight it, click save to my computer and follow the simple instructions on the screen. If you would like to make it larger, simply press the full screen button at the top of the screen and to return to the original view, press it again.

Finally, please know that your phone line will be muted during the presentations. At the completion of the program, we'll be having a question-and-answer session and we will provide instructions for asking questions over the telephone at the time. If you'd like to post a question online, you can do so at any time during the program. Using the questions box at the bottom of the screen, just type your question in and hit enter. Now, I would like to turn to our first speaker, Dr. Scott Grosse. Scott?

Scott Grosse, PhD – Associate Director, Health Services Research and Evaluation, Division of Blood Disorders, National Center on Birth Defects and Developmental Disabilities – Centers for Disease Control and Prevention

Thank you. Glad to be with you today. Where's slide – okay, next slide please. I'm going to talk with you today about how to make the economic case for specific types of Maternal and Child Health Programs. I will present two cases on which I have collaborated, one on asthma management for low-income urban children in Connecticut, and one on a national recommendation of newborn screening for critical congenital heart disease or defects. Next slide.

First, it's important to talk about some terms. When we say something is cost-effective, it could mean different things. I prefer to think in terms of value, do we get good value for money spent, if so, it's cost-effective. Some interactions save money, that is, reduce healthcare and other direct costs of care. The majority of preventive services though, result in higher total costs. In that case, the key question is whether the gains in health are considered to be worth the additional cost. Next.

Suppose you are thinking of doing an economic evaluation. First, you need to frame the question you want to address. What are the alternatives you are going to compare? An intervention is cost-effective only relative to something else. The simplest approach is to compare a specific intervention with the status quo or standard of care. Next, you need to decide what perspective you are going to use. Costs and benefits can accrue to different stakeholders and you need to decide which stakeholders you want to focus on. You also need to decide which type of economic evaluation you want to use, which depends in large part on what health comes you can or plan to measure. Next.

So the different types of stakeholders, as you can see range from healthcare system down to families. So the narrowest perspective you could take is the payer perspective, which focuses just on the single payer, such as Medicaid program, and what expenditures that payer pays that could inform a Medicaid decision on what services to cover. The healthcare sector or system perspective includes all payers and looks at total healthcare costs, regardless of who pays and who benefits. And finally, the societal perspective goes beyond the healthcare sector to include all stakeholders and costs, regardless of whether they are medical or nonmedical. Next.

The simplest type of economic evaluation is a cost comparison in which you calculate the cost of different strategies which provides important information, but it doesn't really tell you anything about the value of interventions. To assess value, you have to compare the cost and benefits. Benefits can be assessed in one of three ways, first a standard cost effective analysis to assess the change in health outcome such as cases of disease or death avoided or delayed. Second is sub-type of cost effectiveness analysis called a cost utility analysis, you combine fatal and nonfatal outcomes in a single measure of quality adjusted life-year or QALY. And third, one could put a dollar value on the health outcomes in a societal benefit-cost analysis, or BCA, also known as cost-benefit analysis. A BCA conducted from the payer perspective is a budget impact or return on investment analysis. Next.

A budget impact or ROI analysis like BCA has all outcomes measured in dollars. Unlike a BCA, it takes a payer perspective and has a short time horizon, for example what is the financial impact of paying for a service, do the cost savings fully offset the cost of intervention we see within a two or three year period. That's what a traditional ROI analysis is intended to answer, not the value or the impact on society. It's typically done after an intervention's funded by a payer has been carried out and shown to work. It's also possible to take a pilot study, which was funded by grant and calculate what the potential ROI would have been if a payer had paid for the intervention? And next, we're going to look at a potential ROI case study. Next.

The Easy Breathing asthma management program was developed in Connecticut by investigators from the University of Connecticut and the Connecticut Children's Medical Center as a way to help primary care providers follow national asthma management guidelines for at risk children. Michelle Cloutier and her co-investigators in 2005 published an impact evaluation showing that among low income children enrolled in Medicaid in Hartford, there was a 2.7-fold increase in the use of recommended medications, a 35 percent drop in inpatient admissions for asthma, a 27 percent reduction in emergency department visits and a 19 percent reduction in outpatient visits for asthma. Next.

CDC approached Dr. Cloutier about collaborating to evaluate the economic impact of Easy Breathing, based on those impressive results. Since the project was funded by a grant, we decided on a potential ROI analysis to evaluate the potential cost savings to Medicaid if it had paid for the project. Specifically we looked at what Medicaid capitated plans would have paid for asthma care with and without Easy Breathing relative to the cost of providing the intervention to primary care practices. The first step was to calculate the cost of Easy Breathing, subtracting the research component, in order to figure out how much Medicaid would have had to pay for it as a clinical practice intervention rather than the research study. The second step was to calculate the reduction in Medicaid expenditures in order to be able to calculate net ROI. That analysis was published in 2009. Next.

For the cost analysis, the Easy Breathing and intervention, which had several components you can see, the main cost was personnel cost for the Program Coordinator and physician champion. There was also some limited cost for local travel and forms. The source of the cost data were the grant and the timesheets filled out by program staff. For each of the three years of the project, the total costs were divided by the number of children with asthma to calculate per patient costs for that year. Next.

The impact of Easy Breathing was assessed using the same methods as the original impact evaluation, using a multivariable statistical analysis controlling for factors such as asthma severity. The children contributed data, both pre-and post-enrollment. Unit cost estimates for the health services were taken from 2006 state Medicaid reimbursement rates. Next.

The ROI calculations you see in this slide show that for every dollar spent on Easy Breathing during the operational period, that is years two and three, there was \$3.58 in reduced costs of care. Look at the last column for example, year 3 the program cost about \$10 per child with asthma and Medicaid would have saved more than \$36 in reduced cost for each child with asthma compared with their expected cost based on the statistical model, with children contributing data both pre-and post-enrollment. In absolute terms, we projected cost savings on average of \$26.47 per child with physician-diagnosed asthma. Next.

What has the impact been of this ROI analysis for Easy Breathing in Connecticut? First, I should note that the impact evaluation itself was very impressive and the findings were leveraged into an expansion by the state to five additional communities. The evaluation of that community initiative showed similar impacts, published in 2011. The findings of that, together with the 2009 publication of the ROI findings from the original intervention were used by Connecticut to decide to fund the rollout of Easy Breathing statewide. In fact, the Easy Breathing Program and its ROI has been found to be so impressive, that the Medicaid managed care contractor in Connecticut, since 2011, has chosen to use its own funds to supplement state funds to ensure the continued availability of Easy Breathing for children with asthma in Connecticut. Next. I would like to acknowledge the team that worked on Easy Breathing ROI analysis, both in Connecticut and at CDC. Next.

Now I'm going to talk about a different type of policy context, an economic evaluation. In 2010, a Federal Advisory Committee recommended that all newborns be screened soon after birth for a group of congenital heart defects, known as critical congenital heart disease or CCHD. As a side note, that committee is now a discretionary advisory committee on – disorders in newborns and children, is supported by the MCHB. Secretary Sibelius, in 2011, endorsed that recommendation that CCHD be added to the recommended uniform screening panel for newborn screening as infants, which is then up to states to implement. And she requested that HHS Agencies conduct additional activities to help states with implementation. Among other things, CDC was directed to analyze the cost-effectiveness of screening for CCHD. Next.

In order to do this, CDC's National Center on Birth Defects and Developmental Disabilities recruited Dr. Cora Peterson, a health economist, for two-year post-doctoral fellowship, to do among other things, the cost effectiveness analysis in collaboration with other CDC staff and external partners. A number of preliminary studies had to be done to provide the inputs for the cost-effectiveness model. First, we needed to collect original data on the cost of hospital-based screening for CCHD using pulse oximetry. Second, we needed to model the probabilities and costs for clinical services for children who screened positive, including the cost of moving the infant to another hospital, if needed, for follow-up care and diagnosis. Third, we needed estimates of the costs of hospital care for infants with CCHD who are late detected, that is, discharged from the hospital without a diagnosis relative to costs associated with

timely diagnosis. Finally, we needed an estimate of the number of deaths that could be prevented by reducing the number of infants with CCHD who are late detected. The cost-effective analysis combined the inputs from these preliminary analyses. There was an intermediate output, which was the net cost of screening after subtracting averted costs of care from the costs of the hospital-based screening. And the final output is the cost-effective ratio or net cost for life years saved by screening. Next.

The cost of screening was estimated through a study done by CDC staff in collaboration with the New Jersey Department of Health. New Jersey was the first state to implement state mandated screening for CCHD. The investigators identified a sample of seven hospitals in New Jersey and conducted a time and motion study, observing the nurses conducting the screening. In addition, hospitals were surveyed about the time – about the types of pulse oximeters and test probes that are reused. The average time required by nurses to screen an infant turned out to be about nine minutes, including the preparation time, informing parents and documenting results. The average staff cost for nurses was about seven dollars per infant using hourly costs and fringe benefits. Equipment and supplies added about the same amount, about seven dollars per infant. Next.

To identify averted costs or potentially averted costs and deaths with timely detection of CCHD, CDC conducted a study in collaboration with investigators in Florida and North Carolina with a linked longitudinal database in Florida. This database linked vital records, birth defects registry data and hospital discharges. The first objective of the analysis was to estimate the hospital costs associated with late detection. Almost one of four infants with CCHD in Florida born during 1988-2007 were classed as detected late, in terms of time into diagnosis. This required a statistical analysis that controlled for type of CCHD, other birth defects, the hospital nursery level and maternal and household characteristics. The reason a statistical analysis was needed is that the infants with – who were late detected CCHD tended to have mild conditions relative to those that were detected timely, since clinically severe CCHD are going to be clinically apparent soon after birth in the majority of cases. From statistical analysis, it was predicted that total hospital cost during infancy is 35 percent higher for infants with late detection than infants with timely detection. Next.

Well, actually, let me – I should mention that article has been published in the October issue of Birth Defects Research Part A. And also the second objective of that analysis was how many preventable deaths are due to late detected CCHD. There were a total of 66 infant deaths observed among 825 infants with late detected CCHD, or 8 percent. Of the 66, 15 deaths that occurred either outside the hospital after discharge or inside a hospital following an emergency readmission, were classified as potentially preventable. Extrapolated to the U.S. birth population of 4 million births that projects 20 potentially preventable deaths if all infants were screened for CCHD, which is generally considered a conservative estimate compared to other estimates of the number of deaths associated with CCHD. Next.

The final cost-effectiveness model was published in Pediatrics in September 2013. The cost-effectiveness model combined screening costs from the New Jersey study, which will appear in Public Health Reports soon, hospitalization costs and preventable deaths from the Florida study that were published this month in Birth Defects Research. The analysis estimate the net cost of screening of \$6.28

per infant screened and an incremental cost of \$40,385 per discounted life-year gained, which is considered cost-effective by most criteria. Usually people use \$50,000 to \$100,000 per life-year gained or per quality as a rough approximation of cost effectiveness. This is the first full cost-effectiveness analysis of screening for CCHD that has been published, there have been previous analyses looked at just the cost of screening or made approximations. Next.

So, in order – this is, I’m talking about cutting edge research just published, there are next steps. This is the economic evaluation is often just part of a process. CDC is interested in collaborating with states to assess costs and other states as screening is implemented. This includes HRSA funded states and other states that are implementing universal CCHD screening. The economic analysis can be modified to address uncertainty in the model inputs. For example, in New Jersey most of the hospitals were using probes that were either disposable or disposable tips, but if used reusable probes, the costs of screening will be lower and that could have an impact on cost-effectiveness calculations. The Florida data suggests a rather large proportion of infants with CCHD identified prior to newborn screening. Other states may have smaller percentage of infants that are late detected due to greater use of prenatal screening for example, and so this may vary from state to state.

The costs of diagnostic work-up and of emergency transfer may be higher in states with low population densities and more remote rural hospitals. In addition more studies are needed to assess other outcomes of CCHD that might be affected by screening. This study did not look at impacts on morbidity or long-term disability associated with delayed diagnosis of CCHD, so there are other benefits that might be included. Next. So I would like to close with acknowledging the large number of people that contributed to the various studies in New Jersey, Florida and elsewhere, and at CDC. Thank you for listening.

Sarah Lifsey

Thank you so much, Scott. As a reminder, if you have a question for any of our speakers, you can submit it online at any time using the question form at the bottom of your screen. I would like to turn to our next speaker now, Stephanie Lee. Stephanie?

Stephanie Lee – Senior Research Associate – Washington State Institute for Public Policy

Thanks so much Sarah. Good morning and good afternoon everyone, depending on where you are. Scott just gave us some great examples of how cost effective – cost-effectiveness analysis and return on investment analysis can be used, very – in an excellent way. He also described some of the different types of economic analyses that are available. And so what I’d like to do today is describe to you how we’ve been using benefit cost analysis in particular in Washington State, to help inform public policy. So first of all, I’d like to take kind of a broad level view, give you a background of the organization I work for and our – how we fit into the context of our state government. And then describe the methods that we use to compute the benefits and costs of different policy options and how we present our findings to our state legislators. And finally I’d like to finish with an example that’s particularly relevant to maternal

and child health.

So first of all, the Washington State Institute for Public Policy was created by our legislature as a general-purpose, non-partisan research group, specifically to inform legislative policy. We conduct most of our research at the direct assignment of the legislature, either through policy bills or budget bills. But we also take some assignments from our Board of Directors, generally to work with national foundations like the MacArthur Foundation or the Pew Charitable Trusts. As a general-purpose research group, we do all sorts of different studies; sometimes we look at different state policies and explain to our legislators how Washington State fits in with other states. Sometimes we do direct outcome evaluations of how programs are actually working in Washington State. But over the last 10 years or so, we've increasingly been asked to look at the long-term economics of certain state budget choices. The areas that we've most frequently been asked to look at are criminal justice, education, child welfare, behavioral health and so on and so forth. There are other groups in Washington State who use economic analysis, particularly in the areas of transportation and healthcare technology. But our group has really been focused on these particular social policy issues.

So when our legislature asks us to estimate the long-term economics of particular policy options, they're really asking two different questions. First of all, they're asking what works and what doesn't work to improve outcomes for people in the state of Washington? And we conduct competent of analyses as rigorous research evaluations in order to answer that question. And the second piece is, knowing what we know, about program effectiveness, what's economic? What are the total benefits we might expect to accrue to society from particular implementation of a program? What are the costs to implement that program? And what is the risk to the people of Washington? All three are very important components of our analysis.

So the approach that we use is benefit-cost analysis, and it has a number of attractive features. But particularly, as Scott mentioned, benefit-cost analysis takes the societal perspective, and that's particularly appealing to our state legislators. We're always interested in the payer perspective or the taxpayer perspective, taxpayers generally fund some of these public interventions, but we're also interested in how those interventions can affect other people in society, including the people who participate in those programs and policy options, as well as other people outside. Another appealing aspect of benefit-cost analysis is it does try to level the playing field by using dollars as a unit of interest.

So this table that I'll show you looks at two different outcomes that are of particular interest to our state legislature, crime and high school graduation, and gives an example of the types of benefits we might expect to accrue back to different members of society. So if the legislature invests in a program that reduces crime, we would expect taxpayers to benefit because they're going to have to spend less money to fund the criminal justice system. In addition other people in society will benefit because they'll be less likely to be victims of crime. For high school graduation, we would expect people who participate in programs that increase the likelihood of graduation, are also going to benefit in terms of increased earnings later in life. Taxpayers will also benefit because as that person increases their earnings, they're going to be paying more money back into the tax system.

So when we present the results of our analyses to our legislators, we usually show tables that look something like this. This is an example – a snapshot of a table that we published in April 2012 and it's focused on juvenile justice programs and juvenile justice investments. But the way we present the results across topic areas is consistent. So we like to show legislators the total benefits we would expect to accrue over the lifetime from participation in a program. These are average per participant benefits, discounted back to present value dollars. Total benefits can be broken out into taxpayer and non-taxpayer benefits, and this is something that our legislators really like to see. We also estimate the per participant cost of implementing the programs and then we present a couple of summary statistics. So we present the net benefits, after the cost of the programs accounted for, what are the total net benefits we would expect to accrue to society.

We also present the benefit to cost ratio, so for each dollar invested, how much money will we expect to come back in total? And finally, we present the measured risk. So we do a Monte Carlo risk analysis which takes a number of different simulations runs, varies particular inputs, particular key parameters, varies them so that we can come up with an idea of, say we run 1000 simulation runs, what proportion of those times do we expect the program to be economically appealing? What proportion of the time do we think a program will at least pay for itself? And this is a really important number to our legislators because they want to know that they're making a relatively safe investment.

So to give you an example, I thought I'd give an example from home visiting. Whenever we are trying to make a statement about the benefits and costs of a particular program or policy intervention, the first step is to review all of the available research on that program. Now in order to estimate the effectiveness of a program, we could do primary outcome evaluations ourselves, and sometimes we do. But, those are time intensive and resource intensive and there's already been a ton of research done on a lot of these social interventions. So what we prefer to do is gather all of the information we can find that's already out there on a particular program or policy option, and then screen those research reports for research quality. So essentially we rely mostly on research findings that have been conducted under randomized controlled trial conditions or statistically well-controlled comparison group trials, regression discontinuity trials. Essentially we look at anything that can allow us to estimate a causal impact of a program on a particular outcome or set of outcomes. And when we come up with that set of studies, we then meta-analyze the results and cost evaluations to have a weighted average of the effects of a particular policy option on a set of outcomes.

So the example I thought I'd give you is the nurse family partnership, which a lot of people in the audience are probably familiar with. It's been done in three rigorous demonstration sites across the country, and there have also been a couple of independent replications, looking at different kinds of things. The program itself targets first-time low income, high-risk single moms, usually teenage moms and it provides those moms a single, one-on-one nurse visitor, who comes to their home on a regular basis beginning in pregnancy and up to the time the child is about two years old. And some of the outcomes of interest that have been measured in those evaluation trials has been things like child abuse and neglect rates, crime, educational attainment and so forth. So when we're reading the research literature and trying to find out what works, what we do is we estimate the magnitude of the impact of

the program on each outcome.

So for example, this is a chart showing the estimated likelihood of a family experiencing child abuse or neglect. The blue line shows families who would be eligible for the nurse family partnership, but who do not receive it. And so we would expect that over a child's life, they would have a 22 or 23 percent chance of being victimized by child abuse and neglect, whereas if the family participates in nurse family partnership, we would expect that likelihood to drop to about 17 percent. So that wedge there between the two lines on the screen, demonstrates the magnitude of the expected impact on that particular outcome. And the magnitude is what we then multiply by the expected value of a child abuse and neglect case in terms of CPS costs, victimization cost for medical and mental health, foster care cost, adoption cost and so on and so forth.

So for each outcome that's measured in an evaluation, we'll do sort of a similar exercise estimating the magnitude of the difference between a comparison group and then a group who actually get the intervention and then those are the things that we turn into dollars and cents in terms of the benefits over a lifetime. So when we look at the bottom line costs and bottom line benefit of the nurse family partnership specifically, we come up with an estimated cost of about \$10,000 per family to implement, and that's actually a cost that was derived from actual program costs in Washington State. We implement nurse family partnership in 11 different counties in Washington State. Now reading the research literature, we come up with an estimate of a benefit of about \$1000 per family in reduced child abuse and neglect cost, and that includes both child welfare system cost and victim cost for medical and mental health.

We also anticipate the nurse family partnership will increase a child's educational attainment to the tune of about \$7,000 in increased earnings over the lifetime. And I should mention that we won't expect these kinds of results for every single family that participates in nurse family partnership. Some families won't benefit at all, some will benefit tremendously. So what we present to our legislators is the expected average, per family benefit if the program is implemented. We also expect some benefits from reduced crime from both the mother and the child, to the tune of about \$5500, and that includes lower criminal justice system cost as well as lower victimization cost. We also anticipate increased earnings for the mother, because many of the women who participate in the nurse family partnership are teenage mothers and the program seems to increase the likelihood that those moms will graduate from high school on time if they participate in the program. And that can lead to pretty high – a pretty high impact on expected earnings over their lifetimes.

Children who go through the nurse family partnership actually are more likely to use special education services and more likely to repeat a grade, which leads to slightly higher K-12 costs. But there are other benefits as well such as reduced use of public assistance and reduced use of publically funded healthcare so the total benefits expected to accrue to a family who participates in the nurse family partnership is over \$30,000 in our the best estimate. So given the cost of about \$10,000, we would expect a benefit to cost ratio of over three dollars for every dollar invested over the long run. And that's about a 9 percent average annual return.

The other question that legislators want to know is, now that we think that the nurse family partnership on average looks like a pretty good bet, what's the likelihood that it's going to actually be a good investment? So when we run our Monte Carlo risk simulation, we come up with an 82 percent chance of a favorable outcome. So again, this is – when we vary certain assumptions about our benefit and cost model, vary certain assumptions about the effectiveness of the program on different outcomes, we come up with an 82 percent chance of the program at least paying for itself over time. So we sometimes see better numbers than that, but 82 percent is a pretty good bet for our legislators. So that's the kind of information that we present on a per program basis for the policy options and the program options that we are asked to investigate by our legislature.

We compile those results into tables that look like the table on the right-hand side of your screen. Each policy option is presented in its bottom-line results, but the title of each policy option can be clicked and linked to the detailed analysis, similar to the slide I showed before with expected impacts on detailed outcomes and the results of a risk analysis. So in Washington State, benefit cost analysis has been used for the last 10 years or so to inform public policy. And we've been working with the MacArthur Foundation and the Pew Charitable Trusts through their Results First Initiative to actually share this approach with other state.

So the Results-First Initiative has actually taken our benefit cost modeling approach, and is teaching other states how to use it and how to collect their own input data so that they can get state specific benefit and cost results. And the other major update that we're doing is we're going to be updating our website. So by mid-November, we'll be having updated benefit and cost results across all of the topics we've looked at before, and those will be easily accessible on our website. So the benefit cost approach for public policy certainly seems to be gaining traction across the country. Thanks very much.

Sarah Lifsey

Thank you so much, Stephanie. As a reminder to everybody in the audience, if you have a question for any of our speakers, you can submit it online at any time using the questions form on the bottom of your screen, or you can wait to ask a question over the phone at the end of the presentations. I would like to turn to our last speaker, Dr. Ricardo Basurto-Dávila.

Ricardo Basurto-Dávila, PhD, MSc – Health Economist Office of Health Assessment and Epidemiology – County of Los Angeles Public Health

Thank you, Stephanie. First of all, I would like to thank the MCHB for the invitation to give this talk and also to all of you, many of you may just be getting back to the work today and I appreciate your being here listening on. So, we were introduced earlier, I am a health economist at the Los Angeles County Department of Public Health and I'll talk to you today about a project on which we're working and we are trying to estimate the health impact of changes to the level of funding of local MCH programs in the state of California. The outline of the talk is, we're going to start obviously with the background, telling you about the motivation for our study, what we set out to do and give you some information on how the current status of Title V MCH funding in California. Then we'll talk about the study results and then

the main conclusions that we can derive from it.

So the very first question in this slide may be completely unnecessary given what we just lived through in the last couple weeks. Why would we want to study the health impact of public health funding? Well, I don't need to tell anybody who's listening that we're living through a tough fiscal climate for – at every level of government, starting from the top – government and then – which trickles down to the states and the local government. So I think it's becoming every day increasingly clear that we need to make a strong case for the value of investments in public health. And obviously, as you just heard from Scott and Stephanie, there is – it is obviously important to understand how we use that money, which intervention, which programs are important or valuable and give us a good return on investment. But sometimes we just have to convince decision makers to keep funding public health activities.

As an example, there is a recent excellent study done by Glenn Mays and Charlotte Mays, published in *Health Affairs* in – a couple of years ago, where they looked at the return on investments for public health in general. And they found very strong – a very strong association – using cost analysis of increased funding in public health how it reduces mortality differences – several different types of mortality and a very simple return on investment calculation showed public health is extremely cost effective. However, the study focused on overall public health investment. So what we set out to do in our study, we want – what we are interested in looking at is how changes in funding specifically to maternal and child health programs, how they affect health outcomes. And we're starting looking at health outcomes at birth.

This is sort of a conception model that is the foundation for our study. Similar to Stephanie's presentation in terms of how they organize – they structured their study. Obviously, the funding of local MCH programs, we expected to lead to better health among children. But, it really – the value of this investment doesn't really stop there, the improved child health may lead to better educational outcomes and then – which in the long run they should lead to also better long-term health outcomes, improve employment outcomes even criminality in there, many other things that are – this chart. What I'm presenting today is only really the beginning of this conception model, the leftmost side, which is looking at how local MCH funding affects outcomes at birth. But we are actually interested in continued analysis, we're doing a literature review on how outcomes at birth impact longer-term outcomes and we will try to connect the results of the lit review towards the physical analysis, hoping to come up to better estimates of the value of this investment over the life course.

The data we have on funding comes from all 58 counties in the state of California. We have their annual expenditures between 2000 and 2010. Our key interest is on Title V funding of local MCH programs, but we also have data on total public health expenditures in each county, total government medical care expenditures and also we have a measure of private funding of programs associated with MCH. Our outcome data comes from nearly 5 million birth certificates in the state over this period. We're focusing only on singleton live births. There is very rich information in birth certificates in California. We have access to several outcomes such as birth weight, preterm birth and the number of pregnancy and labor complications. Our analysis so far in what I'm presenting today focuses on birth weight. We have information on parental age, race, ethnicity, nativity, parental education and also insurance status.

So what does Title V funding – how has it evolved in California in recent years. This table is showing us total funding of Title V, these numbers are not adjusted for inflation, between 2000 and 2012. And if we look at the rightmost column, we can see that funding has actually increased pretty significantly over the last decade. It went from just over one billion dollars in 2000 to over two and a half billion dollars in 2012. So even after adjusting for inflation, I'm sure we could find very large increase in funding. However, the funding has not been distributed evenly among the different components of Title V Program.

As you can see, most of the increases in budget have gone to the Children with Special Health Care Needs program, which went from roughly 900 million dollars in 2000 to 2.4 billion in 2012. If we look at local MCH Programs, the funding that is allocated directly to local programs, it actually decreased, in absolute terms and also relative to the other components. We can see it went from \$13 million dollars in 2000 to just about \$11 million in 2012. Also relative to the whole funding – Title V funding in the state, local programs received about 1.2 percent in 2000 and in the last funding cycle, they received less than 0.5 percent of total funding.

So in today's talk, we're actually focusing on the middle, on this column, the funding for local programs. And you may wonder why, if really the bulk of the money is going to the other, especially Children with Special Health Care Needs. Well, there are a couple of reasons. First of all, obviously I'm a health economist at Los Angeles County, so we care particularly about the funding of our local program. But not just that, there are valuable services that are provided by local MCH programs that we believe they are better able to provide those services and so it is important to understand how the changes in funding may be affecting them. Just an example of activities conducted by local MCH programs, they conduct community outreach referral to resources, referring families to programs such as Medicaid or Healthy Families, which is the – name in California. Local programs provide health education to high-risk clients with issues such as prenatal care, childhood safety and injury prevention, and of course, they conduct very personalized case management, conducting risk assessments and monitoring infant and child development.

As I showed a couple slides ago, funding has decreased overall in the state. If we adjust for inflation, the decrease is even more evident. And also, as you can see in this slide, where I'm showing changes in funding for 16 of the 58 counties in the state, you can see the downward trend has been consistent for pretty much every county in the state. We can see in this chart, the Ventura County, the one at the bottom right corner, experiences life increase somewhere towards the end of the last decade, but this was quickly reversed in the last couple of years of the decade and so they also experienced an overall reduction of funding. Despite the fact that funding has reduced consistently for every county, you can see the patterns have been – have varied significantly. For example, we have counties like Fresno that had relatively high levels of funding early in the decade and then the reduction in the funding levels was pretty dramatic towards the end of the decade. And then on the other hand, with counties like Los Angeles or Orange, that started already with low levels of funding, at least relative to other counties, and thus the reduction in their funding levels was less dramatic, but it basically is because they were already low to begin with.

Obviously from a local perspective, this is not – whether it just started high and the funding goes down dramatically and whether it just started low and continued low, none of this is appealing to local programs. On the other hand, as a researcher, this is actually sort of an advantage from an analytical perspective, because – this variation across counties in the funding levels and to see whether changes – different changes in funding have resulted in different changes in outcomes and that’s the analytical approach that we take in this analysis. Just to put things in perspective, overall for the entire state, the per capita funding levels for local MCH programs have decreased, adjusted for inflation, by nearly half.

So what has happened to low birth weight rates in California? This graph is showing us rates of low weight birth by mother’s education. And not surprisingly, mothers with college education or higher have the lowest rate of low birth weight. However, we can see that across all groups, this rate has increased, and I’m showing only singleton births, so this is not influenced by the fact that we’re seeing increasingly more twins and triplets, higher – of births. Also not surprisingly, mothers with less than high school education have the highest rate of low weight birth, although I was actually a little surprised that the top three lines are actually fairly close together. But we still see that low education mothers have the highest likelihood of low weight births. So overall in the state between 2000 and 2010, the rate of low birth rate has increased by 8 percent.

So as a typical analysis, we’re working with 5 million observations on the birth outcomes. So to make it a little less challenging to work with data set of that size, we collapsed the data to longitudinal groups defined by county, mother’s education, father’s education, mother’s race, ethnicity and nativity, mother’s age and also whether the mother had had previous births, yes or no. The advantage of doing this is not only on making the sets of data more manageable, but also that this gives us longitudinal groups that then we can do statistical analysis as it takes advantage of the longitudinal nature of the data.

This is our statistical model, summarization of it. Essentially we’re assuming that low birth rate – the probability of low birth weight is a function of expenditures by local MCH programs and the total extensions in public health medical care by counties and number of individual characteristics times trends and also county fixed effects. There are two important things I’d like to point out in this formula. One of them is that we’re assuming logarithmic form for MCH expenditures, and this is common in economic analysis, because it implies the assumption that – return – decreasing returns to scale. Essentially economists, we usually assume that each additional dollar we spend, at some point becomes less effective than the previous dollar, perhaps because some populations are more difficult to reach or because there is some behavior that people just not change, no matter how much we’re spending to try to help them make the decision. The other side of this coin, however, is that as funding is reduced, then the negative consequences of those reductions will be increasingly larger. The second thing I’d like to point out is that we are assuming – we have an interaction between funding levels and mother’s education. So that we have a – our hypothesis is that the impact of funding – the relationship between funding and outcomes varies across education – the education level of the mother.

This table summarizes our most important results in the analysis. As you can see – well, what I’d like to point out is first the top row showing the regression coefficient for the main – for MCH funding. And as

you can see, this coefficient is negative and it's very highly statistically significant. And what this means – we interpret this is that higher MCH funding is associated with lower low birth weight rate for mothers without a high school degree. So this is the main – determined this group of mothers were the referenced in the categorical classification of mother's education. So this coefficient is the direct estimate of impact of funding on outcomes for mothers with low education.

Then the next row shows the coefficient for the interaction between funding and mothers with a high school degree. And as you can see this coefficient is positive, it's smaller in absolute terms than the coefficient of the main term and it is statistically significant with a p value of 0.1. The implication is that there is a weaker relationship between funding and outcomes for mothers with a high school degree. And then the next two rows are showing the coefficients for the interaction between funding and mothers with some college and with college education. And as you can see, these coefficients are nearly identical but with an opposite sign to the coefficient of the main term, and they both are statistically significant. And what this essentially means is that there is no association between funding levels and the outcomes of mothers with some college or college education, which is perfectly consistent with our original hypothesis.

In case some of you are wondering, the very last row in this table shows that there is negative association between increasing medical care expenditures and birth outcomes. By no means, please do not interpret this meaning that the more we spend – more expenditures in medical care actually result in worse outcomes. This is very likely a result of reverse – which is something that we economists are usually paranoid about. This probably means that obviously in counties where outcomes are bad, then this will eventually lead to higher medical care expenditures in this county. These also give me the opportunity, some of you may be wondering why we don't worry about the same thing when it comes to MCH funding that may be there's – so that the results that we're finding are not really cost – just correlation of.

We feel pretty confident that this is not the case for a couple of reasons. The main one being that MCH funding levels are predetermined before every fiscal year and they are determined according to a formula that doesn't vary. And the formula does not depend the historical outcomes and it obviously cannot depend on the outcomes in the same year, because this funding is allocated many months – several months before the fiscal year. So we feel pretty confident that MCH funding levels are fairly exogenous and if that is the case, if this assumption is valid, then a result can be interpreted as causal.

These charts are showing us a graphic representation of our findings, shows the relationship between funding levels, which are on the x-axis and low birth weight rate, which are on the y-axis. And as you can see, the vertical line – the dash line, shows the most recent funding level in the state. And as you can see, not surprisingly, the line for mothers with a college education and with some college education is nearly flat, meaning that higher funding levels do not really have any meaningful impact on low birth rate among these two groups. Then we have a slightly stronger relationship for mothers with high school degrees and a much stronger relationship for mothers with less than a high school education. The most important aspect of this graph that I would like to highlight is the fact that the slope of the blue line becomes increasingly steeper as we move to the left side, meaning that lower funding levels, if our

estimates are causal, lower funding levels may result in increasingly larger rates of low weight births.

So we did a – we used the results of our regression analysis to do an estimation, a projection, what will happen if funding levels – if funding of local MCH programs were completely eliminated. This table is showing us the number of singleton births by mother's education in the state in 2010. It shows the number of low weight births in that year using – obviously using the actual funding levels, and then we run a scenario, what if funding was eliminated, were zero. And our estimation was that the number of low weigh births among mothers with less than high school would increase by 14 percent. The increase would be about 5 percent for mothers with a high school education and then, of course, minor increase among mothers with some college and college degrees. Overall this would result in an increase of 5 percent in the number of low weight births in the state or about 200 births with low weight. Obviously as I showed, the investments are really not large, this is just roughly 11 billion dollars that are allocated to local MCH programs, so an investment of 11 billion dollars to prevent 200 low weight births seems pretty cost-effective. Well of course, one of the things we would like to do is do a more formal analysis of cost effectiveness here.

So there are certainly some limitations to our analysis. First of all, we're only measuring funding levels, we're not actually looking at the services delivered by each county. It is very likely that different counties provide different types of services and maybe the quality also varies, so we cannot be sure that a dollar spent in Los Angeles is the same as a dollar spent in Fresno or some other county in the state. Also, our econometric analysis is not really – does not have a causal design, but as I explained earlier, we believe the funding we're focusing on, because it is not discretionary and it is not competitive and it is pre-determined before a fiscal year, we believe it is as – .as public funding can be.

In addition, previous studies of looking at the impact of changes in funding of public health have suggested that when causal methods are used to make these estimations, this only increases the estimated impact of public health funding. So if anything, if this is a concern, we might assume that our estimates may actually lower bound estimates. Finally, we are of course interested in looking at the return on investments, so we're looking at, okay, what is the long-term – what are the long-term consequences of decreases in the funding of local MCH programs. But in this area, we may be vulnerable if there are other funding streams that vary at the same rate or similarly as the funding of local MCH programs, then the qualitative nature of our results will still be valid. But it would be more difficult to make an assessment of the value of each dollar spent, because perhaps there are other programs that are being funded similarly as the local MCH programs and they're also benefiting birth outcomes. And so those others will also need to be taken into account.

So the conclusion, our results suggest that lower funding of local MCH programs has contributed to higher rates of low birth rate and moreover, the implication of non-linear relationships between funding and outcome, and the fact that funding levels are already fairly low, the implication of this is that additional cuts – budget cuts could have increasingly larger negative impact on birth outcome. I would like to knowledge, first of all, the work – our supporters First 5 Los Angeles and Los Angeles Children's Data Network who provided some financial support and also professional support for this study. Also our collaborators, Advancement Project and the Los Angeles County Maternal Child and Adolescent

Program. And finally, most of the data used in the analysis was provided by the California Department of Public Health. Thank you very much.

Sarah Lifsey

Great. Thank you so much, and thanks again to everyone who has presented today. It's been a very engaging program and we already have some questions coming in. As I mentioned at the beginning, we'll be taking questions both online and on the telephone. To post a question online, just enter your question in the field at the bottom of the questions box and enter. And to ask a question on the phone, just press *1 to indicate that you have a question. The operator will let you know that there is a question and indicate to you when to ask your question.

So while folks on the phone are joining the queue, I'm going to start with a few of the online questions that have come in. First I'd like to ask a question from Roger.

How do you measure the costs and benefits of interventions, which provide additional information to decision-makers? For example, how would you measure the cost-benefit ratio of an economic analysis unit whose work is spread over many projects, the results of which may be implemented well, poorly or not at all by decision-makers. I think that question could go to any of the speakers.

Stephanie Lee

This is Stephanie Lee here, and I will take a stab. I'm not totally sure what the questioner is getting at there, but I do think there is – there is a risk, of course, any time we do an economic analysis and we're estimating benefits and costs. What we're doing is we're using the best available information in order to estimate those benefits and costs and if a certain program or intervention is implemented poorly, for example, we wouldn't necessarily estimate – we wouldn't expect those same kind of benefits as if the program had been done with fidelity.

I know that Washington State we've learned a lot lessons along way. And in some of our policy units, so for example, in the juvenile justice system, there's actually a quality assurance program in place that actually increases the average cost of an intervention, but also ensured that the programs are being implemented with fidelity. So that there is an ongoing monitoring system happening so that if a certain therapist or certain interventionist is found to not be following program procedures, they're actually either retrained or relocated. So in that way, again we do the best we can to estimate the benefits and costs, but it does take a lot of work on the backend to actually get those results on a real-term basis.

Sarah Lifsey

Great. Thank you. Do either of our other speakers want to take a stab at that question?

Scott Grosse

This is Scott. I think there are actually multiple questions there. One question, as Stephanie picked

up on, is sort of variable implementation. And so to address that you can do a sensitivity analysis or scenario analysis, where you make different assumptions by effectiveness and costs, depending on how it is implemented. But there's a broader question, I think, which is how to evaluate the economic impact of generation of knowledge of research? And that's a very challenging question, which I have never attempted, so I am going to have to pass on that.

Ricardo Basurto-Dávila

Yeah, this is Ricardo, I'd like to just expand a little on what Stephanie – Stephanie's response. As I said in one of my slides, in our study we're not – we're just looking at the value – average value of funding in the entire state. We can't really get to how – whether a certain department in one county is more effective, more efficient at doing their work than other departments. And I think, that may not necessarily, at least not always be the role of an economic evaluation, I think it's very important to also conduct process evaluations, quality monitoring among units. And the type of analysis involved in that is quite different from what we do in an economic evaluation where we rely mostly on quantitative data and trying to associate that data on the inputs to the outcomes. Whereas a process evaluation really goes to the actual functioning of a program and whether they're performing their functions the best possible way.

Also, just like Scott said, I've had a couple of times people have asked me in the department whether we can do an evaluation of units that are more about generating knowledge, producing scientific outcomes, and yeah, that could be quite a bit of a challenge, it's very difficult to measure the impact of this type of work.

Sarah Lifsey

All right. Thank you. Next I have a question from Diana, and I think this is a question for you, Ricardo. Is the Maternal Child and Adolescent Health funding variable only based on the funding to local Maternal Child and Adolescent Health, or does it also include funding from SSLA and other private sources? So in other words, the total investment – is the total investment for improving birth outcomes both public and private in your analysis?

Ricardo Basurto-Dávila

Yes thank you. And actually this is probably something that I didn't explain in detail when I was discussing the method. Our comparable is exclusively the Title V funding stream that goes directly to local MCH programs. We also have in the analysis a measure of private funding, which we were able to acquire from a vendor that looks at the tax return forms of large foundations and they did a keyword search to see whether those funds were directed towards organizations that either the name of the organization or the description in the tax form indicated that their activities are related to maternal and child health.

Unfortunately, we're not very sure – we're not quite sure about the quality of data on private funding. First of all, the data is not extensive, as I believe it represents about 50 percent of the funding, so it makes us wonder what is the 50 percent we don't have. And in one of my slides, I

showed the results that we didn't find any significant association between private funding and birth outcomes. But I definitely would not conclude from that that private investments in maternal and child health programs are useless. It may well be that the data we had was of low quality or it may also be an issue with reverse coefficient that I described for medical outcomes. So it might be that funds are invest more in communities that most need it, which would make a lot of sense. And in that case, we could even observe a negative association between private funding and outcome.

Sarah Lifsey

Great. The next question I have is for Stephanie, which is, what data sources does – .what data sources does your Institute use to collect data for the meta-analyses and does the Institute conduct direct research of its own?

Stephanie Lee

Yes, those are both great questions. First of all, we use peer review literature as well as gray literature to do our meta-analyses. We try to find any research evaluation we can that's pertinent to the topic at hand. So, we use University databases to search again peer reviewed journal articles, but we also look at government databases, locally produced evaluation reports, and then we apply the same set of screening criteria to make sure that we're only including kind of the most rigorous evaluations that we can find in our meta-analysis.

We also do primary outcome evaluations, particularly over the last several years we've done quite a few in the criminal justice world. So evaluating programs that are actually being done in Washington and estimating the outcomes. And if we have a particularly large evaluation in Washington State, we might actually use that measure of effectiveness instead of relying on a meta-analysis of implementations that were done elsewhere. But generally speaking, we like to include our own analyses within those larger meta-analyses. So we'll take the effects estimated our own primary evaluation work and put those in the mix with the other – the research that's done by other researchers and put them altogether in a meta-analysis, that's kind of our preferred way. But we only do outcome evaluations at the direction of our legislature, so there are some areas, which we just haven't been able to explore in the past, so those are the cases where we have to rely only the work that others have done.

Sarah Lifsey

Thank you. The next question I have is for Scott, and it is: Can you talk about existing data sources, like reporting data or administrative data that might be useful for people that are looking to conduct an ROI or a cost-benefit analysis?

Scott Grosse

Well if those two data sets are important, we use existing data sets in both ROI analyses that I mentioned. The challenge is that the administrative data sets alone cannot give you any measure of impact. They're useful for collecting cost data. But to collect information on the impact, you need a richer data set that will allow you to actually control for confounding and look at what is the impact

of delivering an intervention.

Sarah Lifsey

Okay, thanks.

Scott Grosse

I mean, in terms of administrative data sets, it's obvious there are two major kinds, there's healthcare data sets, like hospital discharge data like the HCUP data, there's the claims databases. And then also there are surveys where you can – some cost information from surveys of the population.

Sarah Lifsey

Okay. Good. The next question I have is for Ricardo about the design of the study he presented. And the question is, if we want to evaluate the impact of the program on a target population, isn't it the case that a counterfactual is important to show the impact?

Ricardo Basurto-Dávila

Yeah, absolutely. Obviously – well, it depends on the type of analysis of course. When we're doing a cost-effectiveness analysis, what we – usually what we try to answer is, what would happen without this intervention? What would happen without this program, because that is truly policy question of interest. In our case, because funding is a continued variable, which can be very high, somewhat high, medium or low level, it's a slightly different type of analysis. There are many different counterfactuals, we know the funding levels we had in 2010, but funding could have been higher, it could have been lower.

Now what I believe the question is getting at is what we really want to get is our causal relationship between funding and outcomes so that we feel confident in saying, if funding changed by this much, then this would be the outcome we will observe. In that sense, like I explained, we have a strong assumption, which is that funding is exogenous, meaning that funding is determined completely independently of historical or future outcome. So the relationship we observe can be considered causal since that if you increase funding, then it will affect outcomes the way our regression models are predicting. We think this is a reasonable assumption in this case, because of the nature of Title V funding of local programs.

In most cases it's not, in most cases higher funding may go to counties that are observing poor outcomes or maybe lower funding as you look at maybe No Child Left Behind, Or there are some programs that may actually reduce funding for poor performing institutions. So in those cases, then yeah, the type of analysis we did would certainly not be valid. Again, the strong assumption for us is that because this funding is predetermined, it's nondiscretionary, there's nobody in the state who can say, you know what, this year we're going to reuse the funding for Los Angeles by this amount. It depends on the money that the federal government finds the state as a whole, and the money that the state also allocates to the programs and then the formula just says, given this money available, then this is how – to each county. So we believe, for example, the slide I have with the table

assuming zero levels of funding, I believe that's a valid counterfactual, although I'm sure there may be valid opinions that would think otherwise.

Sarah Lifsey

Thank you. Just as a reminder, if anybody wishes to ask a question over the phone, all you need to do is press *1 and the operator will answer and let you know how to ask a question. The next question I have is for Scott, which is, what prompted the study of cost-effectiveness of newborn screening for the critical congenital heart defects?

Scott Grosse

Okay. Secretary Sebelius directed CDC to do this work it's a brief answer. But the longer answer is that we anticipated that this request might come because newborn screening is an important public health intervention and there are people who have been wondering for a number of years about the economics of it. I personally worked on cost-effectiveness analyses of newborn screening for other tests previously.

Sarah Lifsey

Great. I have another question for Stephanie, which is, does the Institute primarily do prospective or retrospective analyses and if so, are there different uses of those different kinds of analyses for the Institute?

Stephanie Lee

Yeah, that's another good question. When we do our primary outcome evaluations, we attempt to do prospective outcome evaluations when at all possible, so, trying to get some kind of random assignment to a group, to an intervention or control group and then measure outcomes going forward. But in a lot of cases, we don't have that ability so we might do a retrospective analysis where say we take a cohort of people in the criminal justice system. And look at a group who received a particular intervention and then match a comparison group to that group statistically using any measurement that we can find to get the closest measure. I think some of our analysts use propensity score matching and others use other techniques. But – so, where possible we like to be able to look forward.

And the benefit cost results we do also are prospective, so they're looking forward into the future if we invest a number of dollars now, what are we going to expect out into the future? So not looking back to what has already happened, but taking that prospective look into the future. But there are a lot of valuable studies that both prospective and retrospective that we would include in our meta-analytical work, as long as they meet certain research criteria. I hope that answers the person's question.

Sarah Lifsey

Thank you. I have a question for Ricardo which is, why do you think the incidence of low

birth weight in all of the socioeconomic groups increased over the years and why particularly did it increase in the group that had the highest socioeconomic status?

Ricardo Basurto-Dávila

That is a great question, and I don't think I have a clear answer. I mean, you can see the slides that the increase occurred not only among low socioeconomic status mothers, but also among college educated and mothers with some college. We really didn't set out to answer that specific question. In fact, I think the fact that the average low birth weight rate increased among all groups, but our statistical analysis found a significant impact – relationship between funding and only the outcomes for low education mothers, I think it actually strengthens the robustness of analysis. Because we could have argued that just over time low birth weight rates are increasing across all groups and funding levels are decreasing.

And so that relationship may just be – but our analysis, in fact, the counties that decreased funding the most, that's where the increase was strongest among mothers with low education and not so much among mothers with high education. But we certainly – we haven't had that conversation on what may be causing increase in low birth weight rates among other mothers. That's probably a question that someone in our Maternal Child Health Program would be much better able to answer.

Sarah Lifsey

Great. And another question for you, have you tried using fixed effects modeling instead of random effects modeling to look at this outcome?

Ricardo Basurto-Dávila

Yeah, I have. The results are fairly similar and I know among economists there's always this area of a fixed effect models are better than random effects. This is usually assessed using the Hausman test, but – enough, the Hausman test pretty much always suggests that, no matter what data. So yeah, results are fairly similar using fixed effects. The methods that we use accounts for – correlation on the – over time, so I prefer it to using fixed effects. But yeah. results don't really change that much using different methods.

Sarah Lifsey

Okay. In your analyses, did you look at different outcomes like infant death?

Ricardo Basurto-Dávila

Not yet, but we will. We also have data from all death certificates in the state and this has taken a little longer than we hoped. But we are in the process of geocoding that data to each county and then – and we're particularly interested in doing – replicating this analysis for mortality rate in childhood, not only among infants, but actually also toddlers from ages 0-5.

Sarah Lifsey

Okay. Good. I have a question that's, I think, appropriate for all of the speakers to

address. If a local Maternal and Child Health Program or sort of a local program public health program in general wanted to start doing economic analyses and using this sort of information, where should they start? What would be the first steps towards adopting these tools and analyses?

Scott Grosse

This is Scott. I would start with a specific question. So that's what – so you fram – you start with a question and say, okay, what question are we trying to answer? Then you ask, what data do we need to answer that question? And then you look for people who can help you answer the questions, collect those data.

Sarah Lifsey

Okay.

Ricardo Basurto-Dávila

This is Ricardo. Just very quickly to answer that, I think, this is probably a question that is present among many who are listening to this – the presentation. I've given – I presented the results in a couple of conferences and that has been a recurring question and I think it's a bit challenging because in local – especially local departments of public health, there is usually not the analytical capacity. Our training is very different from the one required to conduct these studies and so, figuring out just where to start, how to – how can we start defining a study can be a challenge. But, I know that this is becoming increasingly important, that we need to be able to understand the impact of what we're doing and be able to communicate that to decision-makers.

Like Scott said, I mean obviously the very first key import step is having a good question, understanding exactly what you want to do and then figuring out what data you have, and whether that data will allow you to do the analysis. Also, if you allow me, I'd like to suggest an extra step. Both Scott and I are products of the Prevention Effectiveness Fellowship at CDC, which is a program to train health economists to work in public health. I know the Prevention Effectiveness Program has been interested in

Working – increasing its collaboration with the local departments trying to help departments do this type of analysis, at least get it started. So if you have interest in doing one of these studies and don't know where to start, maybe a good way to start would be trying to get in touch with them. And see whether they can have either a Senior Health Economist at CDC or a Prevention Effectiveness Fellow spend some time trying to help you define the study and figure out what data will need to be collected and what type of analysis is feasible with the data you will have.

Scott Grosse

To follow up on that, the New Jersey screening cost study was the New Jersey Department of Health contacted CDC and requested technical assistance to work with them to do the study and a Prevention Effectiveness Fellow and an EIS officer went together to New Jersey.

Sarah Lifsey

Great. Stephanie, did you have any thoughts about that question?

Stephanie Lee

Not much to add to that question. I think obviously having a good question and knowing who to ask for help are probably the two most important things. But I would say one thing that local communities probably can do is, first of all get a really good idea of what you're spending. That's kind of the first step and it's often a little bit overlooked is getting a really good, comprehensive sense of what the costs are for a particular kind of intervention or just what your standard operating costs are for certain kinds of approaches, so that's where I would start.

Sarah Lifsey

Great. Well thank you to everybody. I believe that is all the time that we have for discussion today. Answers to any questions that you sent in that we are not able to see addressed during the Q&A period today will be posted in writing along with the program archive. And that archive will be available on the DataSpeak website in the next few weeks so that you can access it at your convenience. If you think of any more questions, you can submit those to us via e-mail through the end of the week or through next week using the address on your screen, dataspeak@altarum.org.

And before you go, we would like you to know that we will be broadcasting more DataSpeak programs in the coming months. Announcements about these future programs will be sent out via e-mail to everyone who registered for today's program and will also be posted on the DataSpeak website. Finally, before you log out, we would really appreciate you taking a moment to provide us with feedback on today's program. It's really important to us that we have your input on this session as well as your recommendations for future programs. To fill out this very short survey, simply click on the evaluation link on the screen now and the survey will open up in a new window.

Thank you to all the our speakers for being here on this very interesting program. Today's program is now complete. Thank you for joining us and have a great afternoon.

About DataSpeak

The MCHB's DataSpeak webinar series is dedicated to the goal of helping MCH practitioners on the Federal, State, and local levels to improve their capacity to gather, analyze, and use data for planning and policymaking. DataSpeak is funded by the MCHB's Office of Epidemiology and Research under the supervision of Gopal Singh, PhD. The Project Director is Renee Schwalberg, MPH.

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