

DataSpeak
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Gopal Singh

Good afternoon. Welcome to today's program, "Building Better Data Systems to Address Youth Violence and Injury." My name is Gopal Singh, and I'm a senior epidemiologist and researcher with the Office of Epidemiology and Research in the Maternal and Child Health Bureau. The DataSpeak series is sponsored through the office's Maternal and Child Health Information Research Center.

Youth violence and injury prevention is a priority for the bureau and for stakeholders across the country. In the most recent Maternal and Child Health Services Block Grant, nearly all of the states and the District of Columbia have chosen to address injury- and violence-related concerns. According to the Children's Safety Network and the Centers for Disease Control and Prevention, unintentional injuries and violence are the leading causes of death, hospitalization, and disability for children and youth in this country.

Today we are excited to have three experts here to discuss the importance of strong data systems in addressing youth violence and injury. First, Dr. George Bahouth, director of the Children's Safety Network Economic and Data Analysis Resource Center, will describe the current trends in youth violence and injuries from a national perspective. Our second speaker, Dr. Jenifer Cartland, director of the Child Health Data Lab at the Ann and Robert H. Lurie Children's Hospital of Chicago, will present on using public data sources to tell the story of child and adolescent health and well-being in Chicago and Illinois. Finally, our third speaker, Dr. Deborah Azrael, director of research for the Harvard Youth Violence Prevention Center, will give us an overview of the center's Boston Data Project and some emerging findings from this data.

Now before we begin, I would like to introduce Sarah Lifsey, the moderator for today's program. Sarah?

Sarah Lifsey

Thank you, Gopal. First I'd like to welcome our presenters and everyone who is in the audience today. Thank you for joining us. Before we begin our presentations, I just have some brief technical guidance for you all. First I'd like to call your attention to the DataSpeak website, which we hope you'll visit after today's program. There you'll find sources on today's topic, including some that our speakers will highlight in their 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 presentations directly from the screen that you are seeing right now. On the screen on your left that says "Download," you can just click on the file that you're interested in to highlight it, click "Save to My Computer," and follow the

simple directions on the screen. If you would like to make the slides larger, simply press the “Full Screen” button at the top of your screen; and to return to the original view, press it again.

Finally, please note 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 that time. If you’d like to post a question online, you can do so at any time during the program using the “Questions” box that is at the bottom of your screen. Just type your question in the box next to the arrow and hit Enter.

Now I would like to turn to our first speaker, Dr. George Bahouth.

George Bahouth, ScD

Good afternoon. Thank you, Sarah, and thank you, Gopal, for the introductions; and thank you for inviting the Children’s Safety Network to participate in this webinar. My name is George Bahouth, and I’m the director of the Children’s Safety Network Economic and Data Analysis Resource Center at the Pacific Institute for Research and Analysis. We work in partnership with EDC, and we’re funded by the Maternal and Child Health Bureau at HRSA. Today I’m going to be talking about youth violence and injury data, looking at trends from a national perspective.

So to get started, the Children’s Safety Network Natural Resource Center provides research and technical support to states, territories, and local communities in the areas of child and adolescent health. So in particular, our role at PIRE is to use national and local injury data as well as cost information to support states and local programs. And our goal is to support policy decisions and evaluations of injury prevention strategies.

I’m certain that many of you here on the call have seen this slide, the “10 Leading Causes of Death” tables produced annually by CDC. I think it’s important to take a look at this very early on to get oriented in terms of the major causes of death. So, for example, the blue boxes here are unintentional injuries; and from age 1 to 44, these are the primary cause of death. Unintentional injuries include motor vehicle crashes, unintentional poisonings, drowning, and so on. So later in life, falls also become a key issue. As you can see, homicide is also in the top four causes until age 35, beginning as early as age 1. Suicide emerges really as an issue starting at about age 10–14, but the numbers really increase dramatically in the later teen years, so ages 15 and up.

When we look at unintentional injuries by age group across the years, we’re seeing improvements across the board. One exception is really the 1-year-and-younger age group, which has shown an upward trend since roughly 2003. So by and large, this is good news. As far as the 1-year-and-younger age group is concerned, some of this upward trend relates to suffocation and safe sleep-related issues. Also, we understand this problem a bit better, so identifying when these fatalities occur is happening more easily than it has in the past, and that may have something to do with the upward trend.

When we look by race and ethnicity, the trends all look very positive, with the rate of death trending downward across the board. Overall, the rate of death by race and ethnicity shows clear disparities between groups. And when you dig a little further, which is really not shown here in the slide (but you

dig further by mechanisms), some sources of the disparities become clear. We'll touch on this again in just a little bit. This plot, by the way, includes children and young adults up to age 19.

So looking across unintentional injuries by mechanisms over the past 20 years, there have been tremendous improvements across the board. Motor vehicle, pedestrian, bicycle, drowning, fire safety all show improvements. Falls and, to a lesser extent, poisoning deaths are down as well. Again, with regard to suffocation, a theory is that many of these deaths were in the past assigned as unknown causes or perhaps attributed to SIDS, which is a non-injury-related death. Now many more of these cases may more accurately be attributed to suffocation and choking. In most cases, it's difficult to attribute these improvements to any one particular injury prevention program or policy change, but as you begin to dissect each of the mechanisms, some of the causes are made more clear.

So when we look at the next age group, drivers age 15–20, the number of deaths per [indiscernible] shown a significant decline in the past 10 years or so. Again, there's a number of reasons [indiscernible] successful trend and this positive trend. GDL (graduated driver licensing) programs, increased belt wearing rates, reductions in underage drinking and driving have a significant effect. There are other issues that also tend to cloud this. So, for example, there's been a lot of discussion, a lot of thinking that texting and driving may lead to increases in injury crashes and fatal crashes as well. But still, the impact on vehicle deaths is a bit gray, so this is an area for further evaluation of [indiscernible].

This slide—as far as data extract, we see significant declines in fatal crashes involving legally intoxicated drivers at that point. So at roughly 1998, things tend to level out, and we're not seeing tremendous reductions in alcohol-related deaths. So reductions in drinking and driving do have an impact, but not as much as pre-1998.

I apologize: This slide is somewhat crammed. But the primary takeaway here is the fact that major health disparities exist between different racial and ethnic groups across the U.S. So, for example, Native American populations have nearly twice the fatality rate of all other racial and ethnic groups shown here in the motor vehicle occupant and pedestrian categories. So that's a clear trend, and comparing to overall, it's quite significant. Another critical issue relates to reporting, so a high rate of undefined or unspecified motor vehicle-related causes really may impact how resources are allocated for injury prevention programs, not just for Native Americans but across all racial and ethnic groups.

This slide here begins to highlight some of the differences by level of urbanization or urbanicity. So depending on how close the crash occurs, [indiscernible] really impacts not only the severity of the crash but the quality and how rapid EMS resources may arrive to a crash scene. So we're seeing, obviously, as you move further from large metropolitan areas, the fatality rates increase with those two factors.

This data here originates from the Consumer Product Safety Commission dataset. And we were looking at the leading consumer products and the percentage of nonfatal injury costs by different product categories. So this was actually a repeat of a study that was performed in the mid-'90s. And for ages 1 and under, stairs or steps really was the highest percentage of injury costs. Now, with introductions of safer environments and countermeasures to improve that, we see that stairs have dropped down to rank #4.

Looking at ages 1–4, falls from beds, trips on floors, stairs, and so on make up the highest percentages of nonfatal injury costs. Ages 5–9, we see bicycles, monkey bars, and beds.

The real interesting point, in my opinion, is on the next slide, when we get to ages where students begin to play sports. So in the 1995 study, this data showed that basketball represented the highest percentage of nonfatal injury costs; and now we're seeing shifts, so football is rising closer to the top, bicycles are still close to the top, and soccer is making its way towards the top as well. So there are some definite changes here. Children's Safety Network is going to be putting out a fact sheet and a publication surrounding this data, and we think it's quite interesting.

So when we look at intentional injury deaths, we're seeing overall declines. But these are only lukewarm, really, compared to the unintentional injury rates, so some slight reductions, but nothing dramatic.

So again, risk for intentional injuries shows a strong age dependency, where homicide rates are higher earlier in life while suicide rates climb beginning at the age of 15–19, and they stay up really across the entire lifespan. And this data originates from CDC WISQARS, and it covers the 2007–2009 mortality data.

The next couple of slides really, again, show few clear patterns over the past 10 years with regard to intentional injuries, and that includes suicide and homicide. So here's ages 10–14, and we see localized trends but no predominant decline or increase across the board.

So when we look at age 15–19, the same is true: very little in the way of trends when youth age 15–19 are merged together. It is important to note that when we separate these by level of urbanization, ethnicity, and gender, some patterns emerge; but overall, when you aggregate the data, we're not seeing a lot in the way of trends.

So when we look at violent deaths, one source of data is the National Violent Death Reporting System collected by CDC. The dataset includes information from death certificates, coroner reports, medical examiner reports, police information, crime lab reports, so it's really a wealth of information on violent deaths.

Looking across the numbers, we see more than half of the total number of deaths are suicide related, while about a third are homicide, followed by undetermined causes. Unintentional firearm-related injuries and so on are further down the list.

Looking at manner across these mechanisms, we see that firearms are involved in well over half of the homicides and suicides. Within the suicide group, hanging and poisoning follow. With regard to homicide, assault with a knife and manual assault follow firearms.

So this slide shows historical results from the Youth Risk Behavior Surveillance System (YRBSS). And this data is collected by CDC, basically monitoring risk behaviors that contribute to unintentional injuries and violence among youth, and that includes sexual behaviors, alcohol and drug use, tobacco use—unhealthy behaviors, including diet and exercise. So this slide shows that over the past 20 years or so,

we see a reduction in youth carrying weapons, but that has somewhat [indiscernible] as of 2000, so a tremendous reduction from 1990 to 2000 and then somewhat flattened.

In terms of attempted suicides, we see mixed trends. And that really mimics the mortality data that I showed earlier: no clear downward trend or upward trend, maybe some localized patterns after 2005, but nothing overwhelming.

And then finally, this last YRBSS slide touches on an issue which is difficult to measure. So while this is not really a measurement of bullying, the concepts are very similar. So students who did not go to school because they felt unsafe really is something that I think deserves quite a bit of additional attention in terms of ways to measure threatening behavior at schools, whether it's classified as bullying or not.

So I'm close to wrapping up here. These last couple of slides really touch on data sources that we use at the Children's Safety Network to look at mortality and injury data, also to look at youth injury and violence, looking at deaths and injuries in the motor vehicle field. One note: We are working on an expanded version of this list of datasets, and we will be posting this to the Children's Safety Network website. That should be available in the coming weeks for download. And our hope is that it's a resource [indiscernible] analysis and dig into their own data.

So in summary, in terms of trends overall at the national level, motor vehicle deaths and injuries are decreasing overall, but there really are some new factors. We've got to wait to develop some additional measurement tools related to texting and distracted driving. We're seeing increasing trends in suffocation and choking. Unintentional poisonings are an emerging issue, so prescription drug use is more prevalent across all ages. And then finally, suicides and homicides really show mixed trends and nothing overly dramatic.

Thank you all for your attention, and I'd be happy to, at some point, answer any questions. Thank you.

Sarah Lifsey

All right, great, George, thank you so much. As a reminder, if any of our listeners have a question for our speakers, you can submit it online at any time using the form, the "Questions" form, at the bottom of your screen. Next I'd like to turn to our next speaker, Dr. Jenifer Cartland.

Jenifer Cartland, PhD

Thanks, Sarah. OK, I'm going to focus a little bit more on how we've tried to tell a story about injury from a local level. And I think we're going to use a lot of the data sources George pointed out, but we're going to be coming at it from kind of the bottom up rather than the top down. What we've learned, just looking from Chicago and Illinois, is that really all injury's local. What a child is exposed to in terms of risk in one neighborhood might be very, very different than in other neighborhoods. So we try to tell the story as locally as possible to give people living in their communities a really clear sense of what they can do to bring down injury rates. So what I'm going to do is talk a little bit about how we've built our system and what we do in the Child Health Data Lab.

So we started in the Child Health Data Lab about 15 years ago with a charge to tell the story of injury and health for children in Illinois and Chicago. And the minute we got started, we ran against some certain challenges, and I just want to point them out to you, because I think other people working in other states and cities might have similar challenges.

So our first challenge is that there's just not a lot of data out there for children. We really set our public health data along the priorities set by death records, and fortunately, not many children die. And so, if you're going to use public health data to tell the story of the risks for children, it's very hard to get that data; it's not necessarily out there. But we began with death certificate data, Illinois Trauma Registry data. And at the time we started, we wanted to use hospital discharge data, but it wasn't e-coded yet, so we were limited in what we could do with that.

And then we were also challenged just by what priorities there are for data collection. So, for instance, because children and adolescents fortunately die at a lower rate than other age groups, when the states and CDC decide what data collection priorities there are, children's issues are often not on the docket. And then sometimes the data that do exist are really organized around priorities for adults. So, for instance, when we looked at the CDC e-code grouping (they have kind of a schema they use to group e-codes into simpler categories), they put firecrackers under a broad category called "Explosions." And we just thought, for prevention, it really doesn't help parents much, so we regrouped it under "Fire Risks," because we thought that's how parents relate to that. They also didn't have a category for sports and outdoor-related injuries. And so, things like that that are just kind of organized around adult issues—and children aren't just little adults; they have really different lives, and so their injury risks are really different.

The third big challenge was that sharing data was a really new idea in our state and in our city. And that's not necessarily the case everywhere, but we did have to start with some really basic confidence-building measures to encourage our agencies to share data with us so we could get going.

So our kind of approach all along has been "Use what you can now and build something better for later," because we really feel a need to get information out there from what we have, kind of maximize utility of whatever we have now, and really use the leverage that we get from publishing that data to encourage people to want more and better data. So we used what's on the registry, and we were able to leverage that to encourage the state of Illinois to include e-coding and discharge data, which they now do. We also now, in our discharge dataset, include ED visits, not just inpatient stays. And each state has its own challenges there; we all have our own mountains to climb. Those were our mountains, a couple of ours. But the point is that once you start getting information out there, people want more, and then that's your leverage to get in there and help build better systems.

So we've been very involved with building better systems in Illinois, and there's three systems that I've grouped here as new systems for Illinois. One is the Illinois Violent Death Reporting System, which is actually not funded through the CDC, so it's part of the 18-state system that George sent you; it's funded by the state of Illinois. That includes violent death, homicide, suicide, and undetermined deaths for children under age 3—for all ages. The Illinois Health Survey for Youth, which is another household-

based survey that's very broadly focused on children's health for ages 0–17—we've piloted that, and we've used it in some other studies. We're advocating for it to go statewide. And the Youth Risk Behavior, which of course is not Illinois only—but for Illinois it had not been collected successfully since 1993, and so we kind of encouraged the state to work with us, and we were able to field the survey in a way that builds the kind of dataset that we can use for analysis. We're constantly building capacity for data. We're now working with Medicaid claims data to look at recurrent injury; to look at medically complex kids, who are also more likely to have injury issues—and then also our discharge data, in the last 2 years, has really expanded its capacity by e-coding and adding ED visits.

So now I just want to talk to you about two data sources we use a lot to talk about injury. One is death certificate and discharge data, and the other is the Illinois Violent Death Reporting System. So the discharge data and death data are great at telling us the prevalence of different types of injuries across the entire state and locally. We generally have ZIP code-level data for the discharge data that doesn't go quite as local as we want, but it's very helpful to be able to go down to that level. It does cover all of Illinois, but it doesn't go into a lot of depth about how the injuries happen. But the IVDRS data goes into a lot of depth about how certain kinds of injuries happen, and currently our data system covers about 70% of all the violent deaths in Illinois. The IVDRS, like the NVDRS, contains death certificate data, medical examiner investigation data, police data, and crime lab data. And so, that allows us to go very, very in depth on several different types of injury death, and I'm going to show you a little bit about what we do with this data.

So we have played around with dissemination for years. It wasn't until a couple of years ago that we came on a formula that we feel really works. And we do data briefs every couple of months. We choose topics, and we have a very extensive listserv that—we send them out, and we always get fantastic feedback on these. And we keep our formats very similar so they're easy to follow and there's really no surprises; it's just each time, we get people into a different topic.

So this is the front page of a data brief we did on youth suicide. And you can see this is all from hospitalization and death data. And you can see we have, up in this corner, up in this top of the second column, we have trends over time, which we always include—gender, racial differences, mechanism differences.

And the second page of the data brief always includes a breakdown according to the seven Illinois public health regions, which isn't perfect, but it's surprising how different these regions are. A lot of them have a lot of urbanicity, a lot of them are purely rural, and you really see a lot of differences in injury rates depending on where kids live. These rates you see here, which I don't think you can probably read, are for sports and outdoor injuries, which would include drownings, boating types of things—actually, excuse me; it doesn't include drownings. It includes being hit by a ball, running into somebody, somebody hitting you in sports; it involves four-wheel, off-road vehicle injuries and all of that kind of stuff that kids are involved with.

This is the third page of our typical data brief report that uses discharge and death data. This is the city of Chicago, and this is actually a report on anaphylaxis from food-related allergies. And you can see,

again, if you could look at these rates, which I know it's very hard to, but along here on the very bottom, we have the rates by part of the city, and you can see how variable the rate is. So it really depends where you live. It's surprisingly consistent how much that message is true.

This is another data brief we did. This is from the Illinois Violent Death Reporting System, and it can show you a little bit more about how in depth we can go once we have the system operational. What we've done here is, we've combined SIDS, undetermined infant deaths (we had a lot of detail on the circumstances surrounding them), and accidental suffocation in bed. And you can see how the bottom number here, the SIDS rate, overall is a fairly flat story but how the definition of a death as undetermined, accidental death, or SIDS kind of plays off each other sometimes.

We show some racial differences, but this is what I really would like to show you. With the IVDRS, we actually go in depth with each death and can do a full extraction from the medical examiner report. The medical examiner report for undetermined death involves a scene investigation. And from that scene investigation, they spend a lot of time interviewing the parents and the caregivers about how the child was found, if the child was sleeping alone, if the child was sleeping with somebody in bed—all of that, and we were able to code that. And you can see a huge number of these deaths, virtually of the undetermined infant deaths, happened during sleep. So the medical examiner has a very hard time figuring out whether it's SIDS or accidental suffocation, and if they can't figure out which, they call it "undetermined." And so all of these deaths, from our perspective, are very tightly linked.

But what has garnered so much attention is this map here, where we see our city of Chicago, and you can see the red dots are where these deaths occurred in Cook County. And everyone who knows the city of Chicago looks at that map and is able to take away a really clear message right away, because we know where the high-income and low-income populations are in the city, and really these deaths follow that mapping almost perfectly. So still, a couple years later, people come back to me and say, "I'm so glad you did that map. Can you do another one on this and that and the other thing?" It's a very clear story of what the issues are.

This is just a little table that I took from a data brief we did on suicide. And I just wanted to share with you some of the information we get on suicides from the Illinois Violent Death Reporting System that's really not available from any other data source we have. So we have documentation whether the person expressed any willingness or desire to commit suicide prior to the suicide. We have information on their mental health status; whether or not they were being cared for by a mental health provider at the time; whether there's a history of intimate partner issues, either as a victim or a perpetrator; and then we have a lot of information about whether or not the individual health problems, whether they had a job crisis, whether they had financial problems. And this really helps really underline the preventive strategies that need to be in place to prevent suicide. So based on this kind of information, you can really give clinicians and organizations who provide service to the public really clear ideas on what kinds of things trigger suicides for their populations.

So I feel like we've made a lot of progress, and we've really been challenged to figure out how to disseminate data in a way that matters to people. Our ongoing challenges really have to do with making

sure that the way we present data really feeds tightly into the efficacy process. There's a lot of efforts around, for instance, suicide prevention. And we need to make sure that when we release data or when we think through our data, we are really tightly linked to our advocates out there working in these areas. So one of the things we always do is, when we have a data brief, we find an expert and/or an advocate, hopefully both, who reads through it and double-checks it for us and says, "Oh, these are the issues I think you should be focusing on; these are other issues that I think are less important these days." And it's very, very helpful to have that feedback; it really helps sharpen our communication. Because of health care reform and because of other issues around children with complex medical needs, we're starting to really focus on unique injury and other related needs for children with complex needs.

And I think that's all I have for you today, so thank you very much. Please let me know if you have any questions.

Sarah Lifsey

Great, thank you so much, Jenifer. As a reminder, if you have a question for any of our speakers, you can submit it online at any time using the questions box down at the bottom of your screen. And now I would like to turn to our last speaker, Dr. Deborah Azrael.

Deborah Azrael, PhD

As Sarah said, I'm the research director at the Harvard Youth Violence Prevention Center. And I'm really glad to have been invited to present today at this DataSpeak and to tell you a little bit about the Boston Data Project, which is the keystone effort of the Harvard Youth Violence Prevention Center and a successful and really mutually valued collaboration between Harvard and the city of Boston. Most notably, a number of city agencies include the mayor's office, Boston Public Health Commission, the Boston Centers for Youth and Families, the public schools, the police department, as well as a variety of academic partners, community partners, and local philanthropic organizations.

The Boston Data Project, for most of its existence, has been principally funded by a grant from the Centers for Disease Control, and it's really an effort to provide the city of Boston and its residents with an ongoing data collection system that will allow them to understand key determinants of youth well-being in the city over time. The project consists of two major primary data collection efforts: the biannual Boston Youth Survey, which is an in-school paper and pencil survey of Boston high school students; and the Boston Neighborhood Survey, which is a random-digit-dial telephone survey of Boston adults. An important innovation of the project, which enables us to link to the external data sources that are listed here, is that we are able to geocode respondents to both the youth survey and the neighborhood survey to really small geographical units, even as small as census block groups, which is an advantage I'll come back to again in a minute.

As a little bit of background, the backbone of the data system, the Boston Youth Survey, has about a 15-year history in the city with the mayor's office. It began as an occasional survey of youth participating in summer school and summer jobs programs and then continued in that form until 2004, when the city partnered with the Youth Violence Prevention Center here at Harvard to conduct a more representative, comprehensive survey in Boston public high schools. And so, we conducted that revamped survey not

only in 2004 but then again in 2006 and 2008 as part of a grant from CDC and then also around the random-digit-dial telephone survey of Boston adults, which we conducted in 2006, 2008, and then again in 2010.

So, many of the findings that I'm going to present today come from the Boston Youth Survey, which is really sort of the backbone of the system. And the topics that we cover are sort of listed here, but our primary focus is on exposure to violence: violence victimization, violence perpetration, and then the sort of neighborhood characteristics that seem to be the sort of key policy-level characteristics that might affect those outcomes. So before I do that, I just want to talk just briefly about what we see as one of the key strengths of the system, which is that we can think about these outcomes; and this really harkens back to what Jenifer was just talking about, which is that we can look at these outcomes in relatively small geographic areas.

So what you see here is a map of Boston, and for this presentation, I'm mostly going to be presenting findings that are specific to the city as a whole. But we can look at any of the—Boston is sort of conventionally made up of 16 neighborhoods; that's what's depicted here. We can look at results at the level of any of these 16 neighborhoods. But because we were particularly interested, as I said, in the effect of neighborhoods on outcomes, we worked with stakeholders throughout the city to identify a set of meaningful—what we called neighborhood clusters. So what you see here is a map on the so on the earlier slide, you'll see Roxbury right in the middle of the map of Boston; this is a zoomed-in version of that little neighborhood, which we've subdivided into nine additional neighborhood clusters, each of which is comprised of two to three census tracts.

So as I said, a major focus of the youth survey has been on youths' exposure to violence, both violence that they've witnessed and violence that they have experienced directly. And for all of these measures, we're looking at past-year exposure to violence. And so, what we see here is that about 65% of kids in our samples (these data are from 2008) report having witnessed violence within the past year; 28% (and those aren't mutually exclusive) report having been a victim of violence directly, and where that violence takes place varies. So what you see is pretty high level: 31% of kids say that they've witnessed violence in their neighborhoods or in schools; 10% and 7% that they've been directly victimized by violence; and also a very sort of remarkably high percentage of kids have experienced, either directly or by witnessing, violence either on public transportation or on foot to and from school.

We find the effects of that exposure, not surprisingly, to be really deleterious, to have a really deleterious effect on youth, with those students who report high levels of depression (so the people who have endorsed four depressive symptoms) reporting much, much higher levels of exposure to violence than those with fewer depressive symptoms. But we also see that there's an association between exposure to violence and feeling unsafe and that a really sort of disheartening fraction of students in Boston feel unsafe almost all of the time. So 10% of kids in our sample say that they rarely or never feel safe at school; 21% say that they never or rarely feel safe in their neighborhoods. And this surprised us at first, although it turns out it makes sense, because kids in Boston don't go to neighborhood schools, so they do a lot of traveling across the city. And it turns out that 30% of kids feel unsafe on MBTA, which is the name of our public transport system.

So, as I noted earlier, a major focus of our surveys is not just on exposure to violence but on perpetration of violence by youth. Here I just wanted to show you a couple of findings we've divided, and the columns here are self-reported minor aggression, moderate aggression, and severe aggression. And what you see, just as an example, is that among the 30% of youth in our sample who said they used alcohol in the past month, a pretty remarkable number also reported having perpetrated aggression, and a full two-thirds in fact reported having perpetrated severe aggression; that is to say that they had attacked or threatened to attack someone with a weapon.

We see similar results in this next table. Again, just to give you an example, in the middle of the table, under "Family Support," 37% of kids said that they'd ever been pushed, grabbed, or shoved by a caregiver. Among those kids, 65% reported having ever perpetrated severe aggression within the month prior to the survey.

So, just digging a little bit deeper into the perpetration, this is a set of Venn diagrams from a paper that we wrote about the overlap between sibling, peer, and dating violence among students in Boston. And it's a little hard to read the bottom line. What's remarkable is that unlike for adults, where people who perpetrate dating violence tend not to be the same people who perpetrate peer violence, what we see here is that a full 6.5% of boys who reported any sort of violence perpetration had perpetrated violence against siblings, against peers, and against dating partners; and among girls, the numbers were even higher, with 16.2% of girls reporting all three types of violence.

So a core interest of our center over many years has been gun violence, and so we've been particularly interested in gun carrying behavior by kids. What we see, which is consistent with results from Boston, although you may recall these numbers are lower than the estimates from the YRBSS for the nation as a whole, is that about 6.5% of kids report carrying guns in Boston, about four times as many boys as girls. But going beyond what's reported in the YRBSS, we also wanted to know what youth thought about the behavior of their peers, since there's a big literature in the public health arena that suggests that youth tend to overestimate the high-risk behavior of their peers, like rates at which they're having sex or binge drinking, and a smaller but suggestive literature that the changing is perceptions of what their peers are doing. In other words, informing them that they are overestimating can sometimes reduce the likelihood that the youth him- or herself will engage in that behavior. So we asked kids not only about their self-reported gun carrying, which is in the bottom row in this table, but also how many of their peers they thought were carrying guns. And when we broke it down by the reports of gun carriers versus non-gun carriers, we found that gun carriers thought that 40% of their peers were carrying guns and that non-carriers thought that 32% of their peers were carrying guns.

This is too complicated a graph, although it's colorful. When we looked at what predicted gun carrying among our survey respondents, we found that a number of factors seemed to predict gun carrying. Some of them, such as adult support, which you see on the very bottom row ("I know adults who encourage me often"), seem to suggest potential interventions for reducing gun carrying. Others, like having been victimized in the past year, seem to increase gun carrying. But most interesting, relative to the question of overestimation, was our finding in the first green line, which was that, even controlling for whether or not a higher percentage of youth in the respondents' neighborhood carried guns,

overestimating the number of your peers who were carrying guns was in itself a risk factor for gun carrying, suggesting potentially that education, peer based or otherwise, about the actual carrying behavior of kids' peers might in itself be effective in reducing gun carrying in Boston and perhaps elsewhere—a finding that was born out sort of in the hypothetical by kids' response to a question about what they would do if it turned out that fewer kids in their neighborhoods carried guns. And we can see here that 40% of kids who reported having carried a gun said they'd be less likely to carry a gun if fewer kids in their neighborhood carried guns, and 70% of kids who had not carried a gun felt the same way.

So I just wanted to show you a last slide here that looks at the relationship between youth violence perpetration and neighborhoods, because I talked about our particular interest in the relationship between the neighborhood characteristics and outcomes for youth. And this, again, is a sort of complicated table, but if you look at the top half of the table, the items that are numbered 1–6 are a set of neighborhood characteristics that we asked kids; and the 8–13, which is supposed to be 7–12 in fact—but in any case, 1–6 were questions that we asked of kids, and the bottom is questions that we asked of adults. But these are questions about neighborhoods, many of which are validated, so we looked at collective efficacy, social cohesion, social control. And what you see in this table is a really consistent story, which is to say that in neighborhoods where neighborhood characteristics are worse, where there are lower levels of collective efficacy, lower levels of social cohesion, etc., more kids perpetrate violence against a dating partner than in those neighborhoods where there are higher levels of adult interactions with kids and the like.

So in conclusion, the Boston Data System, I think, has been—we've drilled down further into the world of data we have. This is very, very local data available at a very specific geographic level with the advantage of being repeated over time, so we're able to track changes over time and any number of outcomes. We can do that with real geographic specificity. We are able to integrate crime data and emergency department data along with these two surveys that we run every couple of years. And the data have been really useful: They've been used in design of interventions; they've been used in evaluations. And in some ways, coming from an academic institution—one of the most important things that's come out of the system is the sort of successful model of academic-municipal partnerships where we've been able to procure funding to collect data about the city. We've been able to use those data to write journal articles, which is the sort of coin of our realm, but also and really importantly to provide useful, actionable data to policymakers and community members in Boston. So thanks.

Sarah Lifsey

Great, thank you so much, Deb. And thank you, again, to everyone who has presented today. It's been a very engaging program. And we already have some questions coming in. I'd just like to remind you 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 hit Enter. And to ask a question on the phone, just press *1 to indicate that you have a question, and the operator will let us know that there is a question and indicate to you when you can ask your question.

So while folks on the phone are joining the queue, I'm going to start with a couple of the online questions that have come in. And the first question I have is from Vishnu, who wants to know more

about evidence-based programs on youth violence prevention. Have any of our speakers encountered any promising evidence-based programs on youth violence prevention that has perhaps come out of some other work?

Deborah Azrael, PhD

This is Deb Azrael. Data from our system have been used to evaluate a promising intervention here in Boston, which is targeted at gun violence, modeled on the Chicago sort of interrupters model, so that's one example. The CDC does have a very nice compendium of evidence-based youth violence prevention initiatives that I would commend the listener to. Youth violence has such a broad range of types that a lot depends on that.

Sarah Lifsey

OK, great. Any of our other speakers? [Pause] Well, the next question I have is from Amy, and it's for Dr. Cartland. And Amy wants to know if the data briefings are available online to the public.

Jenifer Cartland, PhD

Yes, they are. Just go to our website, chdl.org, and you'll see on the right-hand side "Publications," and they're under there.

Sarah Lifsey

OK, great. The next online question I have is from Vishnu, and I think this is for Dr. Azrael or Dr. Cartland: "What is the level of data integration in your systems? Is it an automatic feeding-in from various sources into one place, or do you have to do things manually to integrate the data?"

Jenifer Cartland, PhD

Well, this is Jenifer. We don't integrate our data. The Illinois Violent Death Reporting System brings data from multiple systems, and it is fully integrated, but we really don't have a means of integrating hospitalization data or survey data with any data with identifiers, because that data doesn't come to us with identifiers. And also, to the extent that we would integrate something like Medicaid claims data with death certificate data or something like that, we would just need to change and update our data-sharing agreement about that. I don't think it would be a problem. But we are not going to go through that. And once we have a really clear notion in mind of what we're going to get out of it, data integration is a great idea. It's a lot of staff time and effort to get it right, and so we go into it really knowing what we need out of it.

Deborah Azrael, PhD

I would say, in our data system, the data are integrated at the level of geography; and for our telephone surveys, the data are geocoded automatically—for our youth surveys, actually an enormous job, because we ask kids what street they live on and what the nearest cross-street is to their house, and then we hand-geocode those. And so, it's a big, big job that we think is worthwhile, because the life that kids are living here in Boston, at least, is really in very discrete, small neighborhood areas.

Sarah Lifsey

OK, great, thank you. The next question I have from the online queue, I think, should be addressed to all

of our speakers, since you all deal with multiple data sources: “What are the biggest challenges to data sharing, and what strategies have you found that can be used to increase data sharing?” And that question was from Laura.

Jenifer Cartland, PhD

Well, this is Jenifer. I can talk about our experiences. I think, from our perspective, our agency’s had a history and experiences of not having control over the data or how the data are used once it leaves their system. And so, a big part of our getting good data-sharing agreements is not just assuring them that they’re going to be able to be full partners in how we use the data, but also building that capacity to do that with them over time. State agencies and local agencies are often kind of in the crosshairs when they release data and let people know what’s going on, and sometimes they get a lot of bad press; and because of that, even though it’s good work, it needs to get out there. So I think letting them in on it and be full partners is really the way to go.

George Bahouth, ScD

Yeah, I agree with that completely. This is George Bahouth. So one example of a really rich source of data that we use—we work with AHRQ and tap into the HCUP dataset, the Healthcare Cost and Utilization Project. And in making AHRQ a research partner and really having them involved in our publication (also the formulation of the research questions) really helps us to get past a lot of the issues of sensitivity. Of course, treating the data correctly and not sharing sensitive information is a very important part, but that collaboration really brings us a long way.

Sarah Lifsey

OK, great. Dr. Azrael you have any insights into data sharing? Or does anyone else have any comments?

Deborah Azrael, PhD

Sorry, I was just thinking about this. I mean for us, this is Debbie Azrael. The key for us has been, I guess, what I was trying to say at the end of my slides, which is just genuinely partnering. And we’re an academic institution, and so for us it’s really trying to make credible our interest in providing data that are useful to practitioners so that the city isn’t sort of our research subjects but instead our partners and bringing as much to the table and getting as much from it as we are.

Sarah Lifsey

OK, great, thank you. Well, I believe that is all the time we have for discussion today. Answers to those questions that were not addressed during our Q&A period today will be posted in writing with the program archive when it is released. 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 email through the end of the week using the email address that you see on your screen, mchirc@altarum.org.

Before you go, we’d like you to know that we will be broadcasting more DataSpeak programs in the coming months. Announcements about those future programs will be sent out via email to anyone who registered for today’s program, and announcements will also be posted on the DataSpeak website.

And finally, before you log out, we would really appreciate it if you would take 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, just simply click on the evaluation link on the screen now, and the survey will open up in a new window.

Today's program is now complete. Thank you all for joining us. Thank you to all the speakers for their presentations, and have a great afternoon.