

DataSpeak
New Approaches to State Surveillance of Children's BMI
September 15, 2008

Disclaimer

The views expressed in written conference materials or publications and by speakers and moderators at HHS-sponsored conferences do not necessarily reflect the official policies of HHS; nor does mention of trade names, commercial practices, or organizations imply endorsement by the U.S. Government.

>> Michael Kogan:

Good afternoon, and welcome to today's DataSpeak Web conference on New Approaches to State Surveillance of Children's BMI. I'm Michael Kogan, and I'm the Director of the Office of Data and Program Development in the Maternal and Child Health Bureau. The DataSpeak series is sponsored through the Office's MCH Information Resource Center.

Today we're pleased to present the fifth DataSpeak program for this calendar year. Archives of the first four DataSpeak programs of 2008 as well as other programs held since 2000 can be found on the MCHIRC Web site at the address on the slide. Today's program will focus on surveillance of children's BMI, with particular attention paid to emerging methodologies being used at the state level. We're pleased to have three knowledgeable presenters for this program.

Our first speaker will be Dr. Deb Galuska, Associate Director of Science for the Division of Nutrition, Physical Activity, and Obesity Prevention at the Centers for Disease Control and Prevention. Dr. Galuska will discuss the importance of the surveillance of childhood obesity and overweight, as well as the strengths and limitations of the major national surveys and CDC-supported state surveys that now include a focus on BMI.

Next will be Dr. Joseph Thompson, Surgeon General of Arkansas and Director of the Arkansas Center for Health Improvement. Dr. Thompson will discuss the approach taken by the state of Arkansas in screening for and preventing childhood obesity. He'll provide a brief overview of the current picture of overweight among children in Arkansas and discuss challenges and lessons learned from the implementation of the Arkansas's school-based screening program.

Our final speaker will be Therese Hoyle, who's a public health consultant currently working with the Michigan Department of Community Health's Division of Immunization. Ms. Hoyle will discuss how children's BMI surveillance can be coordinated with the state public health population-based immunization and child health systems. She'll highlight the Michigan Care Improvement Registry's Child Health Integration Project as a model public population-based system and will present data from the BMI surveillance efforts undertaken in San Diego, CA, and the State of Maine.

It's now my pleasure to introduce Vivian Gabor, the moderator for today's program. Vivian, I'll turn the floor over to you.

>> Vivian Gabor:

Thank you, Michael. And welcome to all of our participants. We're delighted to have everyone with us today. Before we begin our presentations, I would like to go over just a few housekeeping items. For those of you who are logged in via the Internet, you'll be seeing an ongoing slide show throughout the next hour. At the end of the program, we would greatly appreciate it if you could just take a moment to complete the short feedback form. We'll provide instructions for doing so at that time. Your phone line is going to be muted during the presentation.

After we hear all the presentations, we will have a question-and-answer session. You'll have an opportunity to ask questions through the telephone operator, who will come on at that time to provide instructions for doing so. Questions will – can also be posted at any time during the program online. If you're logged in via the Internet, you may enter your question in the questions box located on the left side of your screen and hit "Enter." If you encounter technical problems during the presentation, please feel free to call up the MCHIRC help line. And the number there is 202-842-2000. Additional resources on today's topic have been posted on the DataSpeak Web site, including those that our speakers will highlight during their presentations.

Now I'd like to turn to our first presenter, Dr. Deborah Galuska from the Centers of Disease Control and Prevention. She'll begin our discussion today. Good afternoon, Deb. Thanks so much for joining us.

>> Deborah Galuska:

Good afternoon. It's a pleasure to be here this afternoon.

>> Vivian Gabor:

Today's discussion centers on surveillance. It would be helpful to begin with a working definition of surveillance. Can you provide us that?

>> Deborah Galuska:

The definition I've put on the screen is from feedback or in a book on surveillance. And what I'd like to emphasize is three aspects of surveillance that are important. First is that it's an ongoing and systematic collection of data, meaning that it's done periodically and it's planned, and that's what differentiates it from cross-sectional – a single, cross-sectional survey. Secondly, it's looking at outcome-specific data, and that's, again, emphasizing that it's purposeful and that it's planned ahead of time and looking at issues that are important to public health. And then, finally – and this might seem like an obvious one, but – is that the data is useful, and it helps with planning, implementation, evaluation, and things like that.

>> Vivian Gabor:

Okay. Thanks, Deb. Now, some of our speakers today – and what we know about states doing child obesity surveillance is that some of them are actually focusing on the BMI-screening component. What is the difference between screening and surveillance?

>> Deborah Galuska:

Well, sure. Well, both surveillance and screening include the collection of weight and height data. However, there's at least two things that differentiate surveillance from screening. The first is that

surveillance is done to assess the weight status of population groups – so, for example, the percent of adolescents who are obese in City A. In contrast, screening programs are done to assess the weight state us of an individual. So we want to know whether John Jones in City A is obese. And that leads to the second difference –

>> :

(Inaudible) what you just said.

>> Deborah Galuska:

That leads to the second difference. And that is, with surveillance programs, we don't have an ethical obligation to follow up with the participant. So oftentimes, surveillance programs are done with anonymous data. In contrast, the BMI screening programs – we actually do need to follow up, and we provide the individual with information they need to act. So we might tell them their BMI, tell them how they could change things, or tell parents their BMI, do additional tests related to cholesterol, and things like that.

>> Vivian Gabor:

Okay. Now, in terms of surveillance, what is its importance for public health action?

>> Deborah Galuska:

Sure. So there's at least four things that surveillance can be used for. First is to identify emerging public health problems. So, for example, the HANES data in the late 1970s, early 1980s, and then when it was compared to data in the '90s demonstrated a substantial increase in the prevalence of obesity in children. And that basically was what started a lot of the increased efforts towards obesity prevention.

Secondly, we can identify specific populations for interventions. So a number of data systems have actually identified that for children – that African-American girls are at highest risk for obesity. And that allows us to target interventions to those groups.

Thirdly, it can be used to set and monitor progress towards meeting health objectives. So, for example, in the year 2010 health objectives for the nation, we have a target to get 5 percent of the population to be obese. And that's in contrast to about 18 percent now. So it allows us to get a baseline and then allows us to work towards a goal.

And then finally, service data can be used to evaluate interventions done in a city or a state. We can look at the baseline, we can implement intervention, and then we can see what's done afterwards.

>> Vivian Gabor:

Well, then, of course, my follow-up is, why should we engage in surveillance of childhood obesity?

>> Deborah Galuska:

Sure. There's a number of reasons why we should. First, primarily, it's because it is an important health topic. We know that kids who are obese tend to have risk factors. Even during childhood, they tend to be – have higher cholesterol, high blood pressure – have some glucose problems. They also suffer some self-esteem issues and may be discriminated against. We also know that those kids might be at risk for obesity-related conditions as adults, such as heart disease, diabetes, and some cancers. And that may be because they tend to be obese adults also, or it may be because some of the things that happened during childhood actually set them up for those conditions. It's also important because it's a problem that affects a lot of kids in this country. We know now that about 18 percent of children between the ages of 2 and 20 are obese. And then, finally, we know we can do something about it. So we know that both diet and physical activity are important and that acting on those two interventions can actually help us change the prevalence of obesity.

>> Vivian Gabor:

Thank you. How is obesity in children defined?

>> Deborah Galuska:

Obesity is – by definition is excess body fat. But that's somewhat difficult to assess. So to approximate excess body fat, we use a measure called the body mass index. And that's basically weight divided by height in meters squared.

There's a couple of things, though, when we use this measure in children that we have to consider. First, as I said, it's a measure of excess weight and not adiposity. However, we do know that in kids, especially at the very high levels – that kids who tend to have excess weight also tend to be overfat.

Secondly, in kids, unlike in adults, we know that the interpretation of the body mass index depends on age and sex. And that's because kids are growing, both weightwise and heightwise, and their body fat/muscle distribution changes as they get older. So the way we take into account that is, we compare their body mass index to one of a reference population from the CDC growth charts. And what we say is that if a child's body mass index is at the 85th or – sorry – the 95th percentile for children of their same age and sex, they're obese; and if it's between the 85th and 95th percentile, then they're overweight.

And just to let your listeners know that this bef– this cha– there's a change in terminology here that's occurred based on an expert panel meeting that was done about a year ago. So you might have been used to hearing "overweight" and "at risk for overweight." The definitions are still the same. It's just different labeling.

>> Vivian Gabor:

Thanks. What methods are used today for the surveillance of childhood obesity in this country?

>> Deborah Galuska:

The data for surveillance can be obtained basically in two ways. One is that it can be a periodic survey that's purposely designed to collect weight data. And that can be done in a survey that's

only collecting weight and height data, or it might be a survey where weight and height data is collected along with other data like physical activity, diet – some other demographic variables.

The second way it can be done is by taking advantage of data that's collected for other purposes. And there's at least three examples here. The first is data that's collected for screening. We talked a little bit about screening before. And Dr. Thompson will actually give you some examples of that when he provides his example. The second is that we can look at health care records. So we can look amongst children who are visiting a physician, take that weight and height data, and then track groups of kids on that. And that'll be presented during the Michigan example. And then finally, we can use administrative records. So, for example, at CDC, the tetanus data system uses weight and height data collected as part of WIC visits for the certification and recertification for WIC participants.

So when we do that, then one of the questions that people might ask is then, "How are height and weight collected?" And basically, they can be done in three different ways. One is a direct measurement of height and weight. And that actually is the most accurate way of doing it. It's actually, though, also the most expensive, because you have to have equipment, and you also have to have people to weigh and measure people. The second is self-report from the child. That, of course, is probably most relevant in adolescence. What we know about self-report is that it tends to underestimate the prevalence of overweight, and that there tends to be some variability by sex, in that girls tend to do more underestimation than boys. And then there's some variability by age there. And then finally, there's parental report. And that's primarily for the younger children. There, too, we know that that's less accurate – that it tends to underestimate the weight. And there is some variability by the child's age related there.

So in terms of picking a methodology, they – there's a whole bunch of things that can be considered, but they kind of can be grouped into two things. First is the needs of the stakeholder. So you might consider whether there's an existing mandate – so, for example, legislation that tells you how and what types of methodology you need to use. And the Arkansas example is an example of this. There might be an expectation of funders, so they might say, "Well, this is the data we need. This is the data we want you to collect." And you're limited a little bit by that. Finally, you might want to consider what the data users might need. So they might need different subgroups. They might need additional information about physical activity and diet. And so that should be taken into account.

The other issue, of course, is resources, a common issue. And that can be both money and people resources. And that can drive decisions on whether you pick self-report versus measured. It might drive decisions about the sample size. And it can also drive decisions about what subgroups you measure.

>> Vivian Gabor:

Thank you, Deb. The current federal data systems that collect data and monitor childhood obesity – what are their characteristics?

>> Deborah Galuska:

Sure. So what I'm going to do right now is go through four systems and just kind of broadly talk about them; and then, during the question-and-answer period, if people have more questions, they can certainly ask them.

The first is the National Health and Nutrition Examination Survey. This survey has been done since the 1960s. It was periodic, about every 10 years, through about 1999 and then – since then has been ongoing. With regard to children, it goes – it does children 0–20 years of age. It's a noninstitutionalized U.S. population. In terms of measurement – or in terms of assessment, it does measure weights and heights using a very standard and rigid kind of protocol. And it's actually done in a mobile examination unit, so these are trained people doing this where the child is coming to that unit. The disadvantage with the HANES survey is that we actually don't get any state or local data. So we get high-quality data. We just don't get it at a state or local level.

Another system is the Pediatric Nutrition Surveillance System. This system is done primarily on children that are less than 5 years of age. And it has a little bit more limited generalizability, because it's done of participants in low-income service programs such as WIC. Like the HANES data, it's measured, and that measurement is done either as part of a clinical service visit, as part of the certification for WIC, or it might be done at a physician's office. It does have some state and local data. And right now, approximately half of the states participate in the system.

The Youth Risk Behavior Survey is done in school, and it's done for children in grades 9 through 12. And in terms of generalizability, you have to be in school, and you have to be in this high school age range. Unlike the other previous two systems, it's based on self-report. It's self-report using a standardized questionnaire. And that questionnaire includes information on diet and physical activity. There is some state and local data on the YRBS. Approximately 40 states are participating in the YRBS state-level data. And then there's also some data on some large school districts.

A final survey is the National Survey of Children's Health. And that survey has been done twice now, in 2003 and 2007. And it includes, like the HANES survey, kids about 0–17 years of age – again, noninstitutionalized U.S. population. It's a telephone survey, so it's based on parental report. And it also has state-specific data from it.

>> Vivian Gabor:

Thank you, Deb, for the wealth of information you've provided in a short period of time today on surveillance of children's obesity. If our audience wants to find out more about the CDC's efforts in this area, how can they contact you?

>> Deborah Galuska:

Sure. My contact information, then, is provided on this slide.

>> Vivian Gabor:

Thanks, Deb. Our next speaker today is Dr. Joe Thompson, the Surgeon General of Arkansas and Director of the Arkansas Center for Health Improvement. Welcome, Joe.

>> Joe Thompson:

Glad to be with you this afternoon.

>> Vivian Gabor:

I'd like to begin by asking you for a history – background of the Arkansas BMI screening program. When and why did Arkansas begin assessing the body mass index, or BMI, of all public school students in the state?

>> Joe Thompson:

Sure. Recognizing the devastating impact of obesity on children's health, our General Assembly in Arkansas passed Act 1220 in 2003. This multifaceted legislation seeks to change the environment within which kids go to school every day and learn their health habits, also to support and engage parents to build a system that encourages health, and also included confidential assessments of school children's body mass index with a confidential report home to parents on the results. Some of the activities included establishment of a Statewide Child Health Advisory Committee. We've changed vending machine content and restricted access, eliminating access in all elementary schools and restricting access through the high school age range until after lunch. We've had physical activity education requirements. We've required professional education for cafeteria workers; disclosure of the advertising contracts by the soft drink industry; and, predating the federal requirement now for wellness committees, had local parent advisory committees in all schools. Probably what will be of most interest to your listeners today was the confidential requirement to report to parents their children's body mass index, inclusive of a risk assessment.

>> Vivian Gabor:

What have you learned from that information that you've collected on BMI assessments of children?

>> Joe Thompson:

Well, from the National Health and Nutrition Examination Survey that Deb mentioned earlier, we knew the prevalence of childhood obesity had tripled in the past three decades. These red lines represent the national data from the NHANES data for both the younger school-aged kids and then the older, adolescent school-aged kids. We were surprised in our first year of assessment, however, to find that we had a much higher rate in Arkansas compared with the rest of the nation. More than one out of every three kids in grades kindergarten through 12th grade, or 38 percent, were in the two highest CDC weight classifications. However, over time, we actually observed that this has been a relatively flat line in the heaviest weight categories. And during our first 4 years, what we've seen is that we measured almost every school child, and we found that we've halted the obesity epidemic within our state through all of the efforts that the schools and families and communities have been putting together.

>> Vivian Gabor:

Aside from monitoring the prevalence of children's obesity, the data that you've collected, and the risk of obesity and overweight, how have the assessments been used in this state?

>> Joe Thompson:

I think this is an important question for our discussion today. The American Academy of Pediatrics and others recommend that every child have their BMI assessed annually and made

known to parents. As mentioned earlier, the primary purpose of our legislation was to collect BMI data in the schools and to inform parents about the health risk. So it was a screening effort in a manner that's similar to conducting vision or hearing or scoliosis screenings currently, as done in the schools.

So we believe that one of the most valuable components of our efforts were the confidential reports sent home to parents. Here's an example of the first year's English report that was sent home. It included both what the weight problem was, an individual assessment about their child, where their child was, and what the parent and the family could do, and where to turn for additional help.

Because we've amassed such a comprehensive database for our state, with very high participation rates among schools, we're able to provide reports not only to parents, but also on obesity issues at the individual school level, the school district level, the county level. And this high participation rate combined with a development of an epidemiological surveillance database behind the scenes have enabled us to use these reports so that schools can monitor trends within their system and have knowledge at the local level. But we've also used it statewide to provide information not only to every school district – the darker school districts here representing kids – the darkest school district kids having kids over 50 percent of which are in the two heaviest risk categories. But we've recombined this data for the legislature and for our congressional representatives and for local community initiatives so that they're able to track progress also.

>> Vivian Gabor:

Fascinating. What challenges can you tell us that you faced and lessons you learned while you were implementing this school-based screening system?

>> Joe Thompson:

Well, we've had several challenges and stepped on many land mines, but I think we look forward to sharing those. Because no other state had implemented such a large BMI screening, education and the purpose of the screenings, and particularly the confidentiality, was crucial. Initially, the schools viewed this as an unfunded mandate. This was yet one more screening effort that was being asked by schools to use there – time with children and their resources, because that's where all schools were. There were also concerns about the use of academic time for health screenings. The pressure on schools from the No Child Left Behind to achieve academic performance that's publicly disclosed and for which they're individually held was real. There were concerns about the potential negative consequences of measuring children's weight and height and calculating a BMI, specifically concerns about stimulating eating disorders or the labeling of children. And obviously, there were issues in our original legislation where it was not clear responsibility for developing and implementing the BMI assessment in the original legislation. And as most people who've worked with a large data collection effort can attest to, conducting such a large-scale screening in terms of confidentiality, standardization of the protocol, equipment, reporting, and data oversight had to have special attention placed in it.

We have learned from regular reliable communication with our stakeholders things that have gone well and that communication is essential. The information exchange really has to be multidirectional, from program leaders to school staff to state departments of health and education and human services, importantly centering around the transmission of valuable information to parents. These BMI assessments we've treated as fundamentally similar to other

school-based health screenings and have incorporated that into part of a broader protocol. We standardized and implemented a fairly simple measurement protocol, which was critical. And our equipment had to be readily attainable, affordable, and easy to use.

We've had an external evaluation from our College of Public Health that has done a survey of school administrators and personnel, parents, and where parents enabled us to access their overweight adolescents. What we found is that the assessments of the BMI reports have been very helpful to parents, with a doubling of awareness by parents of overweight children that their child had a weight problem. We've had no substantial negative consequences of BMI assessments. Superintendents and principals did express concern about time taken away from academics. We have had some increase in school policies and practices limiting junk food in support of healthy eating in schools. We have parents reporting a significant increase of parents who sign their children up for sports or exercise classes. And parents, importantly, did not report an increase in inappropriate diet use among their children. They have reported some changes in the family diet and nutrition patterns at home. And probably of most concern, students report that their physical activity has increased during the first year – that's the positive – but the percentage who participate in school-based physical education's actually decreased.

>> Vivian Gabor:

That's very exciting. In terms of some of the questions that people have, say, about the screening data and about surveillance and about the quality of the data, how have you been working to maximize the quality of the height and weight data that's collected at the schools?

>> Joe Thompson:

Well, in our original – and not congruent with the slide before you – in our original assessment, we had to make sure that we had schools that had the hardware: the scales and stadiometers. And we found many schools lacked quality scales and stadiometers. We procured scales after an assessment of accuracy and durability for all of the 1,200+ schools in our state. We had our State Department of Corrections actually build to specifications and deliver the stadiometers that were used for height assessment. For implementation, we had an intensive effort to ensure both accuracy and consistency by using a train-the-trainer model, with regional nurses of the Public Health Department offering, you know, standardized oversight and use of a videotape. And finally, we asked for two measurements of height with the variation being less than 1" to eliminate the most likely source for measurement error. As Deb alluded to, it's your weight divided by your height squared. So an error on the height side of the equation causes fairly dramatic changes in your BMI.

Last year, in our fifth year of collection, we actually made some changes that are on the slide in front of you. We modified our Child Health Statewide Advisory Committee to broaden its scope. We reduced the periodicity of every child to occur in the even years – kindergarten, 2nd, 4th, 6th, 8th, and 10th grades – which paralleled other health screens and freed up some school nurse resource time to be able to do more targeted programs on those children found to be at risk. We incorporated a written refusal to keep children. The parents had to follow now to opt out. And we required the standardized protocol across all school districts.

Importantly, other changes that were not necessarily supported but occurred were – was the elimination of physical activity requirements for all but in the kindergarten through fifth grade. And

we're working currently on a new health report that would incorporate all screenings into the same report home to parents.

>> Vivian Gabor:

Thank you. Very comprehensive approach in Arkansas. And thank you for the way you presented all this. If our audience wants to know more about these efforts in Arkansas and your work overall at ACHI, how can they contact you?

>> Joe Thompson:

Sure. Probab– this is my contact information in front of you. Debbie Berlin, my assistant, can ensure a prompt and appropriate response. We have a fairly broad team here that will be able – if your question is of more specific interest, she may direct you, with my support, to either our collection team or to our state policy engagement team or another person who may be able to provide you more specific responses to your queries.

>> Vivian Gabor:

Thank you very much. Now I'd like to turn to our third speaker – thank you, Dr. Thompson. It's Therese Hoyle. She's a public health consultant currently working with the Michigan Department of Community Health, Division of Immunizations. Good afternoon, Therese.

>> Therese Hoyle:

Good afternoon, Vivian.

>> Vivian Gabor:

What are public health population-based systems, and how do they relate to the surveillance of children's BMI?

>> Therese Hoyle:

Well, population-based health systems are systems that usually are loaded with vital records information, which is the electronic birth record. And all children's records are entered at birth. And 70 percent of the systems in the United States follow life spans of a person from birth to death. And currently, there – every state except one has a population-based immunization registry system. And they've been in development since 1992. And the technology is there. They're very advanced. And I can see where child obesity and prevention programs and these systems could really tie together for BMI surveillance.

The other part about population-based reporting is that they are – they have state level, county level, WIC level. In Michigan, we actually look at Medicaid. We look at migrant population. And every school district and every school building in Michigan – we can evaluate the immunization levels. But this reporting could be for any child health surveillance issue.

>> Vivian Gabor:

Okay. I understand that you're currently working with the State of Michigan specifically on a BMI surveillance effort. What can you tell us about this project?

>> Therese Hoyle:

This is a great project. Michigan's very fortunate to have Healthy Kids Healthy Michigan project. This is a project funded through the National Governors Association using Robert Wood Johnson funds. And hundreds of organizations are involved in this project, such as Grocery Association, the State Transportation Department, the Heart Association, Diabetes Association, and Department of Ed, just for a few. And they were gathered together to look at children's health issues, and BMI became the priority. So what they're looking at is, one, "What do we need in Michigan?" And one is surveillance. And that's where the Michigan Care Improvement Registry came into effect. And then the other part is regulatory and legislative policy. And this Healthy Kids Healthy Michigan project is focusing on those issues.

>> Vivian Gabor:

Okay. And what method is used in the Michigan – you mentioned the Michigan Care Improvement Registry. How are you collecting data?

>> Therese Hoyle:

The Michigan Care Improvement Registry – we've been around collecting data since 1998. It's a Web-based application. We do capture the birth record actually within 24 hours now. And we operate with a regional approach where staff – we have several staff that go out and put – and educate providers and schools and health departments how to use the system. We're funded through tobacco tax dollars. And we have – it's very large. Michigan has 4.7 million records. And we have all the children since 1994 born in Michigan in our system. Plus, children who move into Michigan – the physicians or schools add them to the database. And we have over 57 million shot records. And just today, we have 3,000 users on right now, because schools are very active with immunization reporting. But we usually have 13,000 users every day on the system. We have 3,000 provider offices that use it – sites, but we have about 2,400 that give immunizations. And last year, 2,300 administered their immunizations into the system within 72 hours. So – and it's very large, with over 35,000 users registered. And we are linked with vital records, (inaudible), WIC, and Medicaid.

The best part about the registry is that we can collect data in several ways. And this is common across the country. The Web-based systems have direct data entry. We also have transfers from electronic medical records. Michigan has one-way, but several states have two-way communication. We collect information from billing data. And we also have optical readers, and we can use scan form technology. And currently, we have – we use that for all hazard preparedness in Michigan.

But the best thing about the registry is the ability to use it for surveillance. And you can see on this slide that in January 2001, we started looking at immunizations. And as you know, most children receive about 25 immunizations by the age of 2. And the red is really a bad color, because we're at 0–29 percent. In Detroit, it was actually a 7 percent complete immunization rate. If you go to August of 2008, on the right, you can see that Detroit's in the high 60s. Most counties are at 70–80 percent. And we even have a county in the UP that's at 90 percent. So our goal is to reach 90 percent coverage rates. And we measure this – we can run this report every day, and we just have the information right at our fingertips.

>> Vivian Gabor:

Well – and just to be obvious, impact on children’s immunizations: What are some of the benefits and lessons learned regarding this system that Michigan and other states can apply as they build on existing public health surveillance systems and consider monitoring children’s height, weight, and BMI?

>> Therese Hoyle:

The best thing about these population-based systems is when they’ve really recruited the medical provider. But we also – in Michigan, all our schools use it and all our daycares. So we are in schools, and we are also in the medical office. We have over a 90 percent participation rate, and we are population based, and we are **life span**. So you could have surveillance on BMI for anything.

The other part we have is that we can look at pocket of need and how to spend our money for education and how to – which of these should we reach? It allows us to link with all other public health systems, such as WIC and Medicaid. And when we do roll out the BMI, WIC has already offered to allow us to extract the BMI, height, and weight from their system and enter it into the registry. And we also have the staffing model that educates everyone to use the system, because having a system this large, you do have a lot of staff turnover in the offices. And to continue high participation, you just need to have retraining and reminders.

The lessons learned: We’ve been doing this a long time in Michigan, and the first thing we did was reach the health plans for data. And today, because – if I were talking to someone about building a system or adding something to a surveillance system like this, I would look at health plans for their incentives. Health plans of Michigan have been outstanding when providing incentives, and they have been providing cash incentives for our providers. And some – one health plan is given \$250 for every child at age 2 who’s up to date. And so, some provider offices are making 10 to \$50,000 off this incentive. So you can see the encouragement of their youth in a registry or a population-based system.

We also have mandated reporting, which is very beneficial today. Early on, it was more difficult. But today, we are able to reach providers who refuse to participate with the mandate. And we would never use billing data again. We would only collect data from electronic medical records, because the data quality is so much better – and definitely to always support implementation and regional training and support to keep the system going.

The time frame for Michigan is that we would like to roll out the BMI surveillance system by the first of January. And that’s what our goal is, and that’s what we’re working on today.

>> Vivian Gabor:

Thank you, Therese. Can you briefly tell us about the stuff – there’s a lot about what’s going on in Michigan – what’s planned in the next few months. What is currently under way in some other states and communities, with regard to BMI surveillance?

>> Therese Hoyle:

This is what's so exciting for us – is, we can reach out to other states to see what they're doing and use the lessons learned from them to actually create the BMI surveillance system in Michigan. San Diego actually rolled out a BMI surveillance system this summer, and they have a very large registry. And right now, the users on their system may enter height and weight, and they also use these measurements on a growth chart. And I'm going to show you on the next slide a picture of what – how they're collecting this.

And this is what it looks like. And you can see that they have the height and weight. And you can see the history of what is added on the child. And this is from the medical community. And if I go to the next slide, you will see that here's the growth chart. And their growth chart can be also converted to a PDF for printing to put in the charts. Or they can be – just be used electronically. And the next slide just shows another version of this and how it's incorporated. And they've had real success with this. And just – and they just started around July.

The next system is Maine. And Maine actually had been collecting BMI from the Medicaid Well Child Visit forms, but they found that the forms were not standardized. So they're working on standardizing the form, and they're going to roll this out again the beginning of January 2009. And they're hoping to capture up to around 600,000 height and weight on children birth to 18 years of age or more, hopefully, and over the next year.

>> Vivian Gabor:

Thank you, Therese. If anyone in our audience would like to contact you about your work, how can they reach you?

>> Therese Hoyle:

This is my contact information, and please feel free to call me or email me.

>> Vivian Gabor:

Great, Therese. Thanks for the valuable information you've provided. And thanks again to Joe Thompson and Deb Galuska for the excellent information you also presented.

I wanted to remind our listeners that these presentations in full can be downloaded from the MCHIRC Web site. And I'd also like to remind you of something I said earlier: that there are a variety of resources that our presenters have compiled for you related to today's program, and those will be up on the resource page of the DataSpeak Web site as well.

We are now in the question-and-answer portion of our program. We've gotten lots of questions coming in online, and I'm sure there are people who want to be calling in. We're fortunate that all of our presenters can stay on the line to answer your questions. We'll be taking them, as I said, both online and on the telephone. To post a question online, simply enter your question in the field at the bottom of the questions box and hit "Enter." Operator, could you please tell our listeners how they can ask a question on the phone?

>> Operator:

Sure. Ladies and gentlemen, if you'd like to ask a question by phone, please press star-1 on your telephone keypad. A confirmation tone will indicate that your line is in the question queue. You

may press star-2 if you would like to remove your question from the queue. For participants using speaker equipment, it may be necessary to pick up your handset before pressing the star keys. One moment while we poll for questions.

>> Vivian Gabor:

While we're waiting for questions to come on the phone, we'll turn to some online questions. I – my colleague Gretchen Noonan is with us today to help moderate the online questions that are coming in. Gretchen, do we have any questions from our audience?

>> Gretchen Noonan:

Absolutely. As you mentioned, Vivian, we are getting quite a lot of questions, and I just want to let folks know we'll do what we can to get through them. But I would check your resource page, as Vivian mentioned, as the answer to your question might be posted on there within the next few days. So I'd like to start with a question actually for Dr. Thompson. Someone would like to know a little bit more about how you funded your program in Arkansas and what the cost implication was for that.

>> Joe Thompson:

That's a great question. The original legislation did not have any direct funding tied to it, which may have both helped it pass through the legislature with less scrutiny but – and, over time, offered some challenges for how we were going to implement. We have had some funding to support the database in the analytic efforts from the Robert Wood Johnson Foundation, but most of the state-based collection and reporting have come from state resources: either direct support from the Department of Health, which has put about \$200,000 a year into it; or much in-kind work through local schools and other community organizations. An estimate: You know, we ended up having to buy 1,200 scales. And we, by necessity and because of lack of funding, had our State Department of Corrections build the stadiometers. And then we used existing personnel within the Health Department to reach out and support much of the training and the data collection resources.

So I think the in-kind contributions represent most of the support for this. I might add that, over time, we have found that the schools and the Health Department and the Department of Education have integrated this activity into their ongoing budgeted activities so that we don't actually have a separate line item either that could be at risk of being cut by the legislature or to support the local efforts. So there's – it's been a challenge, but we have got through without a specific line item for funding.

>> Vivian Gabor:

Let's take one more online question, Gretchen.

>> Gretchen Noonan:

Sure. Actually, this one would be a great question for Deb Galuska. Someone was wondering if you'd just speak a little bit more about why some of the federal-level sources that you talked about don't have information at the state level and some do. For instance, NHANES doesn't have any data at the state level. They were wondering if you could talk about that for a moment.

>> Deborah Galuska:

Sure. Well, some of the issues, of course, is related to one of the issues I brought up for decisions about methodology, and that's the issues of resources. So the NHANES data, for example, is designed to be a nationally representative survey. And in order to get state-specific levels, we'd have to collect a lot more information from each of the states. And it just does not have sufficient resources for that.

>> Vivian Gabor:

Operator, do we have any questions coming in by phone?

>> Operator:

Yes. Our first question comes from the line of Beth Conray with ODH. Please go ahead.

>> Beth Conray:

Yeah, hi. I was just wondering, for Dr. Thompson: Who is actually doing the BMI measurements in the schools? Is it Department of Health staff, or is it actually the schools are themselves responsible for figuring out who'll do it?

>> Joe Thompson:

It's actually the schools themselves. Frequently, particularly in the younger grades, it is the school nurse providing oversight, but frequently the physical education teacher providing the actual measurement activity. For those schools that haven't – don't have enough local personnel, one important resource that we found is the fairly large number, actually, of nursing programs training both LPNs and RNs. Frequently, a nursing school will adopt a school district and come in and help provide hands-on training for their nursing students, but also a valued resource for the school. So it's school personnel. To be specific, we recommend against using parents, for obvious confidentiality reasons. And we try to supplement where we have areas where the local resource does not meet the need.

>> Vivian Gabor:

Thank you. Is there another phone question?

>> Operator:

Once again, if you'd like to ask a question by phone, please press star-1 on your telephone keypad. We have a question coming from the line of Rosemary Linton with Westchester County Department of Health.

>> Rosemary Linton:

Yes, I just wanted to ask Ms. Hoyle regarding the charting procedure. I only noticed that there was a height and a weight entered and – wondering if there was – for those over the age of 2, if they were including the age – the gender and the age to produce those charts.

>> Therese Hoyle:

This is Therese. Thanks for the question. You were asking about San Diego's height and weight.

>> Rosemary Linton:

The last presentation, Therese Hoyle.

>> Therese Hoyle:

Yeah, yeah. They are just – San Diego's using height and weight. But I'm not sure if they're using gender in their charting – in their measurement for that – for the chart that they display.

>> Rosemary Linton:

Okay. Thanks.

>> Vivian Gabor:

Let me go back to some online – some questions that came in online. Gretchen?

>> Gretchen Noonan:

Sure. Actually, Therese, while we have you, we had a number of questions about privacy. And I think you might be appropriate for answering these questions. Someone wanted you to briefly describe the mechanism or strategy – strategy – excuse me – through which you overcame the Family Educational Rights and Privacy Act issues, since you have to enter this information into a system, and whether parents are actively giving consent – if you could speak to that.

>> Therese Hoyle:

Yes. Thank you very much. In Michigan, the registry is mandated. So it's an opt-out system, so parents have the right to opt out their children. And of the 4.7 million persons in the registry, only 2,000 have ever opted out. And for FERPA issues, in the schools, the schools have the ability to enter – such as immunization data, but we do not allow that to be viewed by the medical community. And when the medical community enters the immunization data, it overrides the school data. And the school is allowed to see both medical and school data. So we do follow all the FERPA guidelines. And the parents are all notified, and they're notified at every entry of immunization at the medical office side. And the schools also notify them if they have to add data to the system.

>> Vivian Gabor:

Gretchen, shall we take another question online?

>> Gretchen Noonan:

Sure. Dr. Thompson, we had a question about whether – when you were developing this program, whether you considered having primary care clinicians do the measurement and why you decided to go with the school nurses rather than a primary care setting.

>> Joe Thompson:

Sure. We, as in many states, had a large number of our counties designated as a medically underserved area. And when we did the assessment of how many kids were being seen and for whom this assessment was being completed, it was, unfortunately, a relatively low proportion. And it did not matter whether they were family physicians or pediatricians. We did not have a high penetration level of this assessment. So with the basis of the epidemic nature and the need for a rapid and universal response, we did opt for a more population-based public health approach through the school system that we could assure that each parent got information as recommended about their child. We do and have incorporated into both the health reports and the opt-out option – we encourage parents to, you know, seek additional care from their primary care clinician for assistance in either interpreting the results or instituting a follow-up plan. But the original screening – we chose an approach that we could guarantee that we would reach the most children, most quickly, and in an appropriate and controlled setting and therefore chose the school-based population strategy.

>> Vivian Gabor:

Thank you. I'm going to just see if we have any calls that have come in. Operator?

>> Operator:

Yes. Our next question comes from the line of Leslie Worcester with the Florida Department of Health.

>> Leslie Worcester:

Yeah What I wanted to ask is actually of any of the states that have been doing school-based BMI surveillance. And that is if you're maintaining a case-level database and, if so, if it gets released beyond the school setting, how is it that you're dealing with the Family Educational Rights and Privacy Act?

>> Vivian Gabor:

Similar to the other question. Dr. Thompson, do you want to...?

>> Joe Thompson:

Sure. We have – again, our setup is a legislative requirement for every student to have the screening assessed and the parent information to be reported. We've actually centralized the collection process and the generation of the BMI percentiles and actually the population of the health report. What we found is, many of our educational leaders did not want the responsibility or the obligation or the exposure for generating the health risk information transmitted home to parents. So we've actually centralized that as an extension of the school and a service to the schools and provide that under FERPA to the school system itself. The issue around the FERPA/HIPAA differences – we have operationalized these as a clinical screening process inside

the school-based setting and have tried to navigate the differences between those two federal obligations judiciously.

>> Leslie Worcester:

Thank you.

>> Vivian Gabor:

Thanks. We have another question from the phone, Ron?

>> Operator:

Yes, we do. Our next question comes from the line of **Joann Akada** with the University of California, Berkeley.

>> Joann Akada:

Yes. Dr. Thompson, I read the report from Arkansas. And do I understand correctly that despite having all of this data – that you've not been able to get physical education into the schools in Arkansas on a widespread basis?

>> Joe Thompson:

We have physical education requirements on a statewide basis for kindergarten through the fifth grade, and then another year in the essentially middle school period, and another year in the high school period. We have had physical activity – not education, but physical activity requirements of 30 minutes a day for all grades with the initiation of the act and the rules and regulations promulgated through the Department of Education. However, in the last legislative session, as I presented and you allude to, we did lose that physical activity requirement.

I would say there is incredible pressure among our educational leaders and the teachers to optimize the use of that academic time in response to some of the pressures that they feel on academic performance. And we have not successfully expanded the physical education role within the school day. We are looking at legislation this year, and we have got – had a wealth of community activities pop up. Specifically, the legislation is to limit school liability for afterschool use of the school facilities so that we may – can open the capital investment that's been made in communities, gyms, tracks, swimming pools, and so forth after school hours and on weekends so that we are able to attain the physical activity but not impact the academic time.

>> Vivian Gabor:

Thank you. Gretchen, I'll turn back to you for an online question.

>> Gretchen Noonan:

Sure. Dr. Thompson, I think this might be directed towards you. Someone was wondering how you handle parents who are upset by receiving this information about their child falling into a high-risk category, and also if you've had any school administrators that you've had to deal with that

have not felt comfortable being responsible for taking care of this height and weight measurement.

>> Joe Thompson:

Sure. Let's separate the two groups, because I think they have markedly different influences sometimes. The parents – we've sent in the first year – we sent 90,000 letters home. Actually, every child gets a health report. In the first year, 90,000 were in one of the two risk groups for either being overweight or at risk of being overweight. We sent 90,000 letters home, and we did have a very small proportion. We had – name and phone number was on the bottom of the letter, and we had about 300 phone calls, of which half of those were from parents that were upset. The specific concern was, you know, the invasiveness of the school-based screening into the parental responsibility and the home health habits that they felt was beyond the role and scope of the educational purview. We had another 150 parents that wanted more information. And I think our external assessment has found a high proportion: Well over 80 percent of parents found the health report not only useful but valuable in the information that it portrayed. So I think we've got an acceptable, low, but sometimes vocal small set of parents that do feel like this is an extension of the educational intervention beyond its appropriate role.

With respect to the school administrators, they have concerns about the time it takes for the BMI. They've expressed far more concern about the impact of losing money from both the pouring contracts and the vending machine sales, because we have turned, unfortunately, to less healthy options in vending products over the course of the last few decades to supplement our children's food availability, and the schools have had a direct financial benefit from that. As we look at whether that's an appropriate response or a healthy response, if you will, it has a negative financial impact on the school leadership and on its financial base. So that's been our more focal point of friction with the school personnel.

>> Vivian Gabor:

Thank you. Let's take another online question, Gretchen.

>> Gretchen Noonan:

Sure. We've actually had a number of people ask this question. I'm not sure exactly who would be most appropriate to answer it, so speak up if you'd like to. But we had a couple people point out that, recently, there have been some emerging guidelines around BMI and race and ethnicity, and they're wondering if you think that there'll be any guidelines coming out for children by race and ethnicity. (Pause) Perhaps Deb? I don't know.

>> Deborah Galuska:

Yeah, I can – well, the most recent guidelines that have come out related to assessment of BMI came out with the AMA expert panel, and those didn't provide race- and ethnic-specific guidelines. They suggested that BMI – you know, that the cutoff for BMI were the same across race/ethnicity. What I'm not sure of, to be honest with you, is whether they looked at that specific question. So – but to my knowledge, there's nothing right now in the near future.

>> Joe Thompson:

I think one additional important piece of information on the guidelines for screening – those screening guidelines are to identify metabolic abnormalities in the early onset of diseases associated with obesity. It's very clear that the epidemic of obesity requires, you know, a change in the caloric balance, if you will – the calories that kids eat versus the calories they expend, which don't take a laboratory test. Once you have a BMI and a documented obese child, those changes just in the caloric intake and the physical activity patterns can begin immediately. We do know – and this has been consistent in our state data as well as the national data – that the minority populations in our situation – African-Americans have a greater risk burden than the Caucasians, and the Hispanics have even yet a greater risk burden than our African-Americans. So the risk is not equally shared, and I think some of the specific focus of programs will need to follow where that risk is borne.

>> Gretchen Noonan:

Great. Thank you. Dr. Galuska, I have a question here specifically here for you. It asks here how important are BMI surveillance efforts at the community level – the planning or evaluation and childhood obesity prevention policies, and also whether the current system sufficed or if it's a structure that needs to be prioritized.

>> Deborah Galuska:

Could you repeat the second?

>> Gretchen Noonan:

Kind of long. Sorry (laugh). It says here, "How important are BMI surveillance efforts at the community level to the planning or evaluation of childhood obesity prevention policies?"

>> Deborah Galuska:

Sure. And certainly, in the ideal world, we'd want data as close as we could to the places where the intervention might be being done. However, you know, we're dealing with a limited resource environment and a competing resource environment. And so, to the extent that we can get that, that's good. In many cases, data that is at a higher level might still provide us useful information to help us plan for what needs to happen. So sometimes, we'd – we are forced to use the state data, even though the local would be the most appropriate, but just limited resources. And that data still can provide us information that helps with planning.

>> Vivian Gabor:

Thank you very much, Deb. I – there are many more questions that have come in. We – just to let folks know, we are going to – if you had a question and you were on hold on the phone, please email it. There's opportunity to email some questions in the next few minutes. And we're going to try to forward these ques– we will forward these questions that are remaining to our speakers. And we may actually put together questions that are the same but try to get – we have all of your emails, so you should be able to get the responses individually.

If you think of more questions, again, you can submit them to us via email actually through the end of the week. The email address would be mchirc@altarum.org. This program will be available on the DataSpeak Web site in the next 2 weeks so that you can access all the presentations at

your convenience, and you can tell others who were not able to participate today they can watch the program.

Before you log out, we would greatly appreciate it if you could take a moment to provide us with feedback on today's program – the survey I mentioned earlier. You can do so by clicking on the feedback form that is on the screen right now. The short survey will open up in a new window when you link to that site.

Know that we'll be broadcasting more DataSpeak programs in the coming months. Announcements about these future programs will be sent out via email, or you can check the DataSpeak Web site in the coming weeks or months at www.mchb.hrsa.gov/mchirc/dataspeak.

Today's program is now adjourned. Thank you very much.