NCIPC BOARD OF SCIENTIFIC COUSELORS

September 26 – 27, 2017

National Center for injury Prevention and Control
Centers for Disease Control and Prevention
Atlanta, Georgia

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DEPARTMENT OF HEALTH AND HUMAN SERVICES
PUBLIC HEALTH SERVICE
BOARD OF SCIENTIFIC COUNSELORS (BSC)
Centers for Disease Control and Prevention (CDC)
National Center for Injury Prevention and Control (NCIPC)

Twenty-Second Meeting
September 26-27, 2017

Crown Plaza Atlanta Perimeter at Ravinia
4355 Ashford Dunwoody Road, NE
Atlanta, GA 30346

Summary Proceedings

The twenty-second meeting of the National Center for Injury Prevention and Control (NCIPC) Board of Scientific Counselors (BSC) was convened Tuesday and Wednesday September 26-27, 2017 at the Crown Plaza Atlanta Perimeter at Ravinia in Atlanta, Georgia. The BSC met in open session in accordance with the Privacy Act and the Federal Advisory Committee Act (FACA). Dr. Christina Porucznik served as chair.

Tuesday, September 26, 2027

Call to Order / Roll Call / Introductions / Meeting Logistics

Christina A. Porucznik, PhD, MSPH
Chair, NCIPC BSC
Associate Professor, Department of Family and Preventive Medicine
University of Utah

Dr. Porucznik called the twenty-second meeting of the NCIPC BSC to order at 9:00 AM on Tuesday, September 26, 2017. She requested that Mrs. Tonia Lindley, NCIPC Committee Management Specialist, call the roll.

Mrs. Tonia Lindley conducted a roll call of NCIPC BSC members and *ex officio* members, confirming that a quorum was present. Mrs. Lindley also called the roll and established that a quorum was present subsequent to each break and lunch. A quorum was maintained throughout the day. In addition, she reviewed housekeeping/logistics and requested that members participating via teleconference or Adobe Connect send her an email acknowledging their presence. A list of meeting attendees is appended to the end of this document as Attachment A.

Dr. Porucznik welcomed the BSC members and *ex officio* members. She thanked them for their time and commitment to injury and violence prevention, and for taking time out of their busy schedules to participate on this important committee that provides advice to the leadership of NCIPC on its injury and violence prevention research and activities. She recognized that there were many new members in attendance. She emphasized that while each member was

appointed to the BSC given his or her specific expertise, they all were welcomed to offer input about other areas as well. She stressed that part of the point of the BSC is to offer a broader world view to CDC and to suggest potential new connections and/or collaborations. Dr. Porucznik then called for introductions, requesting that everyone provide some brief information about themselves and offer some context about why they are serving on the BSC. She concluded this session with a review of the meeting agenda.

Approval of Minutes

Dr. Porucznik referred members to the minutes included in their binders from the last BSC meeting in September 2016. With no revisions proposed, she called for an official vote.

Vote: September 2016 NCIPC BSC Meeting Minutes

Dr. John Allegrante moved to approve the minutes of the September 7-8, 2016 NCIPC BSC meeting. **Dr. Phillip Coffin** seconded the motion. The motion carried unanimously.

NCIPC Updates

Director's Update

Debra Houry, MD, MPH
Director
National Center for Injury Prevention and Control
Centers for Disease Control and Prevention

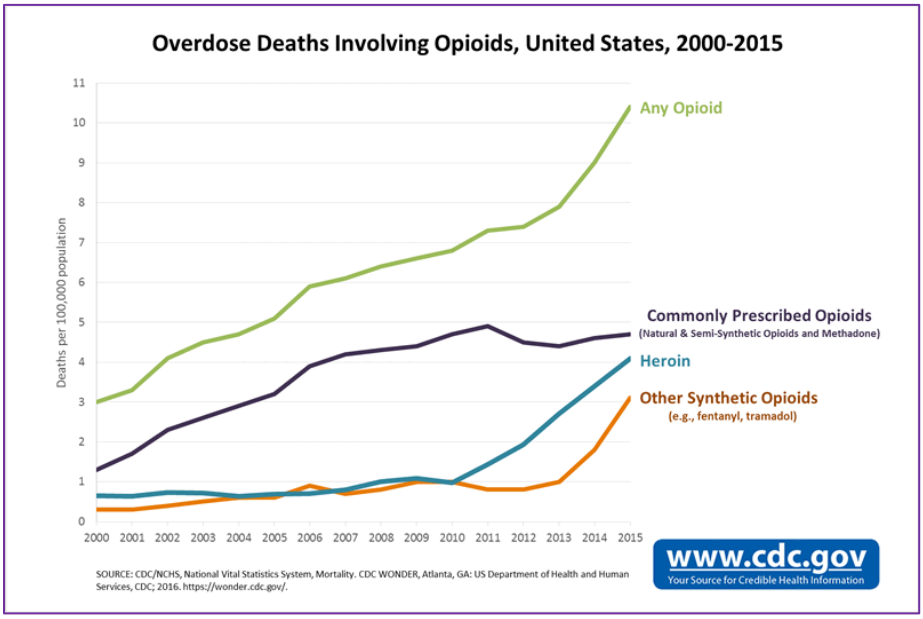
Dr. Debra Houry reiterated what Dr. Porucznik said about everyone participating in the conversation throughout the two-day meeting, pointing out that Dr. Greenspan had worked very hard to make these meetings more interactive. The BSC has been very engaged in in the past in terms of guidelines and other working group (WG) work. She encouraged everyone to help NCIPC think about the issues, and emphasized that the BSC's input is very important.

When the BSC met a year ago, NCIPC's topical priorities were different. However, NCIPC committed that every two to three years they would assess increased burden, growth areas, partner support, and the new CDC Director's interests. Prior to Dr. Fitzgerald coming on board, NCIPC's Senior Leadership Team convened a retreat to review the data and topic areas. They then waited until Dr. Fitzgerald was in place to ensure that any changes in priorities really resonated with her and the administration. NCIPC's previous priority areas had been opioids and motor vehicle (MV) safety, with growth areas in sexual violence (SV), older adult falls, traumatic brain injury (TBI), and child abuse and neglect (CAN). NCIPC is still performing all of that work, but they thought it would be important to increase focus on Opioid Overdose, Suicide, and Adverse Childhood Experiences (ACEs). These are the topics Dr. Houry tries to highlight and grow within the center when she makes Congressional or partner visits. Dr. Fitzgerald is prioritizing opioid prevention and she has an interest in early brain development which is in line with our ACEs work.

One thing that NCIPC likes about these three topics in particular is that they link together. In terms of upstream and downstream protection, all of these are very interconnected. Dr. Houry said they hoped to have more conversation about this later in the day when discussing prevention strategies. There is often a focus on the silo aspects of these topics, but it is important to think in a more multifactorial way.

Opioids was a United States (US) Department of Health and Human Services (HHS) priority with the last administration. It is now one of Dr. Price's three clinical priorities: Opioids, Serious Mental Illness, and Childhood Obesity. NCIPC has topics that intersect with two of the HHS Secretary's priorities, which is significant. Dr. Fitzgerald is still finalizing her priorities. She indicated that during the first 90 days, she plans to do a lot of listening and information gathering before releasing priorities in the fall. She has already said that opioids would be one of her top priorities, as well as areas such as early brain development and how it relates to ACEs. The good news is that NCIPC already has two of the CDC-wide priorities, as well as leadership and administrative support for the work the center is doing.

The opioid priority has not changed, given the number of deaths that continue to be reported as depicted in the following graphic:



NCIPC knows that it is important to remain engaged in opioid overdose, but what has changed is an effort to expand this focus area to work more with public safety, increase surveillance data, and expand state health department programs with 45 states and the District of Columbia (DC) funded. This program was just stood up in Fiscal Year (FY) 2016, which reflects remarkable progress and growth in just two years to be able to fund this many states to perform innovative work in surveillance. NCIPC's surveillance work increased from 12 to 33 states from FY 2016 to FY 2017. Results are slowly coming in, but some of the programs did not receive their funds until August 2017, so outcomes are not yet expected from them. NCIPC is doing everything possible to get everyone engaged real-time as much as possible.

In addition, efforts are underway to coordinate opioids across the agency. Many centers have work that touches opioids. For example, the National Center on Birth Defects and Developmental Disabilities (NCBDDD) is working on neonatal abstinence syndrome (NAS). National Center for HIV/AIDS, Viral Hepatitis, STD, and TB Prevention (NCHHSTP) is working on hepatitis. The National Institute for Occupational Safety and Health (NIOSH) is working on occupational exposures. The National Center for Health Statistics (NCHS) speaks with NCIPC staff on a regular basis about the data. All of the centers have been engaged in this effort, but it is important to ensure that there is a unified approach and coordinated methods pertaining to opioids. In May 2017, NCIPC took on the role of coordinating the agency response to opioids and has a small unit to coordinate across the agency. The unit conducted 17 interviews among centers, institutes, and offices (CIOs) and developed a draft framework, which they plan to have Dr. Fitzgerald weigh in on before moving forward. The hope is that this framework can be used to highlight what CDC is doing in opioids, and make it broad-ranging enough that the different CIOs all fit into different aspects of it. Two of the areas include surveillance and empowering and educating consumers to help with messaging and framing.

NCIPC's second priority and a major cause of death (COD) in the US is suicide. NCIPC has chosen to focus on suicide because the problem is growing worse (up 28% in the US since 2000), and the issue is tied to opioids and ACEs. There was 1 suicide every 12 minutes (n=44,193 deaths) in the US in 2015. In the spring of 2017, the Division of Violence Prevention (DVP) released a suicide technical package titled *Preventing Suicide: A Technical Package of Policies, Programs, and Practice* that presents a series of strategies and effective policies to prevent suicide at the community and state levels. Dr. Houry noted that this was one of the most impactful reports she has read, and she shared it with Dr. Frieden before he left. Dr. Fitzgerald has now looked at it as well. This package shows that suicide is preventable. Many people often think of suicide as a mental health issue, that it is not preventable, or that it only impacts an individual. This publication demonstrates what can be done at the population level.

NCIPC's third priority is ACEs. While CAN have been a center priority in the past, the focus is being expanded to capture a range of ACEs. This does include CAN, but it is also much broader in that it includes family challenges (e.g., mental illness, incarcerated relative, mother treated violently, witnessing substance abuse, and divorce). With a greater focus on primary prevention through CDC's work, it will be possible to build on the work being done to focus on preventing CAN from occurring in the first place and helping children who have had ACEs to thrive. This also is of interest to Dr. Fitzgerald, particularly as it ties into early brain development. DVP is working on training for providers focused on ACEs to help them identify and respond, for which Dr. Fitzgerald is doing the promotional video.

In conclusion, Dr. Houry emphasized that the three areas of opioid overdose, suicide, and ACEs are interrelated. Children whose parents are dealing with substance abuse or overdose are experiencing ACEs, as are children whose parents attempt or complete suicide. ACEs are also a risk factor in substance abuse and suicide. Suicide and opioids are closely linked. Often with death certificate data, it is not even clear what is a suicide or unintentional death. Thus, data are being collected to understand both intentional and unintentional and overdoses, their risk factors, and how to prevent them.

Taking a step back to look at the bigger picture, NCIPC has been playing an active role in HHS work, even with respect to examining its priorities under Dr. Price. There is a process called *Reimagine HHS*. Dr. Houry was one of two people who represented CDC on the Public Health Subcommittee for two weeks in Washington, DC for *Reimagine HHS*. This involved literally being at the table for two weeks from 8:30 AM to 6:00 PM every day, focusing on how to think

innovatively "outside the box" to move things forward. It was very helpful to have CDC's perspective represented. A total of nine people from CDC were represented across the various subcommittees. When she returned, she thought there was a lot they could do within NCIPC around this initiative such as more real-time data linking to different data sources than done previously. Public health thinks a lot about the population level, but *Reimagine HHS* is very focused on consumers. Even though public health is focused on population level change based on evidence, within that individuals would have the freedom to choose and calculate risks and benefits.

A new strategic plan also is being developed for the next four to five years at HHS. Dr. Houry represented CDC on the Injury and Violence Subcommittee, and many other CDC staff participated in other subcommittees focused on mental health, substance abuse, research, and childhood development. This offered a lot of opportunity to have input in the agency plan.'

In targeting NCIPC's work in the three focus areas, it is important not to lose sight of populations at greatest risk for each. Thus, they are trying to focus through a variety of mechanisms. For rural health, they have been working with the Health Resources and Services Administration (HRSA) Federal Office of Rural Health Policy (FORHP). Dr. Houry has met with their leadership multiple times over the past year, and HRSA FORHP representatives presented to CDC during the summer to the present as well. They had great discussions regarding how they could support each other's work. A CDC-wide Workgroup on Rural Health was established on which there is an NICPC participant. In addition, three *Morbidity and Mortality Weekly Reports* (*MMWR*) will be published. The first on *MV fatalities, Rural and Urban Differences in Passenger-Vehicle–Occupant Deaths and Seat Belt Use Among Adults — United States, 2014*, was published September 22, 2017. The next one on suicide was due to be published the week after the BSC meeting, and the one on opioids was due to be published later in October.

Dr. Houry had the opportunity in August to travel to Montana to visit the Rocky Mountain Tribal Leadership Council (RMTLC), as well as the Crow and Northern Cheyenne Reservations and experience first-hand a lot of issues they experience with regard to injury and violence. Last year, NCIPC also established a Tribal WG in order to focus on making sure that the center's programs and grants are inclusive of tribal populations and find ways to increase technical assistance (TA) and work with tribal populations.

Policy Update

Sara Patterson, MA
Associate Director for Policy
National Center for Injury Prevention and Control
Centers for Disease Control and Prevention

Ms. Patterson reported that NCIPC has more than doubled in its appropriation over the past 5 years from approximately $139 million to about $286 million, which has been a huge and amazing feat. They went from being the "little center that could" and always being referred to as one of the smallest centers or the smallest center to a good medium size center. A lot of that growth has been attributed to the opioid activities, but there also have been large increases in the National Violent Death Reporting System (NVDRS) in addition to an increase for evaluation of SV prevention activities in 2016. These are very important priority areas, and the exciting thing about that is that NCIPC is experiencing growth in both unintentional injury and violence prevention.

NCIPC received a total of $286 million for FY 2017, which included an increase of $50 million over 2016. That was all for opioid-related activities. NCIPC has two lines in its opioid prevention funding of $125 million. One is for opioid prevention state-based program funding of $42 million, which funds NCIPC's Data-Driven Prevention Initiative (DDPI), Prevention for States (PfS) program, guideline implementation activities, and a variety of other activities. They also have a line for illicit opioid surveillance of $8 million, which funds the Enhanced State Surveillance program now in 32 states plus DC that Dr. Houry mentioned. All other NCIPC received level funding in FY16. While sometimes that makes them sad, in a climate of shrinking budgets, they are really excited to have level funding.

The FY 2018 President's Budget came out in May 2017. It was somewhat confusing because it was $216 million, but it did not reflect the increase received in 2017. Those occurred about two weeks apart from each other, so the budget was built on the Continuing Resolution (CR) level, which is basically the 2016 budget. There were some reductions in funding in the President's Budget in the elimination of NCIPC's Injury Control Research Centers (ICRCs) of $9 million, elimination of the Elderly Falls line of $2 million, and a requested reduction in the Injury Prevention Activities line of $9 million. Overall, CDC's budget request was reduced by about $18 million in the President's Budget.

While NCIPC's reduction was not quite that high, pretty much every program in the agency experienced some level of cuts. For example, every program that had "Research Centers" in the name at CDC was eliminated. In terms of the outlook, the 2018 budget will soon begin. They are excited because rather than a shutdown, there is a CR through December 8, 2017. The House and Senate have marked up NCIPC's bill. The House mark is $286 million, which is level with 2017. The Senate mark is $291 million, which includes an increase for rape prevention and education activities of $5 million. All other lines are level. Thus far, the House and Senate have not accepted anything that was proposed in the President's Budget. They will have to go to conference to iron out their differences, but this is potentially a good outlook for NCIPC in the 2017 appropriation.

NCIPC has done a lot of work to educate Congress. However, there was not a lot of activity occurring on the Hill prior to the election because everyone returned to their districts to campaign and after the election there was a period of transition. NCIPC has engaged in about 21 briefings since September 2016 when the BSC last met. This has been a season of firsts. Dr. Houry testified on fentanyl during the first hearing in which CDC participated after the inauguration. Dr. Fitzgerald will be engaging in her first hearing on opioids for the Senate Health Committee the week after this BSC meeting. They are learning a lot about the new environment and how to engage Congress, but interests have pretty much remained the same. They are doing a lot of briefings and meetings on opioids, and have been doing some work to provide TA on bills pertaining to mental health. NCIPC is slated to participate in a Congressional briefing hosted by the Injury and Violence Prevention Network (IVPN) on October 24, 2017 for which the broader topic is on substance use, and NCIPC will focus on the rural health series. The center is very excited about these opportunities. Dr. Grant Baldwin did a Veterans Affairs Roundtable on opioids and veterans, which was a really good discussion about how to support veterans in the opioid crisis. NCIPC has had a lot of other opportunities to engage in other sectors, including defense and veterans in this issue.

In terms of interfacing with other sectors, NCIPC has been doing a lot of work on partnerships this past year. This has been a focus of Ms. Patterson's office and the center for quite a while now. They now have a federal partnership plan and have done a lot of federal partner engagement. They have been engaging with various federal colleagues on substantive activities and opportunities to collaborate on releases and aligning Funding Opportunity Announcements (FOAs). The HRSA visit and work on rural health represented the first time CDC participated in the large funders meeting they have on rural health issues with foundations. This was a great opportunity to talk to a new audience. NCIPC has been doing a lot of work with its traditional public health partners such as the Association of State and Territorial Health Officials (ASTHO) and the National Conference on State Legislatures (NCSL). NCIPC views this as a major focus of its work. Especially with the technical packages and so many of the center's strategies being state policy-focused, it is important to identify state-based partners who are decision-makers and have some ability to influence and be informed by the evidence NCIPC provides them. With NCIPC's NCSL cooperative agreement that sits in Ms. Patterson's office, they fund state teams to assemble to do some planning and engagement around injury and violence prevention topics. They are really excited this year to be supporting the first ever Fellows Program where folks in states can assemble for a year's worth of education and more intensive engagement to become champions around an issue in injury and violence prevention. While this is something that NCSL has done previously, it is a new effort for NCIPC. In its work with the Center for Medicare and Medicaid Services (CMS), NCIPC provided assistance to the CMS Innovation Center to incorporate some ACEs work into some models they are using. This is an area in which NCIPC hopes to see more growth. They also have worked with CMS on clinical quality measures for opioids and a variety of other issues.

In terms of non-traditional partners, NCIPC has tried to focus more attention on business and foundation partners. The CDC Foundation is CDC's non-governmental funding arm. If a private foundation or company wants to support CDC to do something, they can go through the foundation. Ms. Patterson's office serves as a liaison to that group. This year, they worked together with the CDC Foundation to develop a Business Pulse focused on opioids. Dr. Houry spoke on a business roundtable webinar. The Business Pulse included a Q & A with Kroger leadership, which was very interesting and was a nice way to show how businesses can be involved in the opioid epidemic. This is a great audience for NCIPC to engage with, especially in terms of policy because businesses can sometimes control their own policies. If it is harder to get legislation passed, there are policies that can be implemented at the organizational level. NCIPC is very excited to be able to inform that and to learn from the business community.

Another partnership effort is NCIPC's work with faith-based and community organizations, which is another area in which NCIPC is trying to link its work with opioids, suicide, and ACEs. Faith-based organizations have such a strong role to play in all of those issues and touch folks in the community who are really affected by it. During the summer, Ms. Patterson engaged in two webinars with Substance Abuse and Mental Health Services Administration (SAMHSA) through the HHS Office of Faith-Based and Community Initiatives (FBCI). They had the highest participation in those two webinars ever. The first was focused on what the problem is, with discussion about the opioid epidemic and the relationship to ACEs and linking all of those issues, stigma, and what faith-based organizations can do. The second webinar focused on how faith-based organizations can get involved and what CDC is doing that they can plug into. SAMHSA had a similar approach on the treatment side. It was a really great series, and NCIPC has had some follow-up conversations with some specific organizations. This is an audience NCIPC is excited to continue engaging further.

Discussion Points

Dr. Porucznik said she was intrigued by the notion of individual choice in public health, given that many of the efforts on which public health is working on are areas where people may not have that much choice.

Dr. Frye requested further information about *Reimagine HHS* in terms of where the evidence lies with regard to opioids for example in terms of upstream, downstream, individual, structural, and whether there is enough evidence to inform that discussion well.

Dr. Houry said one example of this would be with the prescribing guideline for opioids in which the physician and patient have an individual discussion. It is about each individual patient. Even if there is evidence to suggest what the best practices are, the physician would still weigh what the patient in front of them needs. That is why she always says it is about presenting the best evidence and then allowing for some level of choice within that. Some of this will pertain to NCIPC's communication products as well. In terms of *Reimagine HHS*, the first day was comprised of TED Talk speakers who discussed connecting to wearables and patient advocates talking about how they navigate choices and complex systems. Those were some of the major overarching themes. What she thought was helpful was that interspersed between a lot of the TED Talks were presentations of different government innovation projects. When she returned to NCIPC, she asked staff to submit the HHS Innovation. One of the projects submitted pertained to overdose mapping in real-time, which was accepted as a finalist. The goal was to try to find ways to innovate in this space. In public health, the systems level will have the most impact in terms of cost savings and efficiencies. But, allowing for weighing of risks and benefits and realizing that there are individuals with different needs and that one-size-does-not-fit-all with different options is helpful when possible. One way to do that is with the violence technical package. There is not one right intervention for every community, so instead of being proscriptive or paternalistic, they can provide people with the evidence and determine how they can help them in their decision-making process.

Dr. Allegrante expressed his enthusiasm about CDC building and strengthening its ability to partner with other entities. In terms of the intersecting problems and challenges faced with opioid overdose, suicide, and ACEs and combining that with the most strategic partnerships, he wondered to what extent NCIPC had thought through where those strategic partnerships may lie. Are they with professional societies, domestic non-governmental organizations (NGOs), sectors such as workplaces or schools, et cetera.

Ms. Patterson said that in the 10 years she has been at the center, it has evolved and grown considerably. They now have to think more strategically about who they partner with and how. They are giving a lot of thought to what they want to accomplish. For example, they want groups to implement the technical packages for violence prevention activities. Who are the key audiences to do that? One audience is state policy-makers. Governors, State Legislators, and State Health Officers are influential. The folks actually doing the work on the ground will be informing those efforts either through the ICRCs or state programs that NCIPC funds or works with that are not funded. That is one area NCIPC might strategically identify some of the groups that work with those audiences to infuse information and engage at a more in-depth level. It is known that some things resonate more with businesses than others, so NCIPC thinks about what types of messages will be most influential, informative, and does not focus on topics that are non-starters. Her office coordinates partnerships across the center, but tons of partnership work is going on within all of NCIPC's divisions. One example is with the *Guideline for*

Prescribing Opioids for Chronic Pain for which there is a major focus on working with payers. Ms. Patterson sits on monthly calls with Aetna and folks in the divisions are talking with other payers frequently. In cases like that, they tend to identify a payer that is already doing something in this space so they can engage further. The way the conversation started with Aetna was that they had sent out a letter to super prescribers with NCIPC's guideline and talked to them about changing behavior. Now NCIPC has been talking to them about other things they can do, linking them to other resources when possible. They are going to have the same conversation with Signa. Signa has already observed a reduction in prescribing from some of its initiatives. One of the things they have heard a lot about the guideline is that people need to see better options for non-opioid therapies because people still need their pain treated. NCIPC feels like getting better coverage and access to non-pharmacological therapies is a huge area of importance, which is why the focus on insurers. NCIPC is trying to think strategically about which partners have touchpoints with audiences of interest, and how to get them the information they need to be influential.

Dr. Comstock said she was really excited about and appreciated the idea of new partnerships, but was concerned about the loss of funding to the ICRCs. ICRCs have traditionally been an incredibly fruitful partnership for NCIPC, in many areas of injury and violence—not just opioids. They have produced research that has dramatically improved scientific knowledge, and have served as incubators that have trained the next generation of injury researchers and injury prevention professionals. She requested further information about NCIPC's plans for the ICRCs in terms of whether they are being abandoned or are included in the new policy of partnerships.

Dr. Houry replied that that was in the FY 2018 President's Budget. However, the ICRCs have not been eliminated from the House and Senate mark-ups. They will have to see what the budget looks like. She came to NCIPC from an ICRC, so she very much understands their value. During her Congressional briefings, she has highlighted a lot of the great work that is being done in the ICRCs. Whether it is because of a Senator's state or due to a specific topic, in any conversation she can discuss four or five examples or topics, so she tries to have a lot of those handy. Dr. Qualter's division worked very hard on an impact report regarding the ICRCs that had a lot of great examples of what the ICRCs have done. They also talk about how the ICRCs focus on training and outreach in building the next generation.

Ms. Patterson added that there has been a more concerted effort to talk about the impact the ICRCs have in the topic areas being discussed. About two weeks ago, she attended the Safe States Alliance meeting where she participated in a panel on suicide prevention. One thing she highlighted was the partnership between the Rochester ICRC and the Colorado Health Department on a comprehensive suicide prevention initiative. She feels like they have to make the case to decision-makers, whether that is within the Administration or Congress, to help folks understand that the ICRCs are really translating what is known into action and that it will not be possible to implement evidence-based interventions if they do not know what those are. Whenever they talk about opioids, suicide, or other topics on the Hill when they have an opportunity to educate members about what NCIPC is doing, they try to bring in the ICRC examples so they understand that relationship. She thinks that helps make the ICRCs more concrete and less esoteric.

Dr. Greenspan added that at this point, they are forecasting ICRCs and competitive renewals for FY 2019, so they are hopeful. They also are building a research database in which all intramural and extramural research will be combined. They are unpacking all of the research activities the ICRCs engaged in so that when Dr. Houry and others go talk on the Hill, they will be able to point to the specific projects and contributions of the ICRCs.

Dr. Hedlund stressed that it was not too early to start thinking about the 2019 budget. Given the pressures in Congress to reduce government spending overall, he asked whether NCIPC is thinking about an overall strategy to maintain/increase its importance in that budget.

Ms. Patterson responded that the 2019 process is difficult to talk about in this setting, because it is all internal until the President's Budget comes out. However, they have been engaged in a number of internal activities to understand what the landscape is and inform folks about NCIPC programs. NCIPC's Office of Management and Budget (OMB) examiner left at the beginning of the summer. Their new OMB examiner was in NCIPC for several years, which is great. They did a meet-and-greet with him in the summer, and Dr. Houry met with him earlier in the week. Obviously, there will be a lot of policy decisions that will be above his pay grade and above what NCIPC can control. She thinks the best thing they can do is be prepared for what comes out in the President's Budget and be ready to help people understand the implications of any cuts that might be in that budget so NCIPC's partners can do what they do best, because NCIPC will have to be cautious about how they talk about the President's Budget.

Dr. Houry emphasized that NCIPC has two key areas aligned with the CDC Director and two that are aligned with HHS Secretary. That is certainly not all of NCIPC's areas, but it certainly helps to protect the center and some of its programs. That is why they are also looking at how interconnected these topics are, as well as some of the other topics in the center, and how they align with the Director's priorities as a way to protect NCIPC's programs.

Dr. Green asked whether there are concerted efforts across the priority areas to work with criminal justice in the law enforcement arena, and in prisons and jails as institutions to think about risks on this inside and translation to and continued influence on the outside.

Ms. Patterson indicated that Dr. Houry was scheduled to meet with several folks in the Department of Justice (DOJ) the previous week, but the meeting had to be moved. However, it is to be rescheduled within the next couple of weeks. Ms. Patterson was sitting in a meeting the day before with their colleagues at NCHHSTP, and one of the things NCIPC is thinking about moving into in its opioid space is the issue of continuity of care and identifying populations that need to be tracked, followed, and moved into treatment. One of the biggest populations they discussed are those who are coming out of prisons and how to support them to ensure that they are linked to services for infectious diseases, opioid/substance use issues, et cetera. NCIPC has not done a lot of programmatic work in that area, but it is an area of interest moving forward.

Regarding Dr. Comstock's query about the future of the ICRCs, budget, and funding, **Dr. Allegrante** made a plea for the BSC members to think about the importance of advocacy on behalf of NCIPC. Dr. Houry and her colleagues are doing as much as they can do to represent the needs of the center, and the important work that it is doing, to the leadership within HHS and to Congress. However, he believes that it is incumbent upon the BSC members in their private roles and through their networks to advocate for NCIPC's work. He has talked to Dr. Houry about this. To illustrate, there is a Health Education Advocacy Summit that the Coalition of National Health Education Organizations (CNHEO) will be convening on the Hill in October 2017. He did not think injury was on the agenda, but it could be. He believes that advancing the causes, mission, and purposes of NCIPC is a role for the BSC.

Dr. Gioia agreed with Dr. Allegrante's observations. He requested further information regarding interest around influences on brain development and thinking about the ACEs work, and whether there are any particular areas of interests or specifics on what brain health-related issues might be a focus. In addition to the removal of adverse experiences, he wondered if there was a health promotion side as well.

Dr. Houry indicated that this is still in the works, but they have had a few WG meetings. The focus is on the very young under the ages of 2 to 5. They have inventoried various related centers to assess current programs, how they can leverage them to have more of a focus on early brain development, and hopefully develop some forward-thinking initiatives and priorities. Since they are still in the first 90 days with Dr. Fitzgerald, this has not yet been solidified. They are still in the learning and fact-finding stage. There is very much a health promotion side to this. For NCIPC, this will involve a lot of ACEs, CAN, and head trauma that informs this versus early brain development. Some of it will focus on the safe, stable, nurturing relationship protective factors as well. They are just trying to determine how their work can fit into that.

Dr. Crawford believes that suicide, opioids, and ACEs are very important. At the same time, he thinks about a number of intractable problems that often become normalized and they see it but they do not see it. The rural focus is very important and involves many under-served populations. He asked whether this is a both/and situation, because urban populations are dealing with many aspects of violence every day (gun violence, bullying, et cetera). He was not hearing that in the discussions. He expressed his hope that they were not talking about excluding those things, and that they would be somehow included along with the other important priority areas.

Dr. Houry replied that a lot of NCIPC's work is focused on urban areas. Many of the Youth Violence Prevention Centers (YVPCs) have been focused on urban areas, and NCIPC has done a lot of work with local health departments around youth violence in particular. The center realized that they had a blind spot in terms of rural populations and that they had not been doing as much work in those populations. It was more an add-on, which was similar in tribal populations. They were working some with tribal populations in terms of MV safety, but not as much in other areas.

Extramural Research Update

CAPT Mildred Williams-Johnson, PhD
Director, Extramural Research Program Office
National Center for Injury Prevention and Control
Centers for Disease Control and Prevention

Dr. Williams-Johnson presented an overview of the NCIPC Extramural Research Program Office (ERPO), FY 2017 program results, portfolio overview, and future program plans. She explained that the NCIPC ERPO is the focal point for the development, peer review, and post-award management of extramural research awards for NCIPC, the National Center for Environment Health (NCEH), and the Agency for Toxic Substances and Disease Registry (ATSDR). The ERPOs were established across CDC to standardize processes and procedures for extramural reviews; ensure that the research funded is of high quality and meets the stated research goals; and support the integrity, transparency, and credibility of the agency's extramural processes. The ERPO is housed in NCIPC's Office of the Associate Director for Science and works collaboratively with NCIPC divisions, the Office of Grant Services (OGS), Management Analysis and Services Office (MASO), and CDC administrative offices.

ERPO likes to talk about the work it does as managing extramural research from cradle-to-grave, and works with its division partners to develop notices of FOAs after they have developed and vetted their research funding concepts. FOAs are published with the OGS, and ERPO works with the OGS to evaluate the applications received to determine whether they are eligible to present for funding and responsive to the FOA. ERPO conducts both the primary and secondary peer review with external partners who are scientists with expertise relevant to the research being considered. The NCIPC Director is provided with all of that information to inform decisions about what will be funded, and then ERPO will work with its division partners to execute and administrate those awards to ensure that they achieve the research outcomes for which they were funded.

The following table lists NCIPC's 2017 new extramural research awards:

FY 2017 FOA	Number of Applications Reviewed* / Received#	Number of Applications Awarded / Approved	1st year Funding	Total Estimated Award** (YRS.)
CE17-001 Research Using Linked Data to Understand Motor Vehicle Injury Among Older Adults	8/9	1/2	$400,000	$1,200,000 (3 yrs.)
CE17-002 Development and Evaluation of Sports Concussion Prevention Strategies	24/27	2/3	$1,096,346	$2,200,000 (2 yrs.)
CE17-003 Research Grants for Preventing Violence and Violence Related Injury (R01)	28/33	3/6	$1,050,000	$3,150,000 (3 yrs.)
PHS 2016-02 Omnibus Solicitation of the NIH, CDC, FDA, and ACF for Small Business Innovation Research Grant Applications (Parent SBIR [R43/R44])		1	$822,123	$1,000,000 (2 yrs.)
CE12-001 Injury Control Research Centers Supplemental Awards for translation and policy-related research	7	7	$5,562,630	$11,125,260 (2 yrs.)
			Total 1st year Funding $8,931,099	**Total New Award Funding $18,675,260**

NCIPC research priorities addressed by FY 2017 new extramural research awards include the following:

- ❑ Prescription Drug Overdose
- ❑ Youth Violence
- ❑ Sexual Violence
- ❑ Motor Vehicle Injury
- ❑ Traumatic Brain Injury and Youth Sports Concussion
- ❑ Intimate Partner Violence
- ❑ Cross-Cutting Strategies for Preventing Multiple Forms of Violence

Successful FY 2017 grants and cooperative agreements are more specifically described as follows:

Awardees: Research for Preventing Violence and Violence-Related Injuries

- ***Anti-Bullying Laws and Youth Violence in the United States: A Longitudinal Evaluation of Efficacy and Implementation*** **(Dr. Marizen Ramirez, University of Minnesota)**

  Methodology: Longitudinal and quasi-experimental data will be used to assess the effectiveness of anti-bullying laws in reducing multiple forms of violent behaviors among youth.

  Implications: Results from this research project could help communities find ways to strengthen their comprehensive approaches to prevent bullying and other forms of violence impacting youth.

- ***Evaluating the Prevention Effects of Men of Strength (MOST) Clubs on Sexual Violence and Teen Dating Violence Perpetration*** **(Dr. Marni Kan, Research Triangle Institute)**

  Methodology: The MOST Club is an after-school youth development program for high school males that promotes healthy masculinity and peer leadership within their school community. This sexual violence prevention strategy will be evaluated using a randomized controlled trial with 16 high schools.

  Implications: This research can highlight ways that multiple forms of violence can be effectively prevented through addressing common risk and protective factors.

- ***A Comprehensive Parent-Child Prevention Program for Youth Violence: The YEA/MADRES Program*** **(Dr. Nancy Guerra, University of California, Irvine)**

  Methodology: Researchers will develop, implement, and evaluate an approach that combines the Youth Engaged for Action (YEA) program and Madres a Madres family program. The impact of the YEA/Madres Program on youth violence and dating violence will be examined using a randomized controlled trial in six urban Latino communities with violence rates approximately six times the national average.

  Implications: Findings from this research will help communities develop strategies to prevent multiple forms of violence and highlight ways to deliver prevention strategies using innovative, cost-effective, and culturally-appropriate designs.

Awardee: Research Using Linked Data to Understand Motor Vehicle Injury among Older Adults

- ***A Multi-State Integrated Data Approach to Analyzing Older Occupant Motor Vehicle Crash and Injury Risk Factors*** **(Lawrence Joseph Cook and Timothy J. Kerns, University of Utah)**

  Methodology: Researchers will integrate outcome data with pre-event data and event data from the crash report to create a multi-year, multi-state probabilistically linked database of police crash data, hospital billing data, driver license files, toxicology data, and citation and conviction data.

  Implications: This research will provide a better understanding of risk factors that contribute to the increase in motor vehicle crashes and injury severity for older occupants.

Awardees: Development and Evaluation of Sports Concussion Prevention Strategies

- ***Popular Opinion Leaders as a Sports Concussion Prevention Strategy in Middle Schools*** **(Zachary Y. Kerr and Iohna K. Register-Mihalik, University of North Carolina Chapel Hill)**

  Methodology: Researchers will develop and pilot a new intervention using a Popular Opinion Leader model to prevent concussions in middle school sports.

  Implications: Findings will help researchers determine the impact local concussion prevention programs will have on knowledge, behaviors, and health outcomes in youth sports.

- ***One Team: Changing the Culture of Youth Sport*** **(Emily G. Kroshus and Sara PO Chrisman, Seattle Children's Hospital)**

  Methodology: Researchers will refine the One Team intervention, which uses pre-game safety huddles to bring together coaches, athletes, parents, and referees to affirm (a) values of sportsmanship (i.e., not engaging in dangerous and illegal collisions) and (b) the shared responsibility that no athlete will play while concussed.

  Implications: This intervention aims to shift the culture of safety in youth sport and is appropriate for all youth sport stakeholders, including those in low resource and rural communities.

Awardee: Research on Prescription Opioid Use, Opioid Prescribing, and Associated Heroin Risk

- ***Heroin Use and Overdose Following Changes to Individual-Level Opioid Prescribing*** **(Amy SB Bohnert and Marc Larochelle, University of Michigan)**

  Methodology: Researchers will examine whether patients who are tapered from high dosages of opioids are experiencing heroin-related overdoses in greater numbers than expected, and if so, why this transition to heroin use occurs. Researchers will analyze medical claims records for about 58 million Americans during 2001 to 2015, representing all 50 states.

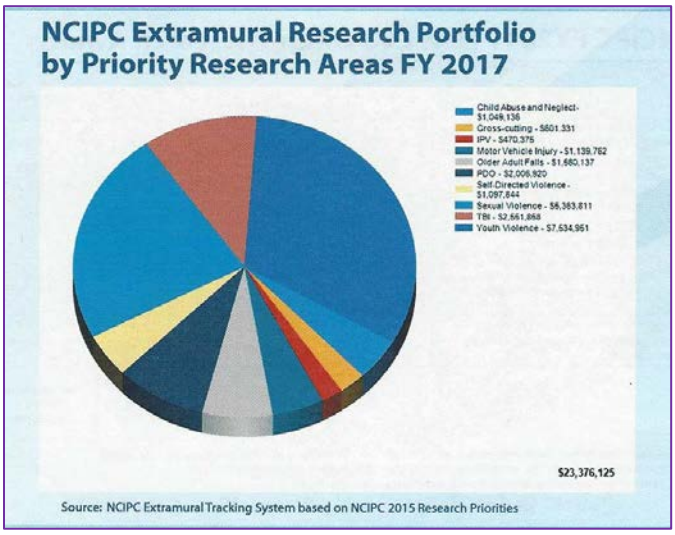
Implications: This study will aid efforts to identify those patients at greatest risk for heroin overdose.

This list is not comprehensive in that it does not include the supplemental awards that were funded to the ICRCs this year given that ERPO will be working with the NCIPC Division of Analysis, Research and Practice Integration (DARPI) to create that information.

Dr. Williams-Johnson said she thought they were more successful this year in that the number of applications reviewed were a higher percentage of the number received than usual. Last year, several applications had to be turned away that were not considered eligible or responsive. This year, there was a much lower percentage of that. She believes this is attributable to a much better collaborative working relationship with ERPO's division partners in developing the FOAs, and revising those FOAs for clarity as the result of a pre-application call for all potential applicants, and then republishing those announcements with the clarified languages and the questions/answers posed during the call.

The total funding for this year for all of the new awards, including the ICRC supplement, is just under $10 million and a total of a little over $20 million over the next 3 to 5 years. As a result of this year's funding activities, a greater proportion of NCIPC's research priorities are being funded. This was a banner year in that NCIPC had additional funds that they were able to allocate to two applications that were approved for funding last year as part of the peer review process, which was a very exciting opportunity and a first for NCIPC. In addition, this was a good year in that NCIPC was able to use some of its funds to expand one of its research programs for evaluation of its Rape Prevention Education (RPE) program. Those funds were used to engage in more targeted effort to bring in rural and tribal communities.

The data in the following pie chart are generated based on what NCIPC's funding looks like across its full research portfolio, and is driven to a great extent by where the appropriations are:



Many of NCIPC's research programs are aligned with how funds come into the center, via the specific line items shown above. To a great extent, what NCIPC is able to fund in extramural research has to do with where the funds lie. While funds for prescription drug overdose may have come in predominantly for program activities, NCIPC has been able to use some of those funds to support research as well.

For FY 2017, NCIPC's research portfolio is slightly under $25 million overall. This takes into consideration the center's extramural grants and cooperative agreements. Dr. Greenspan alluded earlier to the development of a research priorities tracking base. In that particular tracking base, the plan is to incorporate NCIPC's intramural and extramural research portfolios. Hopefully, future iterations of this report will provide a more complete evaluation of what the NCIPC total portfolio looks like for research.

Pointing out that the terminology has changed from FOA to Notices of Funding Opportunities (NOFOs), Dr. Williams-Johnson reported that all of NCIPC's FY 2018 NOFOs have been forecasted and can be found at www.grants.gov where the program areas of interest, number of applications anticipated to be awarded, and duration of the funding can be found. Based on availability of federal funding, the calls for research that NCIPC is expecting to support include the following:

- RFA-CE-18-001 Research Grants for Preventing Violence and Violence-Related Injury (R01)
- RFA-CE-18-002 Evaluation of Policies for the Primary Prevention of Multiple Forms of Violence
- RFA-CE-18-003 Research on Improving Pediatric mTBI Outcomes Through Clinician Training, Decision Supports, and Discharge Instructions
- Forecasting for Addition NOFOs is pending

Discussion Points

Dr. Comstock requested clarification on whether the information Dr. Williams-Johnson provided pertains to traditional grants as well as subcontracts. Having been in this field for quite some time and having benefitted from receiving NCIPC grants for research, she has noticed a trend perhaps of more funds being made available to business entities that are not eligible to apply for traditional research grants. Those funding opportunities seem to exclude the more traditional partners such as public health departments and academic institutions that can apply for the traditional funding. There have been more contracts for groups such as Battelle, SciMetrika, and RTI. She was curious about what has driven this trend and if it is a trend that NCIPC expects to continue to grow.

Dr. Williams-Johnson clarified that this is all extramural research grants and cooperative agreements, while contracts are considered to be intramural research.

Dr. Greenspan reiterated that NCIPC works with division partners to develop the research plans, and the research is driven by what the needs are. If there is a specific research need that NCIPC wants to drive and have input into, they may utilize a contract. If a need is not as specific, it will be published as a cooperative agreement for a grant. It depends largely upon the question being asked and the best mechanism to answer that. There are ways that academics can and have applied for contract mechanisms. There is a separate entity for business grants as well, which is more centrally controlled.

Dr. Haegerich added that each year, NCIPC withholds a specific portion of its budget for each of its budget lines to be allocated toward extramural research. That has remained the same for TBI over the last several years.

Dr. Gioia inquired about the relationship between the CDC Foundation funding and NCIPC's extramural research portfolio funding, and whether CDC actually recruits an external funder for the foundation or could the BSC do so.

Dr. Houry explained that the CDC Foundation funding is very separate, and is considered not to be part of CDC. Oftentimes, NCIPC can propose ideas or projects and/or funders through the CDC Foundation. The CDC Foundation works with many CDC centers, so it is a matter of making sure that NCIPC submits the right topics or projects that resonate with the CDC Foundation and there has to be someone willing to fund it. NCIPC has proposed a lot of great ideas and projects they would love to see, but they have not had that type of matchmaker or funder come to the table. NCIPC views this as a way to augment its efforts, particularly based upon on its appropriation lines. If there is something that does not fit quite as neatly or is cross-cutting, this is a great way to utilize the foundation. While NCIPC is having more successes, it is a relatively new foundation and the center has not had the amount of funding come out of it that they would like to. In terms of whether CDC or the BSC could recruit external funders, there is a firewall between CDC and the CDC Foundation. NCIPC or BSC might suggest funders, but the foundation would receive any such funding and allocate it accordingly. This is another role for the BSC if they have interesting topics or connections with funders or other foundations that might be interested in investing in them, perhaps that could be submitted to the foundation. Perhaps the CDC Foundation could present at a future BSC meeting.

Dr. Coffin noted that while $25 million is great, hundreds of millions would be a lot better. Some of the NCIPC research topics seem to have some overlap with some of the institutes at the National Institutes of Health (NIH), so he could see people seeking funds from those places. However, other topics do not seem to have much of an overlap. He wondered what other agencies fund this type of work with which NCIPC already partners or could partner in terms of expanding the research portfolio.

Dr. Williams-Johnson indicated that NCIPC has partnered with the National Institute on Drug Abuse (NIDA) and is engaged in active dialogue with the National Institute of Child Health and Human Development (NICHD) regarding opportunities for collaboration on FOAs. Their relationship is not as well-established with some of the other institutes. In some cases, when Small Business Innovation Research (SBIR) is funded, they work collaboratively to co-fund across centers. To her knowledge in recent years, NIDA has been the only NIH institute with whom NCIPC has co-funded or received funds.

Dr. Frye noted that the FOAs in 2016 for evaluation of RPEs developed either homegrown or off-the-shelf programming. She wondered why they did not show up in 2017, and whether the new money in the budget that hopefully will eventually materialize would go to a similar FOA to evaluate programs developed from RPEs. She noted that the RPE evaluation FOA was very complex with a lot of characteristics an applicant would have to meet, and a number of organizations for collaborations were excluded because of that. If there are funds for this again, she suggested acquiring feedback from those who attended the first Q & A to understand why certain people did not apply because of the structure of the application process. Building on Dr. Coffin's point, the amount granted through the largest of the CDC funds is less than the upper limit of an NIH one-year budget. As someone who builds budgets in extremely high cost-of-living and high-income areas, she has found it almost impossible to apply for New York City for just three years at those levels to conduct the kind of rigorous quasi-experimental, experimental, or randomized controlled trial (RCT) studies in a dense 8.5 million population city. She asked if any consideration has been given to how that limits applications from high cost-of-living areas

like New York and San Francisco, and whether there are any plans for, or discussion about, raising the amounts, or if doing so would restrict them to just a handful of awards every year.

Dr. Williams-Johnson clarified that she included it as new awards as of September 2016, but reflected the entirety of the portfolio in the pie chart. While they may not be called out specifically, they are represented in the total dollars. They certainly will take under advisement Dr. Frye's suggestion to query the former RPE applicants/potential applicants to hear their questions and concerns. In terms of high cost-of-living areas, consideration is giving to all aspects of what the applicant pool is dealing with and tries to make the playing field level so that whatever application amount is estimated, it is a matter of what an applicant is proposing to do. NCIPC does not have control of saying what an applicant's program plan and associated costs would be. Instead, they are looking for the best possible science that could be done in a particular environment. Sometimes, it is a matter of what is a strong program that is not very ambitious to be accomplished. That is left very much up to the applicant, such that NCIPC provides the resources that are fair across the board for every potential jurisdiction and environment.

Dr. Houry added that potentially, the new money could go to a similar FOA to evaluate RPEs. It was in the House mark-up but not the Senate mark-up, so it is unclear what an appropriation will look like. Potentially, this will depend upon how the appropriation is written and that is something that could go into it.

Dr. Hedlund noted that there is an obvious collaboration on MV injuries with National Highway Traffic Safety Administration (NHTSA), and asked how well NCIPC coordinates with NHTSA in framing NCIPC's research questions with NHTSA's research.

Dr. Austin clarified that as far as grant opportunities, NHTSA does not have funding statutorily for extramural grants.

Dr. Haegerich added that they do engage in quarterly conferences calls with NHTSA during which they discuss NCIPC's intramural and extramural work, and try to identify what is at the forefront in terms of gaps and key questions that need to be asked.

Dr. Greenspan added that NCIPC and NHTSA have a memorandum of understanding (MOU). In the past, NCIPC has collaborated on some contract work with NHTSA.

Dr. Austin indicated that he is involved in some of the quarterly calls and that NHTSA does coordinate and discuss research with NCIPC to ensure that there is not overlap and look for areas for potential collaboration.

Dr. Porucznik pointed out that part of the rationale for including *ex officio* members from other agencies on the BSC is to help bring their agencies' perspectives to NCIPC and take NCIPC's perspective back to their agencies. While this may not be helpful for allocating funding, it is beneficial for idea transmission.

Dr. Green noticed that there was a contrast in the terminology used in the earlier presentations versus the extramural research awards to describe the overdose work, in that the extramural research focus on and are naming "prescription overdose" as opposed to "opioid overdose." She asked whether there is a movement in future NOFOs and awards to more broadly articulate opioid overdose as opposed to focusing solely on prescription drug overdose. In addition, she noted that the Bureau of Justice Assistance (BJA), through the Harold Rogers Prescription Drug

Monitoring Programs (PDMPs), has expanded funding and evaluation work greatly in that area with PDMP state and researcher collaborations with an extramural portfolio in that area. She wondered if that was a place where there may be some synergy, especially for continuing to expand PDMP work, use and utilization, and evaluation and the larger environment to expand and extend the work that could be done more collaboratively.

Dr. Williams-Johnson indicated that as the program evolves, the terminology is adjusted. The terminology used reflected the field when these were first published, and the applicants/awards responded to that language. In terms of the question regarding PDMPs, Dr. Williams-Johnson noted that much of the collaboration with agency partners occurs at the division level.

Dr. Houry indicated that the meeting Ms. Patterson mentioned earlier that was postponed from the previous week was due to focus on potential collaborative efforts with BJA.

Dr. Comstock said she has always been amazingly impressed with NCIPC's ability to do more with very little. She wondered whether, as they are starting to build catalogues of their accomplishments and consider future NOFOs, there are any plans to take a lead from what NIH has done with its funding for brain injury and require anybody who receives funding to create a dataset that becomes available through NCIPC for other researchers to further utilize it.

Dr. Greenspan replied that making data public is now a federal mandate. She participates in a CDC-wide WG that is in the process of developing the protocols and procedures for doing that. These are anticipated to be completed in the next year and CDC will start making data more externally available in accordance with federal guidelines.

National Intimate and Sexual Violence Workgroup (NISVS)

John Allegrante, PhD
Chair, NCIPC BSC NISVS Workgroup
Deputy Provost, Teachers College, Columbia University

Dr. Allegrante reviewed the work of the National Intimate Partner and Sexual Violence Survey (NISVS) Methodology WG that has convened during the year. He briefly reviewed the purpose, importance, and features of NISVS; the background and charge to the WG; and the recommendations and actions that have come out of these meetings. The purpose of NISVS is to provide national and state-level data for men and women on the following:

- Prevalence and characteristics of sexual violence, stalking, and intimate partner violence
- Who is most likely to experience these forms of violence
- Characteristics of perpetrators (e.g., sex, type/how known to victim)
- Direct impacts (e.g., injury, safety, work loss, need for services)
- Health consequences (e.g., depression, PTSD, chronic disease, activity limitations, et cetera)

NISVS is an important source of state-level data and is used in numerous ways, including by the grantees in CDC's RPE program that operates in all 50 states, DC, and 5 territories and efforts to support violence prevention efforts through CDC's Domestic Violence Prevention Enhancement and Leadership Through Alliances (DELTA) program. These data assist states in documenting the health burdens they face, guiding development and implementation of prevention strategies, and understating the needs of those affected.

There are several key features of NISVS. First, compared to an in-person interview, using a telephone interview provides social distance. This is important because it minimizes the possibility of the perpetrator who might be home becoming aware that the interview is occurring. Second, NISVS utilizes highly trained interviewers who ask a series of general health-related questions at the outset of the survey to establish rapport and establish a health context for the survey. The survey also assesses a range of violent experiences. This includes detailed, behavior-specific questions on components of SV and intimate partner violence (IPV) that previous population-based national surveys have not measured. Examples include information on types of SV other than rape, coercive control, and control of reproductive or sexual health. Finally, NISVS employs a number of measures to ensure respondent safety. These include:

- A graduated informed consent procedure that is used to maximize respondent safety, build rapport, and provide participants the opportunity to make an informed decision about whether participation in the survey would be in their best interest.

- Interviewers establishing a safety plan so that a respondent knows what to do if they need to discontinue the interview for safety reasons.

- Interviewers following established distress protocols, including frequent check-ins with the participant during the interview to assess their emotional state and determine whether the interview should proceed.

The context for large-scale data collection and survey methodology is constantly evolving. Because CDC wants to ensure that NISVS makes full use of the best practices for collecting accurate and timely data on these topics, the NISVS Methodology WG was formed at the end of 2016 to undertake a review of NISVS that would provide guidance on methodological enhancements. As part of the OMB renewal process, CDC agreed to convene a panel of highly specialized experts in survey methodology whose insights were sought to ensure that the NISVS remains state-of-the-art and benefits from the most current advancements in survey methods. This input is part of the ongoing improvement process for the NISVS system as CDC seeks to provide high quality data to inform violence prevention efforts. The experts who comprised the NISVS Methodology WG are shown here:

John P. Allegrante, PhD (Chair, Working Group) Professor, Teachers College and the Mailman School of Public Health Columbia University	**Dean G. Kilpatrick, PhD** Distinguished University Professor of Psychology and Director, National Crime Victims Research and Treatment Center Medical University of South Carolina
Paul P. Biemer, PhD Distinguished Fellow, Statistics RTI International and UNC Chapel Hill	**Nora Cate Schaeffer, PhD** Sewell Bascom Professor of Sociology Faculty Director, University of Wisconsin Survey Center
Sarah Cook, PhD Associate Dean, Honors College Professor, Department of Psychology Georgia State University	**Bruce D. Spencer, PhD** Professor, Department of Statistics Institute for Policy Research Northwestern University

Dr. Allegrante noted that with the exception of himself, all of these individuals are among those in the vanguard of survey research methodology and the study of IPV and SV. In addition, the NISVIS scientific leadership and staff at CDC/NCIPC (Tom Simon, Alex Crosby, Sharon Smith, Marcie-jo Kresnow, Jieru Chen, Xinjian Zhang); federal partner colleagues from the Bureau of Justice Statistics (BJS) (Allen Beck, Lynn Langton); and a representative from OMB (Margo Schwab) participated.

The charge to the WG was to address several topics in an effort to generate guidance from experts on improving NISVS methods. These included the sampling frame, increasing response rate, reducing non-response bias and other sources of error, methodological issues in improving administration of the survey, and enhancing opportunities for collaboration across federal surveys.

The WG met four times during 2017, three of which were via webinar meetings of approximately 1 to 1.5 hours, and one of which was in-person for 1.5 days in Atlanta, Georgia. The WG provided specific recommendations for the current NISVS contract and described issues to consider for how to improve the system moving forward. The current NISVS contract includes a final 12-month period of data collection and will end in September 2019. Dr. Allegrante reviewed each of the WG's recommendations and NCIPC's actions.

With regard to the issue of single versus dual frame, the WG recommended that NCIPC continue using a dual frame for the data collection beginning in March 2018, but continue to reassess the proportion of the cell phone frame. While the CDC scientific staff considered the single frame option of cell-phone only, they have decided to continue to use the dual frame at the recommendation of the WG. Although there is an increase in cell-phone only households, there is concern that they could miss respondents if they switch to an all cell phone frame at this time.

Regarding caller identification (ID) and the use of text exchanges, the WG recommended that NCIPC: 1) consider a 2-arm or 3-arm experiment in phase 2 of data collection starting in March 2018; 2) consider adding a question regarding what respondents see on display/caller ID, 3) consider a text exchange between interviewer and respondent regarding context of survey, and 4) consider a text message as an advance letter. The contractor is supportive of conducting experiments, but shared that there are legal restrictions with sending an advance mailing in the form of a text message (potential cost incurred by recipient). NCIPC will conduct experiments comparing 1-800 and non-1-800 numbers and the descriptor that appears on caller ID displays.

In terms of comparison with other surveys, the WG recommended identifying data sources that include questions that are similar to those asked in NISVS and reviewing relevant findings from other systems. NCIPC identified data sources with survey questions that can be used as benchmarks of comparable items from the Behavioral Risk Factor Surveillance System (BRFSS), National Health Interview Survey (NHIS), and National Survey of Family Growth (NSFG).

With respect to cell phone sharing, input from the WG was mixed regarding whether to add a question about cell phone sharing. NCIPC staff consulted with staff from BRFSS who stated that, based on data showing that cell phone sharing has decreased over time, they have removed this question from the survey. NISVS also will continue to treat the cell phone as a personal device.

With regard to reaching late responders, the WG recommended adding an experimental Phase 3 to the NISVS call-back protocol for non-respondents, whereby additional efforts are made for a subset of non-respondents (e.g., higher incentive level) or to understand reasons for not participating. NCIPC is exploring the Phase 3 option with the contractor (feasibility, cost, time). They have data from previous NISVS years that show reasons for non-participation. The most common reason was lack of interest and feeling too busy.

In terms of non-response bias, the WG recommended that NCIPC consider altering the introductory script to add a statement explaining CDC's mission in order to familiarize the audience with CDC. NCIPC staff will revise the introductory language that recipients hear early in the call. The purpose of the revision is to provide additional information to call recipients who may not be familiar with the CDC and its mission. The revision will include a brief description of the CDC and its activities.

Also regarding non-response bias, the WG recommended that NCIPC consider strategies for minimizing total survey error (TSE) and understanding its relationship to non-response bias. NCIPC staff are working in-house and with the contractor on how best to assess TSE and to understand and describe each source of error. They will look at the various components of non-sampling error and identify those sources that have been addressed, and those that still need work.

The WG also recommended targeting low-responding groups to address non-response bias, with the purpose of increasing participation and balancing the sample. This requires having relevant information in advance. NCIPC is working with the contractor to determine the kinds of vendor data that are available (e.g., zip codes for phone numbers), and to understand the characteristics of non-responders, such as the similarities and differences between respondents and non-respondents. The contractor has indicated that the quality of this information has improved over time. This information could be used to adapt the methods to increase recruitment of those who are most difficult to reach (e.g., through higher incentives, using more experienced interviewers, et cetera).

With respect to the effectiveness and receipt of an advance letter, the WG recommended experimenting with pre-incentives to increase likelihood of opening and reading the advance letter (e.g., insert incentive in envelope); using official stationery for advance letter mailings (letterhead, envelope); and adding a question about whether the letter was received and read. NCIPC will make changes to the stationery to emphasize that it is a CDC study (e.g., letterhead, envelope); and will include a magnet with a design that shows the CDC logo and the phone number to call to participate. NCIPC staff are also considering an analysis by the contractor to examine the response rate for those who were sent the advance letter.

In terms of data quality, validity of responses, and disclosure, the WG recommended that NCIPC consider adding a question(s) on the survey about the honesty of responses; discomfort disclosing victimization; whether survey content was upsetting; and whether the person felt safe. Previous data from the NISVS pilot on participant reactions can be used to inform issues around discomfort. For the next contract, NCIPC will consider conducting an experiment to further examine comfort and its influence on disclosure of victimization experiences.

The NISVS WG identified a number of issues to consider beyond the current contract, including the following:

- *Multi-mode design to include phone, web, and possibly mail:*
  - How can the survey be modified to make it easier for participants to complete online and to take advantage of the options available online, such as the addition of images, audio, and video? Literacy and comprehension issues will need to be tested. Self-administered options for the phone could further reduce measurement error.
  - What are the best ways to provide appropriate protections (e.g., in situations where the partner is reading email or using tracking software)? The WG discussed some existing examples of this being done successfully that could serve as models. Can a mail or web survey be administered safely in homes where abuse is happening?
  - Will the most at-risk participants be willing to participate online? What are the best ways/amounts to incentivize participants to go to the web to complete the survey?
  - Consideration should be given to ways to shorten the interview to focus on only the information that is most critical for state estimates. Some panelists emphasized the importance of the in-depth questions used in NISVS for enhancing disclosure. Panelists described that estimates can be generated from shorter sets of questions, but they will systematically underestimate the prevalence of victimization.
- *Change from a random-digit-dial (RDD) sample to an address-based sample (ABS):*
  - ABS provides more control of the sample and is a way to establish the location and certain characteristics of the respondents.
  - The response could be tested from sending a letter and asking participants to either call a number or go to a URL to complete a survey. This could help to learn more about the characteristics of the types of respondents who take each approach.
  - The WG discussed the challenges of rostering to randomly select an adult from the household. With ABS, how can you appropriately roster the household to randomly select a participant?
- *Use a split panel design:*
  - One panelist suggested that this could be a split panel where 50% of the sample would be refreshed every year.
  - Another option would be to have the panel complete a core set of questions and conduct state supplements every other year to generate state specific estimates.
  - The WG also discussed the need to understand the potential benefits of incorporating a panel.

- Collaboration with other federal agencies and systems:

  - Panelists discussed how other federal agencies and survey contractors are dealing with similar challenges, and how several are conducting pilot and methodological studies to identify alternatives.

  - Colleagues from BJS shared that the National Crime Victimization Survey (NCVS) is undergoing a redesign, including modifications to the questions and studies of the feasibility of a self-administered mode. DVP and BJS have started planning ongoing briefings to share lessons learned and next steps.

  - CDC's BRFSS completed a methodological review panel and were provided with similar recommendations. DVP has already received the summary minutes of the BRFSS panel and has had a briefing with colleagues from BRFSS. BRFSS is currently conducting some experiments that could be particularly helpful, including a test of ABS.

The next steps are to develop a "quality profile" of the current design and the various sources of sampling error. NCIPC will work with the contractor and current data to develop a quality profile for the current NISVS by reviewing the error sources within the TSE paradigm. This will allow a reflection on what could be improved in the redesign and at what expense. For example, in any redesign effort, NCIPC should look for ways to minimize measurement error, including failure to disclose or inability to comprehend. To learn more about studies that are in the field or pending that could have implications for NISVS, NCIPC will continue consulting with other federal and non-federal partners, including BJS, CDC/BRFSS, National Science Foundation (NSF), Census Bureau, National Center for Health Statistics (NCHS), Energy Information Administration (EIA), and AmeriSpeak at NORC. Review of the literature will be continued to identify methodological advancements. NCIPC will develop the scope of work (SOW) for a design contract to engage experts on specific methodological topics, conduct pilot experiments to inform decisions, and develop a draft protocol that addresses specific weaknesses of the current design. Consideration will be given to using web panels to quickly test some of the issues related to web surveys. For example, web panels could be used to test whether respondents know how to clear their browsers and how well they follow safety instructions. Consideration will be given to pilot studies that ask debriefing questions about disclosure or that include post-interview cognitive testing to understand sources of measurement error or other types of IPV, SV, or stalking experiences not currently assessed in NISVS.

Dr. Allegrante concluded his presentation by inviting any discussion the BSC might wish to have about the WG recommendations and actions he presented. In addition, he posed the following questions for consideration:

- Do you have any other recommendations for potential modifications to the current contract that could enhance participation or reduce non-response bias?

- Are you aware of any other ongoing methodological studies that could inform NISVS or do you have any other ideas for collaboration?

- Do you have other suggestions for the next contract and strategies for maximizing the opportunity of a design contract?

Discussion Points

Dr. Coffin inquired as to how much privacy/personal security plays into non-response. It may be difficult to get feedback on this from non-responders because it is a little difficult to put into words. A lot of people do not answer telephone calls from numbers they do not know, or they might not be willing to return a call to a telephone number they cannot validate on an online search as being from the place it is supposed to be coming from. He asked how that is handled in the survey now and if there might be ways to include the telephone number and a website in an advance letter to reassure potential respondents.

Dr. Allegrante replied that all of these are among the problems the NISVS experiences because of the subject matter.

Dr. Simon added that this was a major part of the WG's discussion. Most of the non-response challenges come from people not answering the telephone. The cooperation rate is very high among those who do answer the telephone and are determined to be eligible. Of those, about 80% go on to complete the interview. That is one of the reason why NCIPC is considering the experiments Dr. Allegrante described, to try to figure out what else the caller ID might say with the limited number of characters available to help facilitate people feeling more comfortable. The advance mailing does include the number, identifies someone they can call with questions, explains the purpose of the survey, et cetera. The challenge is that about 30% of the sample comes from landlines, while the remaining 70% comes from cell phones. Among those with landlines, only about 40% have an address match, so the ability to take advantage of the advance letter is pretty limited.

Dr. Hedlund asked what the response rate and measures of bias are for the NISVS.

Dr. Simon indicated that the response rate historically has been approximately 30%, which is primarily due to people not answering the phone. As noted, once someone is on the line they are doing a pretty good job of getting a high cooperation rate. NCIPC anticipates that response rates are going to go down. They recently had a call with the contractor, RTI, who shared that there are some new apps that are growing in popularity. As a consumer, Dr. Simon understands and appreciate the need for these types of apps, but as a survey proponent, they are very discouraging and disheartening. They allow people to sign up for the app and flag telephone numbers as spam. Once a number is flagged as spam and enough people flag that number, it gets removed for everybody who has that app. RTI is on the forefront of this and is raising it with the American Association for Public Opinion Research (AAPOR), which is a high-profile topic for their discussions. To make matters even worse, it appears as though from the contractor perspective, they do not know that a call did not go through. That number is in the denominator but had no chance of being in the numerator.

In terms of methodology and other potential collaborations, **Dr. Hedegaard** reported that the NCHS is dealing with a lot of these same issues in terms of response rates and how to move from in-person survey, to a telephone survey, to a web-based survey. The Census Bureau is moving in the direction of online surveys. While their topics are not quite as sensitive as those in the NISVS, there remain questions about the methodologies and how to approach this. Another resource NCHS has that may be of benefit to NCIPC is the Questionnaire Design Research Laboratory (QDRL). They also have the Office of Research and Methodology (ORM), which is all about sampling and how to conduct these types of surveys. These same types of questions are coming up for a lot of others. She encouraged NCIPC to reach out to NCHS.

Dr. Simon indicated that they have reached out to NCHS in the past. They went through cognitive testing of the telephone interview, and are anticipating the need to perform a similar type of testing with the web-based version as well.

Dr. Austin reported that the NHTSA has moved almost all of its surveys to ABS. He clarified that when people say "web surveys," that can mean two different things. It can be a web-based frame, which is not what NHTSA is doing as they are doing ABS, but the mode of collection is the web. NHTSA has eliminated its telephone-based survey. The ABS directs people to a website if they do not respond, and they are doing up to five waves. If they do not respond by the third wave, they receive a paper form they can fill out and send in in case they do not have web access. They are using incentives in the envelopes, and are using first class versus bulk mail. By using first class mail, undeliverable letters are returned so they can keep track of what has come back. NHTSA has been conducting a lot of experiments, some of which have been with OMB, testing $1, $2, and $5 incentives. The $2 incentive seems to be better than the $1 incentive, but the $5 incentive results in only a marginal increase. He recognized that for the types of questions NCIPC is asking, they made need an interface rather than just directing someone to a website. If someone's only contact is through the US mail and they are not the only one checking, that could be an issue as well. There are definitely tradeoffs.

Dr. Simon noted that NCIPC is talking about a multimodal design. The WG's recommendation was to consider moving from the RDD to the ABS, and then driving people to the web to complete the survey. Though very limited, there are some examples of data being collected on IPV through the web. It requires very deliberate and special attention to training the respondent on how to erase their tracks on the web. This often requires working with respondents to create a unique email address where they feel comfortable receiving correspondence just for the survey. These are extra hurdles that NCIPC is going to have to overcome, which is part of the reason why they want to do some design work with the next contract to determine whether those hurdles can be overcome and realize the potential benefits of a web-based survey.

Dr. Frye wondered about oversampling for sexual and gender minorities in past surveys and plans for the future, and whether the questions incorporate the full spectrum of sexual and gender identification.

Dr. Simon replied that they have not oversampled in the past. They have been able to release a special report on sexual orientation and IPV and SV. They continue to do that, and there is a paper in the pipeline currently. They have not been able to assess transgender folks in particular. The field has wanted them to focus on this, but the numbers have been very small. If they are going to do this, they are going to have to consider a special supplementary survey or some other strategy to get at that population. In terms of incorporation of the full spectrum of sexual and gender identification, NCIPC is adhering to the latest Sexual Orientation and Gender Identity (SOGI) WG guidelines. However, he said he was not confident in saying that they have the full spectrum represented. It is a limited number of questions, but the core questions recommended by the SOGI guidelines are there.

Dr. Allegrante indicated that the summary report Dr. Simon and the contractor worked on was distributed to the BSC members. He thanked Dr. Simon and his colleagues for the excellent work they have put into responding to the NISVS WG's recommendations already. From what he heard from the comments and the points made during this BSC meeting, his sense is that the WG addressed the right issues. The comments the BSC raised were at the heart of the NISVS deliberations during their day and a half in-person meeting.

Mild TBI Guideline Workgroup

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Dr. Breiding and Ms. Sarmiento updated the BSC on the progress NCIPC has made toward developing clinical a guideline for the identification and management of mTBI, based on the Pediatric mTBI Guideline WG report. Dr. Breiding explained that the goal of the Pediatric mTBI Guideline WG is to improve diagnosis and management of mTBI among children 18 years of age and younger by: 1) conducting a rigorous systemic review of the scientific literature; and 2) creating evidence-based clinical recommendations for healthcare providers in both acute and primary care settings. The WG is comprised of 21 members, 21 ad hoc experts with a range of experience (neurology, athletic training, school nursing, neuropsychologists), and 6 federal representatives. This process began in 2012.

In terms of the methodology, the WG conducted a systematic review and drafted clinical recommendations for health care providers using methods of the American Academy of Neurology (AAN). This process is compliant with the 2010 standards of the Institute of Medicine (IOM) National Academy of Sciences (NAS). The WG answered the following six clinical questions:

1. For children with suspected mTBI, do specific tools, as compared with a reference standard, accurately diagnose mTBI?
2. For children presenting to the Emergency Department (ED) or other acute care setting with mTBI, how often does routine head imaging identify important intracranial injury?
3. For children presenting to the ED or other acute care setting with mTBI, which features identify patients at risk for important intracranial injury.
4. For children with mTBI, what factors identify patients at increased risk for ongoing impairment, more severe symptoms, or delayed recovery (<1 year post-injury)?
5. For children with mTBI, which factors identify patients at increased risk of long-term ($\geq$ 1 year) sequelae?
6. For children with mTBI with ongoing symptoms, which treatments improve mTBI-related outcomes?

The search period for the systematic review ranged from January 1, 1990 through July 31, 2015. Across all 6 clinical questions, more than 37,000 abstracts and almost 2900 full text articles were reviewed. More than 340 articles underwent data extraction, and almost 100 articles were included in the qualitative synthesis. The evidence was rated using a modified Grading of Recommendations Assessment, Development and Evaluation (GRADE) process.

The WG developed 46 evidence-based clinical recommendations for healthcare providers that cover 11 diagnosis recommendations, 12 prognosis recommendations, and 23 management and treatment recommendations. Levels of obligation were assigned that correspond to the strength of the recommendation (Must, Should, May). The WG's report represents the most comprehensive review of pediatric mTBI scientific evidence to date, summarizing 25 years of scientific research. These are the first US evidence-based clinical recommendations for healthcare providers that cover all causes of pediatric TBI and include guidance for primary care, outpatient specialty, inpatient care, and emergency care settings.

In terms of the steps completed since the last BSC meeting, additional edits were made based on public comments received during the last BSC meeting. NCIPC also contacted the *Journal of the American Medical Association* (*JAMA*) *Pediatrics* to speak to them about publishing the systematic review and guidelines, and negotiate an increased word limit. NCIPC produced drafts of the systematic review and guideline based on the WG report, but had to reduce the word count significantly due to the word limit, which was a major task. The number of recommendations was condensed to 19 sets grouped by topic, though they contained the same content. The document has completed the CDC and HHS clearance processes, and Ms. Sarmiento has been developing the dissemination tools. The next steps are to: publish a *Federal Register* notice for public comment for 60 days, submit the guideline and systematic review for external peer review, resubmit for CDC and HHS clearance once the public and peer review comments are incorporated, submit the document for peer-reviewed journal publication, and roll out the dissemination materials upon publication in order to maximize the implementation of the recommendations in practice.
Ms. Sarmiento said that now that they have all of this exciting information that has made it through CDC and HHS approval for public comment, an effort must be made to move forward in getting this information into practice. The goals of the process for doing that are to translate the key findings from the guideline into educational products tailored specifically for the target audiences. This will involve: conducting formative testing on the content and design of the materials; launching the implementation tools in coordination with the CDC guideline; and working with partner organizations to disseminate and integrate the materials and messages into their existing systems and programs. The target audiences include acute and primary care healthcare providers, parents, school professionals, and sports coaches.

The proposed implementation tools for healthcare providers include a screening/assessment tool for the acute and primary care settings, a handout on computed tomography (CT) imaging for providers, online training with a continuing education opportunity, and EHR module (if possible), and At-a-Glances (overview of key recommendations). Tools for parents will include discharge instructions, a symptom-based recovery tips handout, and updates to existingCDC HEADS UP content. Tools for school professionals include a letter to schools to be filled in by healthcare providers, and existing CDC HEADS Up to Schools materials: Return to School handout, classroom-based strategies for teachers, fact sheets for school nurses/teachers/counselors/ parents, signs and symptoms checklist for school nurses, posters and laminated information cards. Tools for sports coaches include existing HEADS UP concussion in sports materials: online trainings, fact sheets for coaches/parents/athletes, mobile

phone apps (concussion and helmet safety app, gaming app for young children), sports-specific prevention messages and posters, videos).

Ms. Sarmiento recognized Drs. Gioia and Timmons for their work and support in this effort, emphasizing the great BSC representation they brought to this process.

Discussion Points

Dr. Gioia asked when the various reviews are expected to be completed so that the journal can then accept the paper.

Dr. Breiding replied that the public comment period should end in about two months and comments from the reviewers should be received about two weeks after that. Those reviews are anticipated to be completed by the end of the year, and hopefully the document can be turned around quickly. The only possible hang-up would be additional CDC or HHS review, depending upon the level of changes. The hope is to submit to the journal in early 2018.

Dr. Vaca said he was quite intrigued about the level of obligation that was integrated into the recommendations, and he requested further information about how that integrated in terms of the various groups being addressed and the level of obligation/liability that exists with the strength of the recommendations (Must, Should, May). For example, if "must" extends to the provider, school principal, coach and those obligations fall short, there is liability in both directions.

Dr. Breiding responded that consideration was given to the feasibility of the recommendations in the various settings.

Ms. Sarmiento added that within the guideline, the recommendations, level of evidence, and grading piece are specific to healthcare providers and implementation in the healthcare setting. The target audiences for the implementation tools are broader because they are relevant for implementation. They wanted to ensure that the implementation tools were congruous whether they were coming from providers or grassroots.

Dr. Gioia added that when the WG was reviewing the recommendations in terms of the nature of the content and the feasibility of the implementation, they also were asked to address whether there would be adverse effects of implementing this on the patient/provider relationship. The WG had a number of considerations to make. The level of obligation is based on how strong the evidence was. He helped to draft the treatment recommendations. One area in which they are woefully and inadequately prepared to make strong recommendations is in the treatment of mTBI. Most of those recommendations are almost a suggestion, but also highlight the research needs. He said that while he did not know the medical/legal relationship to the wording (Must, Should, May), the WG tried to take the implications of these recommendations into account in terms of the provider being able to do so. In terms of the implications of the individual application of these recommendations for a particular clinical context, there were very few "must" recommendations because the evidence base was not sufficiently strong to make that level of a recommendation. There were a lot of "may" and "should" as opposed to "must."

Dr. Breiding emphasized that while everyone is aware that this guideline will have impacts on the school setting, sports teams, and athletic trainers, it is targeted specifically to clinical providers.

Dr. Crawford asked how the WG graded the evidence conceptually. Evidence can be graded from RCTs to best available information. There is a lot of range in there and a lot that could be left out. He wondered whether they also looked at sources such as dissertations or non-published literature. In addition, he wondered about fidelity. Science changes so quickly. Oftentimes, by the time a systematic review is completed and guidelines are published, the science has already moved on. Realistically, he asked how time to implementation is being considered.

Ms. Sarmiento indicated that they did work with a guideline methodologist. The workgroup report describes the methodology in detail. The presentation made to the BSC during the last meeting and the report are available on line. The methodology is NAS-compliant, so it was very strict. They did use a modified GRADE process, which was very tedious. The literature search was intentionally broad, which is why they began with 37,000 abstracts. Those all had to be reviewed at least twice for agreement, which is why the project took so long. Regarding the guideline implementation question, she and Dr. Breiding think about this a lot. The methodologist told them that as soon as guidelines are published, they tend to be outdated. That is not unique to these guidelines. They have spoken with the editor about including a commentary along with the published guideline that will talk about some new emerging research. They also had the opportunity through the process to include what is called "Related Research." This included items that were not in the literature review or captured within those 25 years of the literature search, such as publications that came out after their search timeframe. With the online platform, it is much easier to update things pretty quickly. If there are significant changes, they will have to go through clearance. NCIPC monitors its materials frequently, and these materials will be incorporated into the existing HEADS UP Campaign. They go through that process anyway to continually monitor and update new research and information. The guideline will have a few purposes, one of which is to get out key recommendations. But, they also see it as a springboard for the future. Historically, TBI guidelines have been consensus-based. One purpose of this project was to create a paradigm shift to create a systematic review that did not previously exist. About 90% of the work on the project was the systematic review, and there now is a strong basis for others to use. They will do their best to keep the guidelines as fresh as possible, and there are many ways of doing that.

Dr. Coffin suggested tracking down the authors of relevant sections to ensure that the guideline stays current.

Ms. Sarmiento replied that the lead author, Dr. Angela Lumba-Brown, does the updates for UptoDate®. Having such a large WG, many of them are connected to resources such as this and are all very motivated to help get the information out after so much work. They will have a variety of opportunities through their own networks as well.

Dr. Comstock thanked the WG, recognizing that this is an area where having some evidence-based recommendations has been long overdue and that this was a Herculean undertaking. Given that systematic reviews are rapidly growing in their power, she emphasized that the BCS and NCIPC should be cautious. NCIPC is often in the forefront of cutting-edge information. In emerging fields, reliance on systematic review methodologies developed in the clinical setting tend to overly emphasize study design (RCTs). If they read 37,000 articles and throw out everything that is descriptive epidemiology, case reports, or case study value will be lost. She suggested that perhaps they need to get involved in changing systematic reviews so that they are not so RCT-focused.

Dr. Porucznik indicated that this occurred last year with the opioid guidelines. They certainly included RCTs, but also included a lot of descriptive studies.

Suicide Strategic Plan

Dr. Jim Mercy
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Dr. Mercy reminded everyone that NCIPC is responsible for the two major causes of death that are increasing in the US, opioid overdose and suicide. There is an epidemic of suicide in this country. Over the past 15 years, the crude rate of suicide has increased by a little over 32% in the US. There are over 44,000 deaths from suicide each year. Suicide rates have increased in almost every age group, with the great increases occurring among middle-aged white males and females. There is a great correspondence or overlap of these risk groups with the risk groups for opioid overdose. In general, although this may differ across states, from NCIPC's perspective, suicide has not been given the level of urgency that it deserves for a problem of this magnitude and a problem that is increasing at this rate. CDC is very concerned about this issue and has been releasing reports to highlight the importance of this issue and its various characteristics. NCIPC and NCHS have published a number of reports along these lines, and continue to do so.

Although the epidemic continues, NCIPC has zero budget for suicide. This means that everything done for suicide prevention falls to existing staff. Suicide has been a priority for NCIPC since its inception. It has long been recognized as a form of violence, and is sometimes referred to as "self-directed violence." In part, that is because suicide is viewed by many as a mental health issue. Yet, NCIPC would argue that it is more of a public health problem in that there are many things beyond identifying and treating mental illness that can be done to prevent suicide. Risk factors ranging from connectedness to social integration of people have been understood for a long time as being protective from suicide. Exposure to interpersonal violence is known as an important risk factor, as is exposure to adverse experiences as a child. Engaging in drug abuse is an important risk factor; hence, the overlap between opioid overdose and suicide. The means of suicide is another avenue for trying to prevent suicide. Even among people who are mentally ill, who may be vulnerable to suicide, things may occur in their lives that trigger suicide (loss of a relationship, loss of a job, other types of losses).

DVP was asked to develop a pillars document a few months ago. This is not so much a strategic plan per se, given that NCIPC does not have the budget to do much of what is included in this plan. In large part, NCIPC is not able to carry out in large part all of the things they think they could do to contribute to the prevention of suicide in various ways. With that context, Dr. Mercy called upon Dr. Stone to describe NCIPC's *Suicide Prevention Strategic Plan.*

Dr. Stone presented NCIPC's *Suicide Prevention Strategic Plan*. This plan is operationalized as three suicide prevention pillars, along with their corresponding goals, strategies, and activities. She noted that BSC members were provided with an outline of these pillars, the full document with the details, and an overview of the problem of suicide in their binders. During her presentation, she provided an overview of the pillars and spoke in more depth on each one. She highlighted a few of NCIPC's activities that they are especially excited about, but emphasized that they view all of the work described in the pillars document as critical to supporting the nation's goal of reducing suicide 20% by 2025 and making CDC a leader in a public health approach to suicide prevention, which NCIPC deems as necessary to reaching this goal. CDC has been involved in suicide prevention for 30 years. During this time, they have primarily been known for surveillance activities. However, CDC has many other skills and expertise across the public health approach that they can bring to bear in the field as part of an expanded leadership role.

The first pillar is to describe the problem of suicide with data and understand its contributors, the second pillar is to discover and share what works to prevent suicide, and the third pillar is to work collaboratively for highest suicide prevention impact. Pillar 1 corresponds to the first two steps of the public health approach of defining the problem and understanding its contributors, and has two goals and four strategies. The first goal is to provide high quality, timely data to better understand the problem of suicide and to drive preventive action. This goal has three strategies, which are to enhance the value of existing CDC data sources related to suicide, cultivate new data sources, and disseminate information on suicide and suicide attempt trends. Pillar 1's second goal is to enhance the understanding of suicide etiology. This goal has one strategy, which is to conduct research on modifiable risk and protective factors contributing to suicide or suicide prevention. It is important to keep in mind that while suicide is a leading cause of death across the lifespan that has increased nearly 30% over the 2000s, there is currently no line item for suicide prevention at CDC.

As noted, the first strategy of Pillar 1 is to enhance the value of existing CDC data sources used to describe and track suicide morbidity and mortality. This strategy has three activities, the first of which is to continue improving upon the NVDRS. While NVDRS clearly provides the most complete data available on suicide deaths, including the circumstances surrounding suicide, the system is not yet national. In addition, it is important to maximize the ability to collect new data over time in response to the changing social environment. This could include, for example, collecting data on decedents' social media use and online browsing searches leading up to their suicide. The next activity in the first activity of Pillar 1 is to help the field and CDC's partners build a coordinated network of surveillance systems. For example, colleague J Logan worked to successfully link NVDRS data to the Department of Defense Suicide Event Report (DoDSER) to improve characterization of suicide among military service members. Additional linkages and coordination of complimentary data systems can maximize the understanding of suicide and help in prevention efforts.

The third activity under Strategy 1 is to improve systematic use of the International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM) and External Cause of Injury Codes (E-Codes) related to suicide. One of the hurdles the field of suicidology faces is that E-Codes do not specify suicidal versus non-suicidal intent related to self-harm injuries. To rectify this, there is a need to test and develop sound methodology. It is also important to encourage reporting and quality control policy related to routine coding of injuries. Dr. Stone's colleagues, Alex Crosby and Kristin Holland, are currently working with the National Action Alliance for Suicide Prevention (NAASP) Data and Surveillance Task Force to help make this a reality. The second strategy under Pillar 1/Goal 1 is to cultivate new data sources and develop innovative methods for tracking, monitoring, and preventing suicide and suicide-related outcomes. The first activity relates to implementing syndromic surveillance, and the second activity is to explore the use of social media for surveillance purposes.

Syndromic surveillance, or the ability to systematically collect data on ED visits in near-real time presents a unique solution to a pressing problem in suicide prevention. Currently, ED data collected at the national level is limited in its ability to identify and monitor fluctuations in suicide attempt rates at the state or local levels. However, between 65% and 70% of EDs already submit data, including data on self-harm injuries, to CDCs National Syndromic Surveillance Program (NSSP). The trouble is that these data are not usable for surveillance purposes in their current form. Further development and testing are needed to translate the information from its current form into usable surveillance data. This process will allow CDC to monitor trends in suicide ideation and attempt-related visits over time and to identify fluctuations in rates potentially corresponding to sentinel events.

The second new data source CDC is currently exploring is social media data. Social media (Facebook, Twitter, and Instagram) have all been used to communicate about suicide. In some cases, it is thoughts about suicide, in other cases its actual suicide intent or suicide itself that is shared online. The ability to monitor social media data for surveillance purposes is a largely untapped and unexplored area. CDC is currently funding a contractor to develop a real-time surveillance system to identify and track suicide ideation, self-harm, and related measures and a means of visualizing this data via a data dashboard. This project will focus on Twitter data and will require the development of machine learning algorithms to accurately classify tweets with mentions of suicide-related content as harmful or potentially concerning. This is a complex undertaking as everyday online chatter includes talk of suicide that is used in either joking ways or ways that may not convey any risk. The job of the contractor is to teach the computer to distinguish these different usages and to graphically display them. Ultimately, these data may be used for prevention purposes, for example, by delivering suicide prevention content to people or groups at risk. In addition, these data can be used to monitor and learn about public sentiment related to suicide. For example, attitudes after a celebrity suicide or in conjunction with television shows depicting suicidal acts can be monitored. As with syndromic surveillance, this innovative method potentially provides a new lens from which to understand suicide risk and suicide protection.

The third strategy under Pillar 1/Goal 1 is to disseminate information on suicide and self-harm trends to the public in ways that are user-friendly and have high impact. Here again, CDC refers to data visualization through techniques such as mapping or via data dashboards. While currently some of this can be done through scientific publications, there is a great deal more that CDC would like to be able to do via social media, its veto violence website, and other communication channels to reach both the general public and researchers and practitioners of suicide prevention.

The second goal under Pillar 1 is to enhance the understanding of suicide etiology and to conduct research on modifiable individual, social, and environmental risk factors contributing to suicide. It is known that one of the most salient risk factors for suicide is substance abuse. It is also known that people who die from drug overdoses are at increased risk for suicide and, in fact, some of these overdoses may be suicides. As the nation faces or continues to face the opioid epidemic and large increases in suicide, it is imperative to find ways to address both. On page 5 of the BSC's first handout, CDC provided some data on these trends and also considers the multiple ways in which opioid use and suicide risk overlap or interact. For example, it is known that health problems and chronic pain are associated with opioid use. It is also known that people with mental health problems are more likely to suffer chronic pain and substance abuse, and that substance abuse is associated with economic, legal, and relationship problems, and all of these are risk factors for suicide.

Pillar 2, discovering and sharing what works to prevent suicide, has one goal and four strategies. The goal is to build the evidence base of what works and ensure the knowledge gained is disseminated. This goal addresses the second half of the public health approach. The strategies largely relate to rigorous evaluation of programs, policies, and practices and disseminating for actionable knowledge what we learn. The first strategy for Pillar 2/Goal 1 is to rigorously evaluate the effectiveness and economic efficiency of innovative and culturally relevant programs in vulnerable populations. This strategy comes directly from the NCIPC suicide research priorities. Here, there are three activities. The first is to conduct formative research to better understand how to engage high risk populations in suicide prevention. Several groups are relevant here. The first is a group that federal partners are particularly concerned about, non-VHA veterans. These are veterans who do not utilize VA services for healthcare. When we talk about 20 veteran suicides a day, the non-VHA group makes up 2/3 of this number. Other groups that are hard to reach include middle-aged males, rural residents, and American Indian/Alaska Native (AI/AN) youth who have the highest suicide rates. Determining the preferences of these groups will be critical to effectively engaging them and bringing down suicide rates.

The second activity considers the settings in which high-risk populations can be reached. For example, CDC is currently evaluating an online intervention for middle aged men called "Man Therapy." Dr. Stone urged those unfamiliar with Dr. Rich Mahogany to go to mantherapy.org. In all seriousness, continued exploration and evaluation of innovative interventions in innovative settings is an area worthy of further development and study. The third activity is to rigorously evaluate interventions focused beyond the individual level. Like so many other areas, this activity offers great promise, especially when considering that the large majority of suicide prevention interventions are focused at the individual level with most focusing on clinical populations. NCIPC's technical package for suicide prevention points to strategies for suicide prevention that impact on macro level factors at the outer levels of the social ecological model, for example, strategies to strengthen economic supports through policies targeting housing stabilization and household financial security. Other strategies that focus on promoting connectedness in communities and in relationships hold great promise as well, especially in the context of an overall comprehensive suicide prevention plan.

The second strategy under Pillar 2, to evaluate the impact of cross-cutting violence prevention strategies on suicide and disseminating what works, focuses on "connecting the dots." Common risk factors are known to exist for multiple forms of violence, including suicide, yet for a variety of reasons it has been a challenge to evaluate the impact of violence prevention interventions on suicide. Some of the reasons for this, apart from funding concerns, have to do with stigma and the myths surrounding suicide—everything from the myth that suicide is not

preventable to the myth that if someone is asked about suicide, it will plant the idea in their head, and lots of things in between. Another challenge related to the second activity has to do with gaining Institutional Review Board (IRB) approval at all or in a timely fashion for protocols involving potentially suicidal subjects. Unless an IRB is used to seeing such protocols, they can be very loath to grant approval without extremely stringent criteria that in many instances may not be indicated. To mitigate these concerns, CDC could develop and evaluate guidance especially for new researchers to use with their IRBs. They also could target educational materials directly to IRB members.

Somewhat related to that last activity, the third strategy relates to exploring and disseminating improved messaging for suicide prevention. Here, there are three activities. The first is to assess the current use and effectiveness of media guidelines for safe reporting on suicide. These guidelines were developed in the late 1990s and it is just not clear to what extent they are used or have an impact. Another concern is that the messages contained within the guidelines and in the field in general are heavily weighted toward mental health concerns and away from any other risk factors. This may be having an unintended effect of minimizing suicide risk. For example, one of the most touted risk factors for suicide over the years has been depression and, to a lesser extent, other mental illnesses. The truth is that the great majority of people with depression, Post-Traumatic Stress Disorder (PTSD), or schizophrenia never attempt or die by suicide. According to researchers like Eric Caine, even if the focus is solely on people with just these disorders, it would be difficult to figure out which ones would die by suicide. Screening and risk assessment are simply not that good yet. Even if it were, they would probably still be missing many other factors associated with suicide, such as job and financial problems, relationship problems, health problems, access to lethal means, and social isolation. More recently, the popular press has started to say more about the role of the economy, wages, and income inequality in suicide and drug overdoses. While this work provides a great deal of insight, the economy has suffered from multiple recessions and multiple expansions and contractions known to be associated with suicide. In the end, it seems the field is all too eager to go back to a focus on mental illness.

The last activity in Strategy 3 is to update and share guidance with communities on preventing suicide clusters. The guidance provided in the past is more than 30 years old and, of course, times have changed dramatically since then. Recently, CDC's partners at SAMHSA identified the need for particular guidance for preventing clusters in AI/AN communities that have been particularly hard hit by suicide. In addition to guidance on clusters, CDC seeks to get out the message about how communities can prevent clusters and suicide risk in the first place. To this end, DVP developed its first technical package for suicide prevention, *Preventing Suicide : A Technical Package of Policies, Programs, and Practice*. This report is the first of its kind to lay out for states and communities the best available evidence for suicide prevention. The technical package highlights both upstream and downstream policies, programs, and practices, and it goes beyond a focus at the individual level and beyond a focus on mental illness. The hope is that states and communities will use this information for decision-making purposes as they look to what works. DVP is currently working on implementation guidance to go along with this technical package and hopes to have this online in the coming months. Strategy 4 is to ensure widespread dissemination of the technical package.

The goal for the third and final pillar, working collaboratively for highest suicide prevention impact, is to strengthen existing and leverage new partnerships to build the capacity of states and communities to implement and sustain comprehensive evidence-based suicide prevention strategies using a public health approach. Here, there are five strategies. The first strategy is to work with partners to implement, adapt, and evaluate comprehensive suicide prevention. For

years, the suicide prevention field has talked about the need for comprehensive suicide prevention incorporating upstream and downstream prevention and prevention reaching multiple levels of the social ecology. However, and unfortunately, to date there are few such comprehensive programs operating in the US. Some of the reasons for this include a lack of resources and a focus on clinical populations.

CDC has the opportunity to expand implementation and evaluation of comprehensive prevention strategies and approaches using its technical package of evidence-based policy, programs, and practices as a basis. Specifically, CDC seeks to work with the Colorado National Collaborative to pursue comprehensive suicide prevention in that state. Colorado rises to the surface for this endeavor because it shows evidence of readiness, meaning that Colorado has a strong public health infrastructure and the state demonstrates political will as evidenced by a very rare funded Office of Suicide Prevention and a legislated State Suicide Prevention Commission. Unfortunately, Colorado also has the dubious distinction of consistently being within the top 10 states with the highest suicide rates in the nation. Colorado is also an area to consider for this endeavor due to its mix of rural communities, AI/AN, and veterans. All of these populations could benefit from comprehensive suicide prevention.

DVP and DARPI are collaborating with the Colorado National Collaborative to develop a concept proposal for the CDC Foundation. Led by the Colorado Office of Suicide Prevention and the CDC-funded ICRC at Rochester, the Colorado National Collaborative has laid critical groundwork for this proposed project. During this phase, they convened multiple meetings with partners and stakeholders across the state. They have used data from the Colorado Violent Death Reporting System (CoVDRS) to identify four counties for comprehensive suicide prevention. These counties were selected based on their suicide burden, rural versus urban locale, current prevention programs, and access to veteran and AI/AN populations. In addition, an across state environmental scan identifying current prevention efforts across the state also has been completed. In order to start building a framework for effective dissemination of comprehensive suicide prevention later, a process called System Dynamic Modeling has been initiated and supported by CDC, which seeks to map the processes and systems that can impact on suicide rates and other intermediate outcomes.

Phase 1 of the proposed project will build upon this formative work and specifically, the Colorado National Collaborative will work with partners to build an on-the-ground statewide system of tightly coordinated suicide prevention resources such as staffing, funding, data, and evidence-based practices. They also will build communication channels for exchange of information between the four communities that were selected and with the Colorado Office of Suicide Prevention and the Colorado National Collaborative. Phase 1 also will plan for the development and testing of concrete implementation tools and processes for later dissemination. They also will create a coordinated cross-site evaluation plan during this phase. The evaluation will track what local sites are doing, how they are doing it, and what they are learning. To enhance evaluation, consideration also will be given to expanded surveillance capacity, perhaps through syndromic surveillance.

Phase 2 of the project will focus on the local rollout of the transforming communities process. The *Transforming Communities: Key Elements for the Implementation of Comprehensive Community-Based Suicide Prevention* document was created by the NAASP to help with implementation of comprehensive prevention. The right side of the following table reflects seven key elements in NAASP's *Transforming Communities: Key Elements for the Implementation of Comprehensive Community-Based Suicide Prevention* document, which will

be aided by the seven strategies in CDC's *Preventing Suicide: A Technical Package of Policy, Programs, and Practices* shown in the left column:

Comprehensive Suicide Prevention		
CDC Technical Package 7 Strategies (What to Implement)	**Action Alliance 7 Key Elements (How to Implement)**	
1. Strengthening economic supports 2. Strengthening access & delivery of suicide care 3. Creating protective environments 4. Promoting connectedness 5. Teaching coping & problem-solving skills 6. Identifying and supporting people at risk 7. Lessing harms and preventing future risk	1. Unity 2. Planning 3. Integration 4. Fit 5. Communication 6. Data 7. Sustainability	A shared vision attained Strategic planning begun Multiple strategies selected Activities aligned, tailored Ongoing input/feedback Ongoing monitoring and evaluation Plan for lasting change

Based on the local data in the prevention programs and initiatives already in place in the four communities, the idea is that they will work together to select multiple strategies from the technical package to fill prevention gaps in their communities. Ideally, these selections will include prevention activities impacting at the societal, community, relationship, and individual levels and also will target workplaces and other settings for prevention that may not ordinarily be targeted. All of this will be led by local leaders with support from the Colorado National Collaborative.

Phase 3 will focus on translating and disseminating the complete package of comprehensive suicide prevention (e.g., implementation supports, project outcomes, lessons learned) to key stakeholders at the local, state, and national levels. Translation products will include practice-focused tools, briefs, and other resources, peer-reviewed publications, conference abstracts/workshops, and social media posts disseminated through state and national partners. Beyond the development of translation tools, Phase 3 also will include the development of a plan for sustaining comprehensive suicide prevention in Colorado, as well as actively scaling up this approach in other states across the country.

The third activity for Pillar 3/Strategy 1 is to adapt the suicide prevention technical package for military and veteran populations. For this activity, CDC proposed to convene a meeting with DoD officials and Commanding Officers of key, high burden military installations to think through how the technical package can be best used with this population.

The second strategy in Pillar 3 is to support states, communities, and academic institutions to address and advance suicide prevention. Here there are several activities. In the interest of time, Dr. Stone just briefly touched on the first activity. In September, CDC funded a contractor to conduct an environmental scan of suicide prevention across the US, territories, and select tribal groups. The goal of this contract is to understand what is happening on the ground in suicide prevention with a goal to understand what accounts for variation in suicide rates across the country and what factors may be contributing to suicide rates. They want to learn whether suicide prevention is a priority in states; whether it is even funded; and whether state plans are being implemented and, if so, when they were last updated. Once these data are gathered, CDC will be disseminating information back to states to spur additional attention to this pressing public health problem and gather and garner necessary resources to address it. The final strategies seek to identify and engage new and non-traditional partners to help expand CDC's suicide prevention reach nationally in the public and private sectors (Strategy 3); promote

NCIPC suicide prevention research priorities and current activities with partners (Strategy 4); and advance field epidemiology to support communities (Strategy 5).

Dr. Stone posed the following questions for discussion:

- How can we more effectively take advantage of the intersection between suicide and opioid overdoses?
- How do we effectively promote the idea that suicide is a public health problem driven not just by mental illness, but by a range of other factors?
- How can DVP and NCIPC in general effectively strategize to identify and seek our additional resources to carry out our strategic plan so that we can support our national goal?

Discussion Points

Dr. Coffin emphasized that one element that is growing regards what to do instead of opioids, such as use of non-medication-based pain management. Another element of that is that a lot of people use opioids to manage depression or anxiety issues. He worries that decreasing access to opioids or benzodiazepines may result in increased suicide rates. While these medications may be associated with suicide, they may also mitigate suicide risk for some people. He does not have a clear answer of exactly what to do, except to take suicide risk into consideration in opioid policy development and in the efforts to ensure that providers are offering the services that people need, not just stripping away the risky service of providing opioids. In some ways that is nice, because it makes the opioid stewardship effort more proactive in that it lets practitioners do the right things for patients.

Dr. Allegrante expressed appreciation for advancement of conceptualization that goes beyond the individual and mental health issue. His sense is that while biologic predisposition and a host of individual level mental health factors are important to suicide, they are seeing just the "tip of the iceberg." In terms of what has been occurring nationally with respect to the opioid epidemic and the dramatic shifts in the economy, it makes him wonder whether there is a correlation between red state voting and suicide. He thinks there is a convergence of social circumstances and economy that is driving this as a public health problem. Regarding how to effectively promote the idea that this is a public health issue, he thinks what they need is the same kind of dramatic illustration that Michael Marmot did over a decade ago when he demonstrated the power of the social determinants as the driver of most health inequities. Something similar to that is needed for suicide that maps out the pathways to suicide that are largely structural and related to social circumstances. It sounded like they were thinking about it like this already, which he commended.

Dr. Green said she was struck by the fact that suicide prevention and the work from this group has always had thoughtful discussions about how to communicate and understand patterns of suicide that, as an epidemiologist, she has always looked to. She wondered why they were not thinking about media communications for overdose. It is ironic in some ways in that her field has often looked to suicide for advice there. There may be some great synergy with extramural research and other programs that may be able to work synergistically in the funding environment. Mapping those similarities out might be beneficial, maybe in a companion document. It used to be that multiple ED visits for an overdose were a rare event, but now it is quite common. Understanding those trends and patterns to build those bridges may be helpful.

Regarding the second question about promoting the idea as a public health problem, **Dr. Gioia** reflected on something from the beginning of the presentation about how the public understands, perceives, and digests the information. To him, that probably would form the basis for answering the second question. Whether it is an event, a particular celebrity, or some other sentinel event that occurs, understanding the keys to people opening up their heads for that period of time for messaging could begin to drive an expanded understanding of these factors. It seems like that basic information is critical to know to understand how to deliver messages. People have to be ready to hear messages. One thing CDC does well is deliver effective messages in a timely and relevant way.

As an emergency medicine physician over the last 25 years, **Dr. Vaca** has taken care of thousands of depressed patients who present to the ED for a number of reasons, including suicide and suicidal ideation. He is completely blown away that there is absolutely no funding for this area. With everything that is going on in the opioid epidemic, the overlap is very important to consider. There are very distinct differences as to what leads to either of those ends. He would caution against people implying that if you decrease opioid and benzodiazepine use, something clearly important that needs to be done in this epidemic we are in, that this will lead to people killing themselves. That is a difficult thing to consider, and unintended consequences have to be considered in any intervention and that is a challenge in itself. We need to understand this much more clearly. He thinks the messaging is important about most depressed people not killing themselves, because most of the public probably does not think that is the case. Given the timing with the opioid epidemic with this major issue, finding champions already working on the opioid epidemic who already understand it could be a great opportunity to help move the suicide prevention field forward.

Dr. Austin indicated that within traffic safety, NHTSA looks at carbon monoxide poisoning from motor vehicles. Many people in the traffic safety community say those are intentional injuries that should be taken off of the plate. It is difficult, so he commended them.

Dr. Frye requested further discussion about change in risk factors over time, perhaps for the past 10 years, in terms of the state of the science and what risk factors have changed and might be contributing to this increase. New York City has experienced an increase in the suicide rate. She commended them regarding the environment and social environment and creating healthy environments for people to reach their full human potential. She asked how they are working with organizations that support lesbian, gay, bisexual, transgender, queer/questioning (LGBTQ) youth and how communities can be developed that support them in both their sexual and gender identity development.

Regarding the first question, **Dr. Stone** responded that CDC does their best to track risk factors for suicide through such things as the Youth Risk Behavior Survey (YRBS) and the National Survey on Drug Use and Health (NSDUH) by SAMHSA. Of course, one of the major risk factors that has been getting a good deal of attention is the economy. That cannot account for everything, because that was in the later 2000s and the data span from 1999 to 2015, the year for which they have the most recent data. The trends have been creeping up since then. They are using the NVDRS data to assess additional risk factors. Some of the biggest ones they see are relationship problems, trouble with connectedness, and health problems. Many of the risks she mentioned earlier are very common, though she said she could not speak to whether those trends are increasing over time. They have a lot of hypotheses, so more study and research are needed to understand just what is happening. They hope their work through the environmental scan and such will help them understand what is occurring in states and communities in terms of risk factors. Regarding the LGBTQ community, CDC works with many

partners but could expand that number more. One of those includes the Trevor Project. Dr. Stone is working on a paper with the Williams Institute. They are reaching out to as many partners as they can, and recognize that sexual minority youth and others are at hugely increased risk for suicide, and appreciate that those communities need a lot of support and that they must do more in that area.

Regarding Dr. Stone's second question about public health messaging, **Dr. Hedegaard** recognized that CDC has been very active with the NAASP, which has extensive media messaging outreach. However, it seems like the things NAASP does are at critical points in time rather than having an overarching message. For example, when the Netflix program *13 Reasons Why* came out during September, which is suicide prevention month. She wondered how CDC could partner with NAASP so that everything that comes out of that group includes overarching messaging so that they do not always work with point-of-time messaging.

Dr. Coffin inquired as to what percentage of suicides/suicide attempts are related to firearms and whether there is an association between firearm ownership and suicide.

Dr. Stone indicated that firearms are used in about half of all suicides and less than 1% in suicide attempts.

Dr. Mercy added that having a firearm in the house increases the risk of suicide, which has been well-established by numerous studies.

Dr. Frye reported that according to New York City data, they have had a decrease in firearm-related suicides. One idea for messaging pertaining to the idea that suicide is not preventable would be to present the data on structural interventions on bridges and the evidence that people prevented from committing suicide jumping off of bridges did not go overdose or shoot or hang themselves. A simple graphic could show an actual structural/physical environmental intervention that was implemented that prevented people from killing themselves.

Dr. Crawford said that often in these situations, he thinks about causation or correlation and which comes first, the chicken or the egg. Thinking about suicidology, opioid use or substance use more broadly, it occurred to him that if regression equations were lined up for both of those, that might offer an idea of what the contributions are of each variable. It is probably multiply determined on the factorial side and the support side. Since suicide is probably different with different groups, there are probably going to be increased risks for different groups. As they drill down to look at more detail, it might be helpful for CDC to think about the stratified samples compared by age, race, economic circumstance, health circumstance, et cetera.

Dr. Vaca noted that in terms of the systems dynamic modeling project, the complexity of suicide prevention and the overlap with the opioid piece will feed into nice development of an explanatory model, as Dr. Crawford pointed out. That could be very helpful to CDC in terms of developing talking points, communication with partners, et cetera.

Dr. Porucznik thanked the BSC for their lively contribution to this topic. She thought this was a good illustration of how they all come from different areas of research and each could apply their expertise to a topic that may not be their specific area, but to which they could make a meaningful contribution.

Essentials for Childhood Portfolio Review

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Dr. Merrick reported that there was a very robust internal WG. In CAN, NCIPC has a wonderful group of subject matter experts (SMEs) who were working thoughtfully and carefully together. All of their insight and expertise fed into this portfolio review. She expressed gratitude for Dr. Hargarten's leadership of the external WG that incorporated all of the insights from the internal WG, external stakeholders, and key informant interviews to provide the report that was circulated to the BSC about a month ago. During this session, Drs. Hargarten and Merrick focused on the observations of the WG. Given the number of new BSC members, Dr. Merrick provided some brief background information on *Essentials for Childhood* (*EfC*) and what the portfolio review was about, while Dr. Hargarten reviewed the WG's observations for the BSC to consider and weigh in on.

Dr. Hargarten explained that *EfC* is a vision and unifying framework for CDC DVP's CAN activities that includes surveillance, research, and programmatic activities. This is a broad funding effort with a framework that outlines four goal areas.

Dr. Merrick indicated that the *EfC* vision and unifying framework for CDC DVP's child maltreatment prevention work is assuring safe, stable, nurturing relationships and environments for all children. This means relationships between parents and their children, children and other adults in their community (mentors, teachers, et cetera), and parents and other adults for which there is evidence to show these relationships can be protective of their children—a dual generation approach to prevention. The environment includes the physical, home, community, and school environments. This also increasingly means the broader sociopolitical environment, conditions, context, and structural and social determinants. It is known that there are certain conditions and contexts that are supportive of children and families, and others that do not do as well at protecting children. For all children, this is really the intentional integration of health equity into this work. This is to highlight the science that is very clear that one's child will do better if all children in this country are doing better. This is the vision that guides all of the CAN prevention activities within DVP.

The *EfC* framework goals are to raise awareness and commitment to support safe, stable, nurturing relationships and environments; use data to inform action; create the context for healthy children and families through norms change and programs; and create the context for healthy children and families through policies. *Preventing Child Abuse and Neglect: A Technical Package for Policy, Norm, and Programmatic Activities* is a resource describing the best available evidence-based strategies and approaches to address the third and fourth goal pertaining to policy, programs, and norms approaches. This breaks with the dominant narrative that it is a bad family or bad parent who maltreats their child, and recognizes that everyone has a role to play in assuring health and wellbeing for all children.

EfC also is a funding initiative, which is the component that the portfolio review was designed to assess and make recommendations on future iterations of the funding initiative. The portfolio review for *EfC* was the 12th NCIPC portfolio review. While EfC represents an umbrella that describes all of CDC DVP's activities, this portfolio review was designed to be a portfolio review of the funding initiative per se versus a comprehensive review of everything they have done in CAN prevention. CDC currently funds 5 state health departments (California, Colorado, Massachusetts, North Carolina, Washington) to implement *EfC* working in the four goal areas in a particular way using a collective impact approach. That means that they have to have multiple partners, some of which were specific: Traditional, Business, Media, Parents Anonymous®, Prevent Child Abuse American®, National Alliance for Children's Trust and Prevention Funds. They also had a cross-sector steering committee for which each public health department served as the lead, and which represented multiple perspectives and leveraged multiple resources and partnerships across sectors to have a shared vision for children. What is very exciting about this work is that 31 additional self-supported states that receive no CDC dollars are participating in the *EfC* initiative in some way. TA, meetings, and reverse site visits are available to self-supported states.

The purpose of the *EfC* were to determine to what extent the current vision, purpose, and goals of EfC have performed in the following areas: Scope and Reach, Sustainability, Monitoring & Evaluation and Metrics, Impact, and CAN Technical Package Uptake. The evaluation goals were to gain preliminary insight to: 1) assess the focus, quality, and usefulness of the Essentials framework; 2) assess the early impact and outcomes associated with the *EfC* initiative; 3) identify gaps, redundancies and other areas for improvement in the *EfC* initiative; and 4) assess infrastructure support for the *EfC* initiative. The evaluation questions were:

1. Are there ways to refine or revise the vision or framework for *EfC* that will maximize potential for impact?

2. What strategies/approaches can be used to expand and sustain the *EfC* Initiative to all 50 states?

3. What else can be done to enhance the monitoring and evaluation of the progress of the *EfC* initiative? Are the metrics appropriate? Are there additional ways to measure impact?

4. Assuming we have a clear and appropriate vision/framework, how can we increase the impact of *EfC* (e.g., communications, technical assistance, funding & other resources, training, partnering, infrastructure)?

5. How can we help partners, policy makers and practitioners better implement the four goal areas?

The three methods used to collect primary data included stakeholder interviews, an environmental scan of previous CAN initiatives, and a peer-reviewed literature review of CAN protective factors and collective impact. The stakeholder interviews included qualitative telephone interviews with 19 internal CDC staff, 5 BSC members, and 8 external stakeholders. The environmental scan assessed other data systems to identify, inventory, and categorize relevant web-based data query systems (WBDQS) to document the technical and other features of the query interface, and compare with CDC's Web-based Injury Statistics Query and Reporting System (WISQARS™) WISQARS. A number of CDC and other federal WBDQS were reviewed. The peer-reviewed literature search to review the use and usability of WBDQS using PubMed was conducted by the staff of the Stephen B. Thacker CDC Library and identified 118 potential references between 2004 and 2014. The peer-reviewed literature search was conducted to identify information regarding CAN research, prevention, and evaluation approaches; and Google scholar and gray literature (Google, websites of key stakeholders). The CDC internal WG provided a lot of input. The external contractor, Battelle, collected input from everyone, and wrote the report. The external BSC WG reviewed the entire report and made observations on moving forward.

Turning to a summary of the findings, the first question was, "Are there ways to refine or revise the vision or framework for *EfC* that will maximize potential for impact?" The vision represents an evolution and shift away from just risk reduction and deficiencies within individuals that the field has largely been based on, to address wider social, economic, and political factors that put families at greater risk for CAN. The focus is on social determinants of health (SDOH), the Social-Ecological Model (SEM), and collective impact.

Dr. Hargarten reviewed some of the BSC Expert WG's observations and suggestions regarding the first question. The WG suggested adding a mission statement to *EfC* and consider refining the logic model for the *EfC* Initiative. Quotes from two of the members were as follows:

> "The Vision as it is is great and the response indicates that it resonates with people. But there is also a local phenomenon with this; collaboration is helping. CDC has provided a way to summarize great work under one area. And it is important to drill down to the local community level, as that's where sustainability will occur."
>
> "When we try to find families that need help, it is hard; families will believe the intervention is stigmatizing; that the world is divided into people who can take care of their child on their own and people who need help. That has to be broken down, and a platform set so they have to ask for help and someone is there to provide it. This changed the framework of how to support all children. For example, if Social Security was only for poor people, we don't know if it would have viability, or if the educational system was set up only for poor children, it wouldn't work – it changes the viability on a practical and political realm. Have to make it supportive – prevention is voluntary – given as a benefit you have by virtue of being a parent."

Regarding the second question, "What strategies/approaches can be used to expand and sustain the *EfC* initiative to all 50 states?" **Dr. Merrick** indicated that over half of the states applied for the initial funded. While CDC could fund only 5 of them, 31 are participating at some level. There have been a lot of early wins in the areas of public awareness, stakeholder engagement, policy, leveraging partnerships, and shared resources. Some of the stakeholder perspectives that came to the forefront during the interviews included the following:

- Using the Collective Impact approach requires a substantial investment of time planning to ensure the right partners are involved and processes are in place that will lead to high levels of partner engagement and commitment.

- Building effective partner relationships is key to the initiative. It is important that partners trust each other and feel included and valued in the process.

- Technology can help facilitate communication and partner engagement.

- In terms of expanding resources for states, there was a lot of state interest when the funding announcement was released in 2013.

- Regarding leveraging resources, by engaging public and private sector stakeholders, some states have successfully engaged the business community, increased awareness about factors that affect CAN, helped businesses "connect the dots" in understanding how CAN affects a person's development, and leveraged funding.

CDC provides the funded states with very little money of about $175,000 per year for 5 years. With that, states are expected to work in all four goal areas. Thus, they need partnerships to be able to do this work well, comprehensively, and experience impact.

Dr. Hargarten reported that regarding the second question, the BSC Expert WG made the following suggestions:

- Require grantees to utilize some form of a coalition-based strategy that may or may not include Collective Impact.

- Determine essential partners and functions that need to be included to ensure success.

- Explore the possibility of flexibility in opening the FOA to other entities (governmental or non-governmental bodies) beyond state health departments.

- Create a Policy Supplement, which would be very timely as a complement to this important work.

With respect to the third question, "What else can be done to enhance the monitoring and evaluation of the progress of the Essentials Initiative? Are the metrics appropriate? Are there additional ways to measure impact?" **Dr. Merrick** noted that some of the stakeholder perspectives that arose were that the lack of accurate surveillance data at the state level (particularly data on upstream factors related to CAN) makes it more difficult to have a clear understanding of needs and resources or to conduct evaluation; and that currently, the only surveillance data is for families who come into contact with the system (Child Protective Services (CPS), ED, hospitalizations, deaths, et cetera). In terms of stakeholder suggestions, research activities (meta-analysis, economic analysis of prevention efforts, cost-benefit, return on investment, et cetera) and predictive analytics to identify at risk children and youth were identified as needs. Stakeholders also observed that ED data are readily available through electronic health records (EHRs). One suggestion to leverage these data was to conduct a study to explore ICD-10 codes that are predictive of CAN. Also noted was that CDC currently does not have any mechanisms in place to track local and state-level policy changes in a systematic manner.

Dr. Hargarten reported that regarding the third question, the BSC Expert WG made the following suggestions:

- Create a Data Supplement for *EfC* sites and other communities doing similar work.
- Collective Impact should be included in the logic model.
- Conduct a national level evaluation that compares the results achieved across funded, self-funded and non-participating states.
- Create a short-term, intermediate, and long-term indicator table based on lessons learned in the past five years. This is important for planning for expansion by incrementally including additional datasets to further inform how well this effort is progressing.

Regarding the fourth question, "Assuming a clear and appropriate vision/ framework, how can the impact of Essentials be increased?" **Dr. Merrick** indicated that some of the stakeholder suggestions in this space pertained to ongoing TA and dissemination of resources, which are critical. Funded and unfunded states have access to CDC sponsored trainings and materials. There is a desire for additional details and resources from CDC, some of which CDC is in the process of developing.

Dr. Hargarten reported that regarding the fourth question, the BSC Expert WG made the following suggestions:

- CDC should engage in and/or strengthen a Collective Impact or coalition-building process with other federal agencies and other non-governmental agencies around CAN.
- States should engage in and/or strengthen a Collective Impact or coalition building process with other agencies and other non-governmental agencies around CAN.
- Local communities should engage in and/or strengthen a Collective Impact or coalition-building process with other agencies and other non-governmental agencies around CAN.

Dr. Merrick indicated that with regard to the fifth question, "How can we help partners, policy makers and practitioners better implement the four goal areas?" CDC believes that it is important to work in all four of the goal areas versus picking and choosing one program or one policy. Some of the stakeholder suggestions were about increasing strategic partnerships. They suggested exploring partnerships and engagement with other federal agencies, as this may provide CDC access and knowledge to additional data sources. What she heard repeatedly from the key informant and stakeholder interviews was really about whether CDC could provide a list of the most important partners to get in each state. Obviously, there are pros and cons to that approach. Traditionally, CDC has observed that partnerships have to be strategic, but they also have to be organic. They cannot be prescriptive, but must instead be true partnerships. This means engaging people early, often, and over time in the process of prioritizing.

Dr. Hargarten reported that regarding the fourth question, the BSC Expert WG made the following suggestions:

- Give communities options for which of the four areas they want to focus their efforts.
- Encourage states to utilize existing policy tracking tools.
- Strengthen existing federal partnerships and form new ones.
- Create an Implementation Supplement around strategies targeting the four goal areas of Essentials. The supplement can detail information for sites, and technical assistance should be provided to help states and communities translate their ideas into action.

In conclusion, Dr. Hargarten emphasized that he was honored to have led this review. It has been layered with an extraordinary level of input from a variety of content expertise and external commentary.

Discussion Points

Dr. Crawford complimented the report and the choreography of the presentation. He thought the health equity lens, socioeconomic approach, best available evidence, Collective Impact, and notion of the natural laboratory were wonderful represented a lot of very good work. He asked how much TA CDC is able to provide to help states move to a more standardized model of services, recognizing that there would be differences in each state in terms of infrastructure, politics, motivation, availability of advocacy organizations, and understanding the components of Collective Impact from awareness to policy.

Dr. Merrick replied that they have opened all of the technical assistance (webinars, speakers, reverse site visits, et cetera) available to all states that are interested, not just the 5 funded grantees. It is not uncommon for reverse site visits to include the 5 funded states and an additional 12 or more states who participate at their own expense and bring many more staff in order to participate fully in the 2- to 3-day meeting. There are many types of technical expertise, and teleconferences, webinars. Everything that is open to the funded grantees is also available to the non-funded states. In terms of the specifics of what states need, CDC has very conscientious and passionate internal groups and internal and external partnerships. Often EfC states many not even know who the ACEs people are in their states. A lot of it is about connecting people with others, leveraging existing partnerships, et cetera. CDC is also trying to practice what it preaches in terms of modeling the good behavior of working together toward a common shared vision.

Dr. Hedlund pointed out that traffic safety has good data. Police collect data on crashes, the national system has data on fatalities, et cetera. He expressed concern about the data in the report. Page 37 indicates that there is a lack of accurate surveillance data at the state level. The only surveillance data are for families who come into contact with CPS, EDs, et cetera. The report also states, “CDC currently does not have any mechanisms in place to track local and state level policy changes in a systematic manner.” Given that there are no outcome or program data, he expected to see some recommendations having to do with data. However, the only recommendation he saw on evaluation is to “Conduct a national evaluation that compares results achieved across funded, self-funded, and non-participating states.” However, such an evaluation depends upon data that they do not have. He wondered what anybody could do about the data problems.

Dr. Hargarten agreed that this was a great question, but a challenging one given that the recognition of child abuse in terms of the outcomes Dr. Hedlund mentioned oftentimes presents in an ED setting. That is in the late phase of trying to identify at risk cases. In terms of Question 3, the BSC Expert WG suggested creating a data supplement, but that also calls for strengthening of the data in order to get a better handle the scope and nature of this challenging area. This is a great point and one that requires a lot more work.

Dr. Mercy acknowledged that this is a major issue and that CDC recognizes this. They have conducted violence against children surveys in developing countries around the world. They have completed those in and are working with 23 countries at this point. They are bringing that technology and what has been learned from that context back to the US. With funding from the Robert Wood Johnson Foundation (RWJF), CDC has been contacting states and localities during the past year to ask them about their interest in applying that methodology in the US to provide exactly the type of data Dr. Hedlund mentioned that would give them more definitive outcome data not based on contact with the system.

Following up on that point, **Dr. Johnson** asked whether there are approaches with which CDC might be able to use the NHIS data to look for correlates that might identify future opportunities. The US Department of Housing and Urban Development (HUD) has spent a lot of time working with those data. HUD has merged their data and are learning a lot with the data about those they house. There are some sampling and bias issues, but it has let them play around with the idea that if they cannot measure something directly, perhaps there is a way to measure it indirectly by examining correlates and developing some methodology that allows them to move forward by taking advantages of existing systems. There are probably other existing databases based on national data collection efforts that potentially could be used to do the same thing. These are low-cost approaches, although there are sampling issues.

Dr. Merrick responded that there are innovative proxy means of getting around the lack of data in this area. To date, 39 states and DC have collected ACE data on their BRFSS. That is not national yet and it is retrospective, so there are numerous limitations. They could conduct a national internet op-in panel, which they have presented to the CDC Foundation and for which they are currently seeking funders. That is a low-cost way of potentially having relevant representative data. If an element is added on to that of oversampling or selecting a range of those 18 to 24 years of age, it will be possible to track the data over time. As increasingly more states engage in prevention activities, it would be possible to determine whether those numbers move. Now the mean age is about early 50s retrospectively reporting on things that occurred under the age of 18. There are other types of novel approaches that CDC might be able to utilize, especially during this time of strict budgets. Of course, this also has advantages and disadvantages. But, there are ways to address that that could help to bridge some of the data gaps.

Dr. Frye said she noticed some themes across presentations, including the need for better longitudinal data, Collective Impact, and a WG to address deficiencies in surveys in siloed areas. Not specifically related to CAN, she wondered whether there is an effort at CDC to consider surveys that address all of these outcomes, developing the databases around policies and available environment-level covariates of interest. It is impossible to get data on social cohesion, collective efficacy, and any kind of social capital data at the state and local levels. CDC could play a role in inventorying and housing those data for use by researchers. There is an incredible gap that significantly hinders the ability to conduct the research that will demonstrate causation and that will help to understand causal models and pathways. One

aspect of Collective Impact is addressing silos and moving beyond that. There is a need for NCIPC and CDC more broadly to address this.

Dr. Greenspan concurred that there is clearly a need for better coordinated data. Clearly, there are a lot of data that they do not have. Conversely, they hear from states that every program, center, and office is asking for their own specific data and this places a huge burden on states. CDC's Center for Surveillance, Epidemiology, and Laboratory Services (CSELS) in engaged in an effort to assemble and assess all of the surveillance data that are being collected within CDC. The plan is to put these data in the cloud to develop modules people could pull. This is a major task, but everyone recognizes that it is a big issue. From the CSELS website, "The Surveillance Data Platform (SDP) is applying cutting-edge technology and industry standards to critical public health challenges—from infectious disease to chronic health conditions. SDP is a secure, cloud-based platform that centralizes and shares common information technology services needed for disease surveillance."

Dr. Hedegaard said that how she interpreted Dr. Frye's comments, and in light of the recent conversation about suicide, is that there are no data for everything that impacts suicide, CAN, violence, et cetera to demonstrate that social cohesion, connectedness, and such seem to have an impact. Clearly, such data would inform a lot of what is occurring within NCIPC.

Dr. Frye added that non-profit national and local organizations are organizing the policy data that are not collected by CDC or elsewhere. For example, if someone wanted to know about HIV criminalization, they would have to go to the HIV Criminalization Project. What about the groups who have not been able to organize for themselves, such as undocumented immigrants?

Dr. Hedlund emphasized that this is the era of big data everywhere except CDC. He sees a broad CDC initiative to try to assemble what is available and create what is needed. There are gaps beyond this particular committee.

Dr. Greenspan agreed that there is a major gap. She pointed out that with the new federal regulations pertaining to open access, CDC and all other agencies will be developing metadata catalogues so that there is a central place to search for data. All of this is in development. Some of the backbone structure has been completed, ball of the data has not been entered. This is coming and hopefully there will be funding to do all of this.

Dr. Porucznik emphasized the importance of considering other levels of data as well, given that state-level data may not always be the right level.

Dr. Allegrante suggested that perhaps a future agenda item for the BSC should be to recommend that a group be established to address the generic needs of some of the data collection efforts. Perhaps there should be a panel comprised of representation from throughout CDC to catalyze interest in this.

Dr. Johnson supported Dr. Allegrante's suggestion. He indicated that the Commission on Evidence-Based Policymaking (CEP) published a report specifically on this issue. He encouraged the BSC to consider how the CEP's report will have an impact on the work moving forward in this area. The CEP has bipartisan support and is now on tour presenting to a number of federal agencies, foundations, and other non-profits about the recommendations that will follow from that. The federal government captures a lot of data, but tends to keep it in siloes. This report will speak to ways to better integrate those data.

Dr. Allegrante said he was struck by how they should be looking to industry, particularly social media and digital worlds. He is part of a group that is convening industry leaders from Twitter, Google, et cetera to speak with leading academics and scientists about how to get better access and partner with industry to capture big data. That could inform a lot of the issues the BSC is discussing, so he will make sure that someone from CDC participates in that summit.

Dr. Compton found this to be an excellent discussion. He noted that several NIH institutes focus their research on these topics, generally addressing SDOH and how to promote community efforts to improve outcomes. SAMHSA also has significant programs through its Strategic Prevention Framework (SPF). He wondered about CDC's plans to work with other agencies on these important issues. The data issues being discussed are a huge theme across multiple agencies and certainly the NIH, so this might be another fruitful area for across agency collaboration.

Vote: *Essentials for Childhood* Portfolio Review

Dr. John Allegrante moved to accept the *Essentials for Childhood* Portfolio Review report. **Dr. Kermit Crawford** seconded the motion. The motion carried unanimously.

Opioid Overdose CDC Coordination / Strategic Directions

Rita Noonan, PhD
Branch Chief, Health Systems and Trauma Systems Branch
Division of Unintentional Injury Prevention
National Center for Injury Prevention and Control
Centers for Disease Control and Prevention

Dr. Debbie Dowell
Senior Medical Advisor
CDC Opioid Response Coordinating Unit
National Center for Injury Prevention and Control
Centers for Disease Control and Prevention

Dr. Noonan indicated that her branch, the Health Systems and Trauma Systems Branch (HSTSB) is home to all of NCIPC's opioid overdose prevention work. Unfortunately, the opioid overdose problem has gotten worse over the last several years. Provisional data from NCHS indicate that this is likely to continue to get worse, not better. Personally, she has been talking about the epidemic in three waves. She has found it useful to think about the first wave as coming from over-prescribing. As Dr. Frieden would say, "We really primed a whole population to have a taste for opioids." Very potent and very cheap heroin came into the market largely trafficked through the Southwest border, primarily through Mexico. It is now tainted with fentanyl. There are now very high areas of concentration, particularly in the Northeast in the Appalachian Region. While it is still an opioid epidemic, in her mind it has three somewhat distinct but intertwined strands.

To put this into perspective, this in an epidemic the likes of which has not been seen since human immunodeficiency virus (HIV). The peak of the acquired immunodeficiency syndrome (AIDS) deaths in 1995 was hovering around 41,000 to 42,000. In 2015, there were 52,000 deaths due to drug overdose. Again, NCHS is giving some indication that that number will be even higher in 2018. This is real cause for concern. The urgency, importance of being nimble, and finding new ways to do work faster, more effectively, with new partners is an important point.

A strategic direction-setting exercise helped to fend off many requests, incursions, and a lot of people wanting more of their time and energy. This led to the focus on several areas: 1) epidemiology/surveillance, CDC's core business; 2) strengthening state efforts, which is a big piece of the CDC puzzle in that it is the only federal agency that works through state health departments to scale up effective interventions to the best of its ability; 3) working increasingly intensively with healthcare providers, healthcare systems, and insurers to gain their support in some of CDC's guideline recommendations; 4) collaborating with law enforcement and public safety, which has been a very gratifying and fascinating enterprise, but as George Bernard Shaw said, "Britain and the United States are two countries separated by a common language," which is how Dr. Noonan feels when working with law enforcement; and 5) empowering consumers to make safe choices.

Due to bipartisan effort, CDC has had the great fortune to scale up some of its activities through the receipt of additional funding in the past year. This is almost a truly national program at this time, given that the agency supports 45 states and DC. Through a variety of state programs and initiatives, the areas emphasized are PDMPs, system level health insurers, community level interventions, policy evaluations, the Enhanced State Opioid Overdose Surveillance (ESOOS), rapid responses through which states can redeploy some of their funding with permission from CDC.

Dr. Noonan shared further information about the law enforcement component, given that it is new. She sat next to Doug Poole from the Drug Enforcement Agency (DEA) before she knew who he was. The room was very cold and she is cold anyway, so she kept moving closer to a guy who looked like he was radiating heat. He turned out to be Doug Poole, the Deputy Chief of Intelligence for all of DEA. She made a friend, which meetings are great for because you never know who you are going to meet or what serendipity there is. The result of this is that CDC had someone secunded to DEA, and DEA plans to send someone to CDC for some shorter-term assignments. CDC and DEA are trying to routinize and share data and understand what they can do to better support each other. Sometimes you don't know what you don't know, and this has been a very good exploration for CDC.

One thing that made them think this might be a fruitful idea is that they decided to look at law enforcement data for fentanyl seizures from crime scenes. The DEA National Forensic Laboratory Information System (NFLIS) collects results from drug chemistry analyses conducted by state, local, and federal forensic laboratories across the country. CDC wondered how that tracked with fentanyl-related overdose deaths. There was a case study in Ohio for which there was an Epidemiologic Assistance (Epi-Aids), and when they put the lines together, it was a great public health moment of a potential early warning system. Why not? The NFLIS data come out faster than death data. This was illuminating and demonstrated the importance of trying new things to be able to speed up in order to respond better and more effectively.

Through Doug Poole, Dr. Noonan made friends with some high intensity drug trafficking area leaders. That slowly involved into essentially working with 8 of the regions. They asked her and others from CDC to help them manage the public side of an initiative to bridge public health and public safety. This brought a lot more focus to the public health mission and vision. The idea is to share data and grow some evidence. As this epidemic has evolved, what is known about what works is moving to new places and is more localized now in terms of what is known about community interventions, how to intervene on the elicit side of the equation, and how to keep up with the pace of things like fentanyl and its analogs. In an effort to hurry up and grow evidence, they are "flying the machine as they are building it" to some extent. There will be pilot sites to implement and evaluate what looks promising, and this is being done with the full cooperation of community partners. There are also some cornerstone projects to cut across the whole 20 states in which CDC has a public health presence. There is a Public Health Advisor and Intelligence Office in each of the states.

They did a 2.0 refresh and came to agreement that their visions, or North Star, is for communities that are free of opioid overdose. The way that they intend to do that is to focus on overdose, fatal and non-fatal, and need to be held accountable ultimately for trying to reduce death rates. CDC will not be seen as successful if it does not do something about the death rates, which they intend to do in part with its partners. It is really about data sharing inspired by following the evidence and knowing the epidemic, and being in touch with communities and frontline partners who know a great deal. It is very important to understand what is going on in real communities with real people. CDC believes that law enforcement has a major role to play not only because they are first responders, but also because they are supposed to protect and serve, and the vast majority want to do something about the epidemic. Law enforcement has an army while public health has a few people scattered here and there. While they do not have it all figured out yet, Dr. Noonan believes they are doing a wonderful job in support of naloxone distribution, connection to care with medication-assisted treatment, et cetera.

Response is more of the control side of injury prevention and control. How can we stop the bleeding right now to save lives as quickly as possible with a variety of partners? Treatment and recovery are not really the CDC lane, but it is in a sense in terms of connecting systems. Again, with HIV as one of the models or playbooks, there is a continuum of care and ways to better understand the points at which people should be connected from one system to another system. It could be the ED, Emergency Medical Services (EMS), release from prison, release from treatment facilities, release from residential facilities, et cetera. It is not only important to connect with care, but also to retain care. There are very high death rates in many places among people who have already been in medication-assisted treatment. It is not enough to connect. Retention is also an important piece. Translation of the guidelines is something CDC is doing and needs to keep doing, certainly with a lot of upstream prevention activities related to safer prescribing and translation activities so that the guideline does not just sit on the shelf but is really operationalized and made ready to use at the point of care, and is translated and made useful to third-party payers and a variety of folks who need to understand how to use the guideline. CDC is trying to make it easy for states, so there is a suite of tools for them.

Dr. Dowell noted that while most of the opioid work at CDC has been focused within NCIPC for the last few years, increasingly many other centers across CDC have been interested in helping with the epidemic. In May, they were asked by the Acting CDC Director, Dr. Anne Schuchat, to stand up an Opioid Response Coordinating Unit and to work with all centers to develop an agency-wide strategy reflective of all of the agency work. They developed three documents over the summer one is a 2-page roadmap reflecting where they want to go ultimately, with medium-term outcomes and activities and short-term outcomes that are important to begin with

in order to reach the ultimate goal. The second was a 14-page strategic framework document that explains all of those activities and offers more detail about how they think all of the outcomes connect to each other. They also performed a gap analysis to try to prioritize what is not yet being done, but is really critical to ultimately achieving their goals.

Beginning in May, for the environmental scan the CIOs submitted their opioid-related activities and the Opioid Response Coordination Unit (ORCU) developed a spreadsheet that they plan to put into a more user-friendly format, but which has already been used by the CDC director and others to brief Congress on all of the activities across CDC. They conducted 17 structured interviews to obtain input from the CIOs on their overall goals and how to get there. They had a series of meetings facilitated by CDC's Chief Evaluation Officer to develop the roadmap and framework, and an in-person meeting with representation from all of the CIOs to ensure that everyone agreed on the roadmap and framework. They compared the framework to the environmental scan to identify gaps and develop gap analysis. Written feedback was then solicited and incorporated from CIOs, followed by a review by CDC leadership.

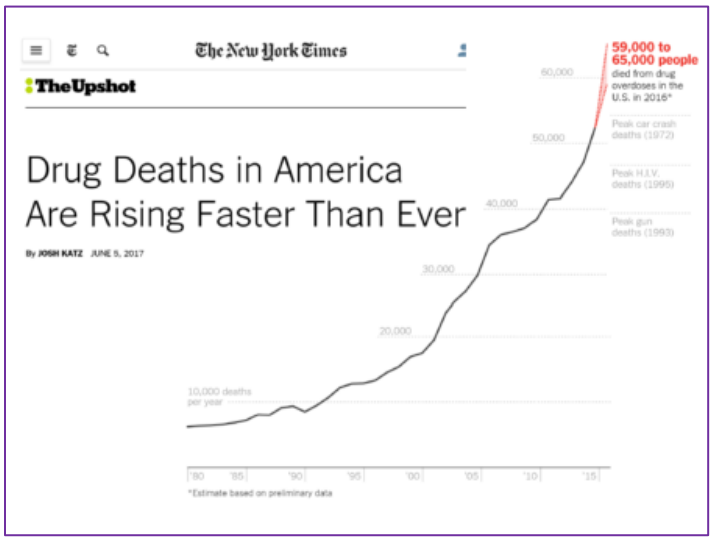
Some of the changes were to broaden the focus from states. A few years ago, NCIPC prioritized states because that is where the PDMPs are. All funding thus far has gone out to states, but ORCU is also aware that a lot of the work must happen in local communities, especially since the epidemic is starting to change. They recognized that it is also important to support tribal communities. They also broadened the primary, secondary, and tertiary prevention strategies. Upstream interventions focus on unsafe prescribing, illicit opioid use, and unsafe opioid use to prevent multiple downstream outcomes such as opioid use disorder (OUD), non-fatal overdose, hepatitis B and C infections, HIV infections, NAS, and overdose deaths. More has been incorporated about linkage to treatment and reaching/working with vulnerable populations. One of the most difficult issues regarded the most important long-term outcome(s). The following table depicts the strategies/activities and medium- and long-term outcomes, with the short-term activities left out and mid-term condensed in order to fit the table to one page:

Opioid Overdoses and Related Harms: A Roadmap for Prevention

STRATEGIES/ACTIVITIES	OUTCOMES: SHORT-TERM	MEDIUM-TERM	LONG-TERM

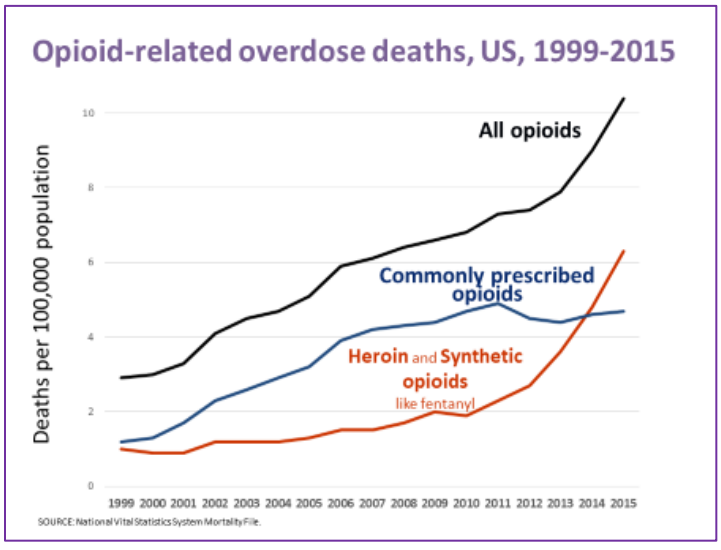
1. **Conduct Surveillance and Research**
2. Build State, Local, and Tribal Capacity
3. Support Providers, Health Systems, and Payers
4. Partner with Public Safety
5. Empower the Public to Make Safe Choices
		• Decrease unsafe prescribing
		• Increase use of non-opioid therapies for pain
		• Decrease non-medical use of prescription opioids and use of illicit opioids
		• Decrease unsafe practices among people who use opioids non-medically
		  ○ Use of drugs containing illicitly-manufactured fentanyl
		  ○ Injection
		• Increase use of effective opioid use disorder treatment including medication-assisted therapy
		• Increase use of opioid reversing drugs
			• **Reduce opioid overdose deaths**
			• **Reduce opioid-related morbidity,** including
			  ○ opioid use disorder
			  ○ non-fatal overdose
			  ○ new HBV, HBC, and HIV infections
			  ○ neonatal abstinence syndrome

Coming from injury, ORCU thought the most important outcome was overdose deaths. That is what they heard from almost every other CIO, but they did receive one very strong voice stating that they should be focused broadly on opioid-related morbidity and mortality and that focusing on opioid deaths was narrowing the focus. They struggled a lot with this because they do want to be inclusive and know that opioids have many effects beyond overdoses. At the same time, ORCU feels accountable for overdose deaths, especially when they see graphics like this one from *The New York Times* showing that opioid deaths in the US have overtaken gun, HIV, and car crash deaths at their historic peaks:



ORCU feels like if they can turn this around, they will have accomplished something monumental. If they do not, no matter what else they do, it is not clear whether Congress and the public will think that CDC has succeeded in terms of opioids. In addition to that, CDC's Congressional funding to date has specified work on overdoses. Thus, those were some of the issues they were trying to balance.

In addition, NCIPC wanted its strategy to be responsive to changes in the epidemic related to overdoses from heroin and synthetic opioids like fentanyl as depicted in the following graphic:



To nuance the tension further between the broad versus focused approach, ORCU is also aware that a comprehensive approach makes sense for the individuals who are at risk for multiple harms and to take advantage of the synergistic effects of different interventions. For example, patients surviving an overdose can be linked to medication-assisted treatment before discharge from the ED. Pregnant women with OUD can be offered comprehensive treatment that improves their safety as well as their newborn's health. Medication-assisted treatment for HIV-positive people with opioid use disorder has been shown to increase retention in treatment for HIV. It is important to look for ways to take advantage of the synergistic effects where possible.

Currently, all of the documents have been submitted to the CDC Office of the Director (OD) awaiting her review and comments. In the meantime, NCIPC is continuing its work on opioids. A couple of the questions that have arisen are going to be critical to this work going forward. In closing, Dr. Dowell posed the following questions for BSC members to consider and discuss:

- What additional strategies or activities should CDC be considering to prevent opioid-related overdose deaths given the dramatically increasing contribution of fentanyl and fentanyl analogues?

- What is the most effective and appropriate role for CDC in secondary and tertiary prevention of opioid-related overdoses given that other federal agencies have primary roles in medication-assisted treatment, training of first responders in naloxone administration, enforcement actions, et cetera? For example, should CDC use its expertise in surveillance to help link people to medication-assisted treatment? If so, what approaches would be most effective?

Discussion Points

Dr. Green requested additional information about the selection of NAS over opioid-related maternal and child death. The definition of NAS is an expected constellation of symptoms with an opioid exposure regardless of whether it is in a prescribed, controlled, managed pain environment or one that is non-medical. It is use that may end up in the same consequence of a medical condition that is treatable provided someone is in care.

Dr. Dowell replied that this primarily came from their colleagues in the Division of Reproductive Health (DRH) within NCBDDD. She agreed that the mother and her health should be kept central to the work. All of the other strategies will be helpful to the mother as well, but it is a good point about the framing if they want to make sure that mothers are receiving excellent care. They have heard about the unintended consequences of NAS, but it might be helpful to reconsider how that is framed. While it was not reflected on the table, another medium-term outcome was added which includes increasing the number of at-risk people who are accessing comprehensive preventive services, including testing and treatment for infections related to opioid use and pregnant women who are accessing medications for treatment of OUD. They did try to call that out, but she appreciated Dr. Green's point about how it was phrased within long-term outcomes.

Dr. Green emphasized that if every pregnant woman with OUD is on morphine or methadone, NAS may increase. There may be a better way to phrase the focus, understanding the motivation of DRH in wanting to try to improve the health outcomes. However, this may be very difficult to track.

Dr. Coffin: Asked what the measure is for tracking OUD.

Dr. Dowell replied that traditionally, they have used NSDUH. However, she reviewed their questions and was surprised at how they are measuring OUD which may be why the number is not increasing. They are struggling with how to measure that and are open to suggestions.

Dr. Coffin agreed that it is tough and noted that SAMHSA changed the measure for their 2015 data. He suggested thinking about OUD as incident new cases of OUD, because it is a chronic disease the background prevalence will not decline in the near future, unless we fail to reduce mortality.
Given the federal stance on marijuana, **Dr. Comstock** asked whether CDC is allowed to examine medical or recreational medical marijuana as a non-opioid therapy. Working in the sports population, anecdotally they hear that a lot of athletes in Colorado who are afraid of opioid addiction are using low tetrahydrocannabinol (THC) marijuana edibles, oils, and creams for pain management and anti-inflammation therapy.

Dr. Dowell responded that as far as she knowns, there are no restrictions on the type of research CDC could do, which would be epidemiologic observational.

Dr. Duwve agreed with the comments about NAS. There are physicians who are willing to put pregnant women on Medication-Assisted Treatment (MAT), and they may continue that up to six weeks after the baby is born. However, then there is a hard stop. It can be difficult for that mother to make it through the day without other wrap-around services and ongoing treatment and attention to her chronic disease of addiction. She feels that the focus needs to be placed on maternal health in this space. Regarding prevention of new hepatitis B, HBC, and HIV infections, they need to be more successful at actively engaging people who have prevalent infection to get into treatment and reduce viral loads through viral suppression for HIV, or actually cure their hepatitis B. Reframing that bullet point might be helpful. A lot of times, people talk about addiction as a linear process. However, she suggested that they think about it as a more circular process. That is the story of addiction. People get on the “hamster wheel” and may get off for a little while, but often they cycle back on. It becomes a continuum in which treatment is an intervention point for preventing overdose death and ACEs in the children a family may have who get caught up in that addictive structure. If prevention is thought of as a cycle, there are entry points. There are a lot of communities and families that enter into the prevention effort, but by helping those who are already on the “hamster wheel” hop off perhaps multiple times, it finally will stick and they fly off and will not enter the cycle again. She would argue that treatment is absolutely prevention, and is similar to HIV in which treatment is considered to be prevention of ongoing exposure of others to HIV. That is SAMHSA’s space and it is difficult to crossover. They have had the same issue in Indiana in that they live in two different worlds. Mental health and addiction are in one agency, and the naloxone overdose intervention is in another agency. They have had to learn how to work together in this space. While they get stronger every day, but they are not quite there yet either.

Dr. Dowell said that she came to CDC from the New York City Department of Health where mental hygiene was part of the health department, so their opioid response was preventing unnecessary opioid prescriptions, getting people into treatment, and making sure the treatment programs were engaged in evidence-based treatment all together in the same unit. It has sometimes been frustrating for CDC, given the realities of the missions of the various agencies. SAMHSA has the lead role in treatment, and CDC has been wrestling with what the most effective and appropriate role is for CDC in secondary and tertiary prevention of opioid overdose. She framed the question somewhat broadly, including naloxone enforcement

actions, but one of the main issues with which CDC has been wrestling is within the treatment space. The SAMHSA Administrator seems very eager to work with CDC. Some of the thinking is, without stepping on SAMSHA's toes, how can CDC help get effective treatment to people and make sure that the treatment is effective. CDC has surveillance expertise that can be helpful in finding people and linking them to treatment. NCIPC's colleagues in HIV have a lot of experience with the Cascade of Care model, linking people to treatment and keeping them engaged to treatment. NCIPC would like input on how to refine that.

Dr. Coffin wondered whether CDC might use the relationship with CMS to try to push harder for states to take away the barriers to buprenorphine coverage and in particular the duration of treatment, because a lot of states will limit the duration of therapy. There are good data showing that if methadone is used less than 8 months, mortality increases in a population. It is about 5 to 6 months with buprenorphine. However, it will take at least 6 months before a mortality reduction is observed because of the spikes in mortality when people go off of treatment. With abstinence-based treatments, it would probably take two years before a reduction in mortality would be seen because of these spikes. Those data may be helpful, and perhaps CDC could play a role in trying to help alleviate the barriers. In relation to the Drug Enforcement Administration (DEA), he has always wondered if one of the barriers to provider uptake of buprenorphine is concern about the visits of DEA officers to clinics. In his view, the only way to effectively address this is not for people to carry 200 buprenorphine but that every provider carries a few. He thinks of it like he thinks about having someone on insulin or warfarin. It is nice to have diversity in a practice as opposed to just being an additional specialist. If a provider thinks that by having 4 or 5 patients on buprenorphine means they may get a visit from the DEA, just seeing that badge could be devastating to the morale of the front desk staff who may think that their doctor is in trouble; whereas, this would not be a huge surprise to a clinic that sees only buprenorphine patients. Most of his colleagues think that DEA visits are not necessary at all. However, if that is not an option, perhaps an unofficial statement that below a certain number of buprenorphine patients DEA would not visit.

Dr. Dowell indicated that they have discussed this with CMS and said she was happy to report that, at least at a staff level, their colleagues are on board. They do feel like they do not have great control over what happens in state Medicaid programs, but they have developed guidance for states on using parity to justify changing limits in buprenorphine. Regarding the DEA visits, she heard a lot of concerns from her clinical colleagues in New York City. She asked whether Dr. Noonan had discussed this with her colleagues at DEA.

Dr. Noonan replied off mic so we could not hear her in the back of the room and the recording did not pick her up very well.

Dr. Coffin said that to his knowledge they started these visits around 2009 or so, but to his knowledge it was not built into the DATA act. It was a DEA-level decision to start conducting these visits. It may be worth a discussion.

Dr. Green agreed that this is a healthy question to ask at this point, because there are so many other collaborators and partners sharing their ideas with CDC and other agencies that touch the problem of overdose and have an enormous impact in terms of law enforcement. It strikes her that there is a lot of room for policy evaluation in terms of their role in civil commitments and post-overdose outreach. In terms of policy questions, could prosecuting drug overdoses as homicides be preventive in an environment and how would that impact health seeking and Good Samaritan laws? Those kinds of policy questions appear to be ones that are important to CDC and also to share with and work with other partners to help understand and collect data on this.

Some new partners might be hospital systems and EDs. There is a striking study out of Yale to suggest that EDs can initiate buprenorphine post-overdose or post-other health seeking opioid screening tools in their environment and initiating care. This brings another capacity and set of partners to the table to augment a lot of these in the interim against the long-term goals, perhaps through professional associations or schools of medicine and then building structures that could augment the strategies and activities. They are very much affected economically and logistically, and the workforce is there that could draw a lot from what is being done by NCIPC. Regarding the criminal justice system, incarceration-related overdose deaths is a large contribution to the burden of deaths. It is known that there are likely to be multiple events and multiple missed opportunities. Whether it is a medium-term outcome to think about or another partner to think about secondary and tertiary prevention activities, it seems like another institution that touches this population where some of these medium-term outcomes can be more actualized.

Dr. Coffin suggested that at a minimum, they could encourage local health departments to connect with a naloxone program and try to get alerts when there is an increase in the number of overdoses being reported. Those data will appear within a month or two of fentanyl introduction into a community. If they catch this with non-fatal events, they can begin to disseminate messaging and hopefully lessen the impact of the introduction of fentanyl.

Dr. Dowell agreed that the naloxone program could be a good supplemental source. ESOOS is an enhanced state overdose surveillance system, which is now in 33 states. They also are using EMS naloxone reversals in ED syndromic data.

Dr. Noonan indicated that one of their colleagues at the Washington/Baltimore High Intensity Drug Trafficking Area (HIDTA) developed an overdose mapping tool that is now on the iPhone and Android platforms, the Overdose Detection Mapping Application Program (ODmap). A first responder can check in when they are at the site of an overdose. They are testing this in a few counties in Maryland and Florida is considering having the whole state use it. Right now it is just a tool and is not really reliable surveillance per se, but they have been able to identify clusters this way. The geocode is not specific enough to have an address, but this is a tool that can be faster and safer. CDC is piloting this and is trying to incorporate that into local emergency response systems.

Regarding the data, **Dr. Hedegaard** emphasized that they also need to be mindful of other opioids that are on the horizon. For example, there have been increases in deaths involving tramadol. In order to get ahead of the curve, perhaps they should be monitoring these newer opioids. Most drug overdose deaths are investigated by coroners and medical examiners (MEs), which leads to the issue of what drugs they are testing for, whether the appropriate tests are available, and if that information is recorded on the death certificate. NCHS and NCIPC are collaborating on some of this work, but state-level surveillance, research, and coroner/ME information should be available as well for a more accurate understanding of the drugs involved in drug overdose deaths.

Dr. Porucznik pointed out that one area in which CDC is recognized as a leader and expert is on the evaluation components. While something may be more clearly in SAMHSA's bailiwick such that they may be doing delivery, perhaps a role for CDC would be in helping to evaluate that. This would address checks and balance in the government, such that SAMHSA would not be evaluating SAMHSA. Showing that kind of partnership and working together might be welcomed by the public as well.

Dr. Dowell indicated that SAMHSA asked CDC to evaluate their naloxone program, which they are doing. CDC also is conducting an evaluation of MAT in different settings.

Dr. Greenspan asked Dr. Dowell to talk about some of the challenges they have had in terms of partnerships, what they see as the way forward, and how they plan to track what the agency is doing moving forward.

Dr. Dowell indicated that the biggest challenge is the one she mentioned earlier regarding the strong disagreement on the long-term outcomes, which surprised them. They thought there would be a lot of discussion about how to get there, but not what the long-term outcomes would be. It made sense, because people feel accountable for different outcomes and come from different perspectives. This required a lot of extra discussion with a particular group, but they have reached a point that they agree on the framing. It led to a lot of fruitful discussions about future collaborations in terms of some of the linkage to treatment issues. CDC has a Winnable Battles structure that began with Dr. Frieden, and opioids has become a Winnable Battle since he left. There are meetings about every three months with representation from different centers. At a high level, they will continue to talk about strategic planning and implementation. They are also having a series of smaller WGs. They will be collaborating with NCHHSTP on some of these issues on linking people to treatment and public safety in local communities. In the gap analysis, they identified a group that specifically addresses Question 2 posed to the BSC, and they probably will develop a white paper to articulate what they think CDC can add, and they will be involving SAMHSA at some point to get their thoughts and make sure they can collaborate on that moving forward. There is another WG that will deal with research questions across the agency.

Announcements /Adjournment

Christina A. Porucznik, PhD, MSPH
Chair, NCIPC BSC
Associate Professor, Department of Family and Preventive Medicine
University of Utah

Dr. Porucznik reminded everyone who joined the meeting via teleconference or Adobe Connect to send an email Ms. Lindley confirming their attendance. Participants in the room were instructed to complete their OGE Form 450: Confidential Financial Disclosure Report and submit it to Ms. Lindley. With no further business posed, Dr. Porucznik officially adjourned the meeting for the day.

Wednesday, September 27, 2027

Call to Order / Roll Call

Christina A. Porucznik, PhD, MSPH
Chair, NCIPC BSC
Associate Professor, Department of Family and Preventive Medicine
University of Utah

Dr. Porucznik called the twenty-second meeting of the NCIPC BSC to order at 9:00 AM on Tuesday, September 27, 2017. She requested that Mrs. Tonia Lindley, NCIPC Committee Management Specialist, call the roll.

Mrs. Lindley conducted a roll call of NCIPC BSC members and *ex officio* members, confirming that a quorum was present. A quorum was maintained throughout the day.

Advancing Implementation Science

Dr. Judy Qualters
Director, Division of Research Analysis and Practice Integration
National Center for Injury Prevention and Control
Centers for Disease Control and Prevention

Dr. Natalie Wilkins
Evaluation and Integration Team
Division of Research Analysis and Practice Integration
National Center for Injury Prevention and Control
Centers for Disease Control and Prevention

Dr. Qualters reflected on the discussion from the day before during which a lot of time was spent talking about strategies and the way NCIPC is moving forward on specific topics, such as suicide and prescription drug overdose. During this session, the plan was to take it up a level to address some of the discussion that began the previous day in terms of thinking about how to advance implementation of evidence-based programs and the science behind it to better understand why some programs work in one group but not another; why some programs may or may not scale up even though they are evidence-based; and the what, the who, the how, and the where of trying to put these programs in place. This is particularly relevant to DARPI because it is a cross-cutting division. Once programs are funded, DARPI is responsible for oversight and working with the ICRCs. They also have the state Core Violence and Injury Prevention Program (Core VIPP). Fact sheets about those programs were included in the BSC members' binders.

Last year, the Core VIPP programs moved into implementing strategies and policies, particularly on TBI, MV crash injury, IPV, SV, and CAN. To work with them, DARPI tried to bring the practice and research sides of the house together to figure out how to make things work. Along those lines, they have been working with the Core VIPP programs looking at shared risk and protective factors and trying to get an idea of what contextual things could make or break a program and intervention. One of the areas on which they have been focused regards how to operationalize systems thinking or a systems approach. With that in mind, she indicated that Dr. Wilkins would walk them through some of the concepts around this that DARPI has been talking about, and how they have been thinking about and are moving this forward.

Dr. Wilkins emphasized that the field of injury and violence prevention and the kinds of issues NCIPC addresses are very complex. Oftentimes, people shy away from using the term "complex" because it comes across as not preventable or not actionable. However, the issues they work on across the spectrum of injury and violence prevention (suicide, TBI, opioid overdose, CAN) are interrelated with one another and to other public health issues (obesity, infectious disease). Beyond public health, they are also interrelated with things like economic issues, employment, and access to employment opportunities. All of these issues are also changing and emerging over time. Just looking at the opioid overdose epidemic, there was a high level of prescription drug overdose and prescription-related opioids, but now there has been a shift toward higher rates of elicit opioids and heroin. Then fentanyl emerged on the scene.

One of the ways they have tried to work toward trying to chart a course for action in the context of this complexity is by developing evidence-based programs and models like the public health model to try to understand the different steps or stages they can go through to try to create a plan for prevention. One of the biggest challenges in public health more broadly, but certainly in injury and violence prevention, regards how to bridge the gap between the development and testing of prevention strategies and the assurance of widespread adoption. Because the field of public health is primarily concerned with population level impact, assuring widespread adoption is incredibly important when thinking about how to chart a course toward population level impact. Because of the gap between the strategies that have been tested in particular settings with particular populations and the ability to scale that up to achieve population level impact, an entire field of implementation and dissemination science, or translation science, was developed to try to bridge the gap.

A number of strategies have been utilized to try to bridge this gap, such as evidence-based program registries. There are a number of registries, such as Blueprints for Violence Prevention, CrimeSolutions.gov, and the National Registry of Evidence-based Programs and Practices (NREPP). However, there remains the issue with communities choosing not to or struggling to implement these evidence-based programs at a population level. In addition, an entire field of implementation science has worked on identifying and developing resources and tools to help with the better installation of evidence-based programs. The National Implementation Research Network (NIRN) housed at the University of North Carolina-Chapel Hill (UNC-CH) is one of the leaders in this field, having done a lot of work in this area to identify and develop resources to help foster the implementation drivers, or those things that have been shown to be helpful in ensuring the high-fidelity of evidence-based programs. These are things like coaching for those on the frontlines of implementation so that they feel more comfortable and confident in implementing programs of high-fidelity, or setting up organizational policies and regulations so that organizations are better able to ensure the high-fidelity adoption and implementation of evidence-based strategies. One of the challenges with this approach is that when an approach is studied in a particular setting with a particular population, it does not

always translate well to another context or another setting, or there is a mismatch between the original intervention and the new setting or population. Thus, another field has emerged that tries to determine what the essential elements or core components are of evidence-based programs that are key for the effectiveness of strategies and interventions, and the elements that can be adapted and changed to make the intervention fit more appropriately within local contexts and settings. A lot of work has been done in this area. It is tricky work and it is very hard. One of the questions that comes up regards whether the core components and elements are the same when the contexts or populations change, along with a number of other challenges in terms of adaptation science.

At the end of the day, there still has not been widescale adoption of evidence-based programs or population impact across the various topics of injury and violence prevention. One of the reasons for this is because in working toward identifying specific strategies and researching them under relatively controlled conditions or with high internal validity, the focus is really on only one piece of that complex issue or issues pertaining to injury and violence prevention. It is very important to understand the mechanisms and the specific programs that will work on a particular piece, but once that is put into the real world, it looks a lot more like this, which makes it tricky to achieve population-level impact:

One of the things DARPI has been working on along with the field is on conceptualizing and working toward implementing a more comprehensive approach to the issues by identifying evidence-based programs, practices, and policies across the social ecology and encouraging communities to implement multiple evidence-based programs across the social ecology. But challenging questions remain with regard to which combination of evidence-based strategies, when, for whom, and does that change over time? Even with a comprehensive approach that leverages evidence-based programs across different levels, there is still a high degree of complexity and a lot of questions that remain.

Instead of trying to control for this complexity, DARPI has been thinking about how to better understand the complexity and set up systems and processes to manage it better. One of the shifts they have had in thinking is expanding on implementation science to date to focus not only on how to set up contexts to better facilitate the implementation of evidence-based programs, but also how to better understand the broader systems within which the issues lie and how evidence-based programs can be used to set up more optimally functioning systems to lead to population level impact. That is, thinking about evidence-based programs and strategies

as opportunities within larger systems versus focusing just on those evidence-based strategies. DARPI is building off of the existing implementation science literature, practice, and knowledge and borrowing systems thinking principles and other types of approaches from other areas within and outside of public health, and has started to develop a model on the way of thinking about this. They have recently begun working with their grantees to start testing this out to see how it works. They have questions for the BSC about potential blind spots, opportunities and challenges around this approach as well.

One of the foundational principles DARPI has been thinking about in its work is differentiating between technical versus adaptive challenges. Technical challenges can be defined, even if they are complicated. They can be as complicated as building a rocket ship, but they are definable. The knowledge, skills, and proven solutions exist to solve the problem exist. Experts can be called upon to help solve the problem. Adaptive challenge can be hard to define and understand. Solving the problem requires ongoing learning and creation of new knowledge. There is no clear solution, given that different people hold different views. There may be no experts who can solve the problem. In reality, most of the issues in injury and violence prevention have both technical and adaptive aspects to them or lie somewhere in the continuum between the two. For example, one of the technical challenges in MV safety regards how to mitigate physical damage to the human body in a crash. One of the technical solutions for that technical problem is a seatbelt. Getting teenagers to use their seatbelts is a much more adaptive challenge. Some may say that the real issue is that teenagers have not fully-developed brains. They cannot understand or conceptualize the level of risk at which they are placing themselves when they do not wear their seatbelts. Others may say that teenagers just do not know how risky it is not to wear a seatbelt, so better education is needed. Still others may say it is because parents are not setting a good example and are not being good role models about this, so the solution is to focus on parents not being good role models. Some may say it is peer pressure. If a teen is in the car with several other teenagers, he/she may not want to wear a seatbelt because it is not cool.

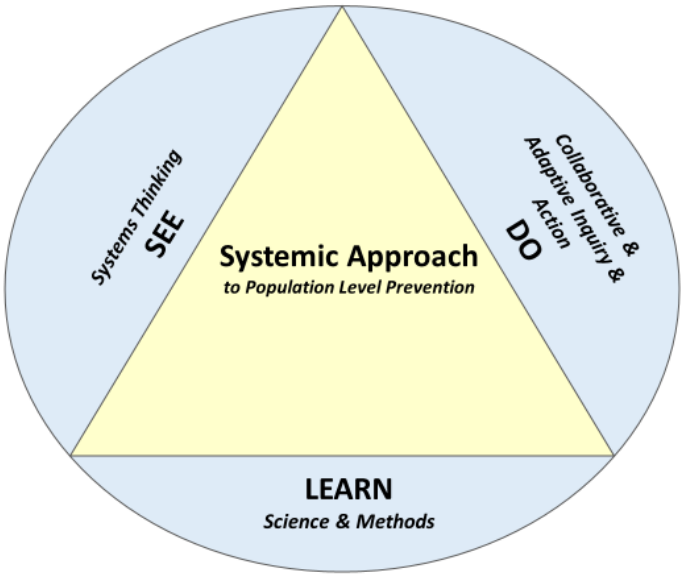
The answer is most likely yes to all of these things, or it depends, or it can change over time. Even understanding the nature of the problem is complex and very difficult, and there is no one right technical answer. This requires a shift in perspective and is the most important reason why it is helpful to recognize that the problems being addressed are more of a technical or adaptive challenge. This changes the way that one chooses to address the issue. In technical challenges, it is possible to move straight into action mode even if it requires finding the answer or the expert who knows. Because there is no single answer, it is necessary to shift more toward the learning focus to gather information, work with multiple partners, and bring all of the information to the table before moving into action mode and then engaging and being committed to the cycle of inquiry and action. Determining whether a challenge is technical, adaptive, or which side of that continuum they are trending toward is important because when a technical solution is applied to an adaptive challenge, there is a likelihood of unintended consequences.

A classic example of this is the “Cobra Effect.” This is an anecdote that was based on something that happened in the 1800s in India where there were far too many cobras. At the time, the British authorities decided that they were going to move into action mode and implemented a policy that they would pay people to bring in cobra heads as a way to crowdsource or outsource the cobra culling effort. The unintended consequence was that people began to breed cobras on cobra farms and bring in a lot of cobra heads, because it was a lucrative endeavor. Once the authorities realized what was going on, they abruptly stopped the program. This had another unintended consequence in that once the cobras were no longer profitable, the farmers let them go and then India ended up with way more cobras than they had

to begin with. This is an example of underestimating the complexity of an issue and a technical solution that is focused on action before learning is put into place.

Another example that has a happier ending is the ecosystem of Yellow Stone National Park. There was a history in the national parks in the beginning of the 1900s where, due to political pressure from the cattle and livestock industry, the US Fish and Wildlife Service (USFWS) engaged in a massive predator cull in which they killed off a lot of the wolves in national parks. This has a very detrimental effect on the ecosystem. The elk population became out of control and began eating all of the foliage and vegetation, which led to destabilization and erosion of the river beds and there were fewer birds. To try to fix with the problem that they had caused by culling the wolves, they then tried culling the deer and planting more plants, but nothing was sustainable or working. In the 1990s, an effort arose in which they decided to reintroduce the wolves back into the ecosystem. They mapped out the system of how wolves interacted directly or indirectly with the rest of the ecosystem, and found that once the wolves were reintroduced, the populations were back under control, the vegetation began to recuperate and build up, the birds moved back in, the beavers returned, and the banks of the rivers were much more stable. That one solution solved many problems throughout the ecosystem. This is the dream story for a systemic approach in which the complexity of the issue was identified, along with the high leverage solutions that were most likely to lead to multiple positive outcomes and have a large-scale impact on the problem.

This is the model that DARPI has started to develop and think about for better understanding of how to take a more systemic approach to injury and violence prevention from an implementation science perspective. This involves the three domains of systems thinking, collaborative and adaptive inquiry and action, and commitment to developing and adapting and adopting other science and methods that can help support this approach and learn how effective it is in leading to population level impact:

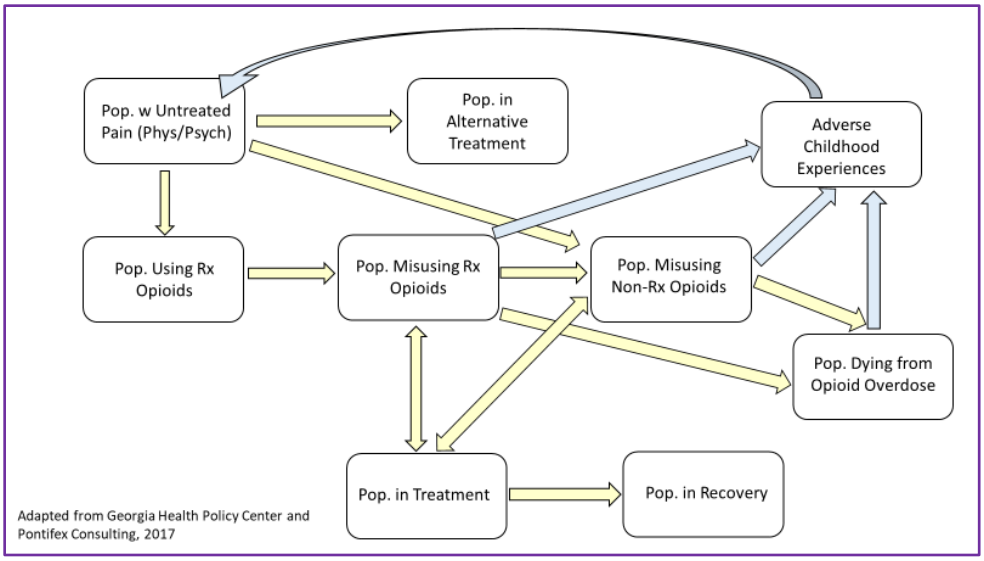


Systems thinking is about expanding the field of vision to determine all of the multiple component parts making up the system that are influencing the issue of interest, how those parts are related to one another, what those relationships looks like, and where there are opportunities to intervene between those component parts. This also means not falling prey to something that is very tempting in systems mapping, which is that anything can be connected to anything. While that can be a fun exercise, it is not very actionable. It is important to be disciplined and prioritize the components and relationships that are most likely linked to the behavior change of interest, and recognize that mapping out a system comprehensively does not mean that everything must be addressed in that system. The goal is to understand the potential unintended consequences and where the high leverage points might be in order to prioritize an action approach based on that.

Building a shared picture is also important. In order to have a comprehensive approach to an issue, multiple perspectives must be brought together. There also must be a commitment to ongoing learning and making a commitment to taking an adaptive approach versus a knowing and doing approach, because everything changes over time. The collaborative and adaptive inquiry and action is where systems thinking is put into action and ongoing learning occurs. This means working with communities and helping to build capacity around not only bringing their partners together for a one-time strategic planning effort, but also fostering trust and relationships with those people who are the most important stakeholders to remain continually engaged in the process of refining, learning, and moving into action mode and uncovering and challenging particular assumptions that there may be. Everyone has assumptions based on their own experiences about what is occurring with a problem and how it could be solved. Being open to uncovering those assumptions, realizing that other people who are involved with a problem may have different assumptions, and combining those together can result in a much deeper understanding about what could be occurring with the larger context of the issues of interest.

It also is important to recognize that there is a tremendous opportunity for growing and advancing the science and methods needed to support and study injury and violence from a systems and complexity-informed lens. The more traditional methods of implementation science and research can be leveraged in this type of approach and contribute to it, but it is necessary to expand beyond the traditional methods of research in order to understand and support a much more complex and systems-focused approach. The good news is that other disciplines have worked in this realm already from which some of the methods can be borrowed (e.g., system dynamics, network analysis, agent-based modeling, ethnography, case studies, social learning, scholar-practitioner models, participatory action research, realist evaluation, synthetic control method). Existing public health methods also can be applied in different ways, such as by combining epidemiological data with other forms of data to develop systems maps and identify high leverage points. This also offers the opportunity in the injury and violence prevention research community to develop new and innovative methods to support this approach and measure its effectiveness.

Dr. Wilkins shared a brief example of how DARPI has begun to apply this in its work with partners and grantees. One of DARPI's opioid overdose grantees in Georgia was given the opportunity to engage in a systems mapping exercise with their partners, and DARPI was able to participate in and contribute to that process. This is a partial map of the full systems map that they developed for illustrative purposes:



A multidisciplinary group of stakeholders from mental/behavioral health, public health, and public policy came together to develop a systems map of the opioid epidemic in Georgia. This simplified version of their systems map illustrates how they started by mapping out the physics of what opioid addiction looked like by combining their perspectives. They decided that the root of the opioid epidemic was a population within the state who had untreated physical or psychological pain. From there, they mapped out three main pathways this group potentially could take to manage that pain. The first was the population who received alternative treatments to opioids (yoga, physical therapy, et cetera). There is a population who self-medicates or uses elicit opioids such as heroin to treat their pain, as well as a population who is using prescription opioids that were prescribed to them by a medical provider. A certain percentage of the group using prescription opioids moved into the population misusing prescription opioids when they became addicted. From that, there is a certain population who may no longer have access to prescription medication who may move over to the elicit opioid or heroin group as well. A percentage of those two populations sadly will move into the population dying from opioid overdose.

There is also some proportion of folks who will move into treatment. Because substance use and treatment stakeholders were in the room, they were able to say that this needed to be a two-headed arrow in that there is not a one-way street to treatment because it is very difficult to address. A certain portion of this population will move into recovery. This is by no means meant to be an exhaustive model of the opioid epidemic, but it was beneficial for the stakeholders to map this out and see this pathway. It was interesting because there were people in the room, those from CDC included, with more of a violence prevention background. When they looked at this model, they recognized that it focused only on the current population struggling with opioids. Missing were the children of these folks and how they are integrated in and affected by this system. Therefore, they added the box for ACEs to depict the children of those struggling with opioid addiction and how that, in turn, creates a vicious cycle or feedback loop. It is known that when people experience ACEs, such as having a caregiver or parent who is addicted, they are much more likely themselves to experience trauma and physical/psychological pain later in life, which then feeds back into this system.

This is just one brief and simplified example of how DARPI has begun to work with some of its grantees to start thinking more systemically about the issues on which they are working, versus sticking within their specific silos or focusing on specific programs. The grantees DARPI is working with in Georgia now are tasked with creating a statewide plan for opioid overdose, and they will be using their systems model to help bring their partners together to now work on looking at the arrows to determine where the high leverage intervention points and major gaps are. That is, where do they have something in place to stop the flow of people from box to box, and where are the blind spots? Hopefully, this will enable them to identify opportunities to prioritize across the state and better understand how each of the partners can work together to contribute to a more optimally functioning system for population impact.

At this point, BSC members were invited to offer their feedback and thoughts on the following questions pertaining to the systems approach DARPI is taking:

- What are the potential benefits or challenges with moving toward a systems approach to injury and violence prevention?

- How do we develop evidence to better understand if this approach is creating impact?
  - What are the validity concerns/opportunities for strengthening this approach?
  - How do we tease out the "signal and noise" of what is working in the context of complexity?

- How can we engage the BSC in this work moving forward?

Discussion Points

To set the tone for this discussion, **Dr. Porucznik** pointed out that this presentation and discussion session in particular was a major opportunity for the BSC members to help seed possible connections and opportunities with the systems level approach and use their various areas of expertise to think about potential collaborations in order to achieve the goals of making population change. In addition to injury work, she teaches infectious disease epidemiology. For students, this is very overwhelming because they see all of the arrows and wonder how they could ever fix this. In reality, breaking only one or two of the arrows could be beneficial. Everyone of those connections represents an opportunity.

Dr. Gioia asked whether there are certain cardinal references around systems-focused implementation science that they might examine to expand their knowledge even further.

Dr. Wilkins responded that DARPI has been focusing internally on building its own capacity and knowledge around these types of approaches, and has been assembling the references and scholarly pieces. Following the meeting, they will send a list of those to the members.

Dr. Hedlund requested an example of the use of a systems approach that was able to arrive at some solutions, given that this had been largely very general.

Dr. Wilkins said she thought this was one of the challenges in the field of injury and violence prevention. Because they have not applied this type of approach, at least in its entirety, it is very difficult to pull examples. There are examples in other areas of public health. While there are examples in public health, they have not been considered or measured this way. Dr. Wright did a lot of work in Boston, which was experiencing a spike in youth violence-related injuries and deaths. They basically "threw the kitchen sink at it." There was huge momentum, folks were

gathering together, and something in that "secret sauce" of everyone coming together working on different aspects of the issue worked and they went down to zero deaths for youth-related violence. The problem was that nobody measured what was occurring along the way to track and map out how everybody was working on different parts of the system. An interesting lesson learned from that was that when they were successful, everybody wanted to take individual credit for it instead of crediting the comprehensive approach. That in and of itself is a very good lesson learned around being much more purposeful and explicit about how this approach takes everyone and no single angle is going to lead to population impact. It is about the collective work of the group, setting people's expectations up that way, and making sure they buy into that.

Thinking about the *Pediatric mTBI Guideline* as an example and how they would implement the recommendations across a broad number of providers to begin with and addressing the first question to bring those recommendations to bear, **Dr. Gioia** stressed that the benefits of systematizing and standardizing an approach based on evidence likely would have great benefits in terms of the outcome of reducing adverse effects. Using a standard tool to diagnose the problem and knowing the broad variability in a provider system in terms of background, time available to them, type of practice, et cetera, it is necessary to map out the problem. There is no way to address this problem otherwise, but he could see that the challenges would take a lot longer than the benefits. However, he saw no other way of going about it. In terms of the second question, it is known that providers/practitioners are not going to change unless there is a figurative "gun to their head" and the evidence to show that their patient's care will be improved. They have to incorporate a new behavioral routine. He was trying to conceptualize how to implement guidelines and the breadth of complexity involved. At least it would be an attempt to measure the effects by doing this. Providers could be surveyed to determine the barriers and benefits of implementing guidelines. He said that he was just thinking out loud about how this approach is critically necessary in order to create something effective with the implementation of guidelines.

Dr. Wilkins pointed out that this was a great classic example of a situation in which it is very tempting to consider the technical challenge. There are guidelines, there is an implementation structure (clinicians), the guidelines just need to be put in place and clinicians will do it, and everything will be solved. One example of this is handwashing guidelines for surgeons and the notion that having a safety checklist was a super technical solution to what was thought to be a very technical issue. The assumption was that surgeons would be given this checklist, they would use it, and infections would decrease. However, the "cowboy mentality" was not accounted for, "I am the professional. I am the expert. I don't need a checklist to tell me how to do my job." Therefore, it did not work. If people are not going to implement an evidence-based and effective strategy due to other contextual issues (values, assumptions, et cetera), it will not be effective. Even in mapping out the various challenges, how they relate to one another, and how they relate to the behavior sought, it is not possible to address every challenge. Therefore, it is necessary to determine which are the most high-leverage and most likely to lead to the preferred behavior. That might change across systems as well. A particular challenge in one system may not be the same in another system.

Dr. Greenspan said she loves this approach because the problem is very complex, but she wanted to think about taking it even a step further back. This approach assumes a certain evidence base and implementation. However, there are studies that have found that some things are not necessarily reproducible. A lot of guidelines do not have a strong evidence base. She thinks that sometimes a mistake is made in moving forward with implementation assuming that there is good solid evidence, and not necessarily going back to the evidence base. She

believes that they can build the evidence within the systems framework, but asked everyone to think about whether it is sometimes a disservice talking about an evidence base when there may be only one or two studies with strong internal but not external reliability and validity.

Dr. Frye said the lesson she drew from the two examples of the cobras and the wolves regarded what happens when outsiders or colonizers come into ecosystems, try to extract resources from it, take advantage, destroy, and then try to fix it. This is a very old observation that well predates systems thinking. This relates to community-based participatory research (CBPR) and community-engaged research (CEnR), and "Nothing About Us Without Us." Those are old observations and well-established principles that are worth reiterating here. She wanted to take a step even further back. Where is all of this pain coming from? Did it just suddenly appear? Was it geographically mal-distributed in an interesting way? What was the phenomenon that caused all of this pain? Was it the mis-marketing of an addictive medication by industry? The systems thinking and sociology side of her brain says it is the economic system. Whose economic system and economic interests were advanced by marketing a drug like this? While she understands and appreciates the systems approach DARPI is taking, a systems thinking approach goes much further upstream. If that is addressed, it will not happen again, at least in this country. It will happen in other countries as occurred with the tobacco industry. Specifically related to the first question, one of the big challenges is exactly what Dr. Greenspan said—the limited evidence and evidence of efficacy of these interventions in different settings. There are not enough resources to determine whether Green Dot or Bringing in the Bystander® work on an urban commuter campus like the City University of New York, which has 28 colleges; educates 250,000 fulltime students; and has over half a million matriculated in one way or another. These students do not go to fraternity parties, they are not on a land grant university, and they live at home. There is not enough information yet to know if it is an implementation issue, at least with SV prevention programming. For her, the major challenge is the need for many more resources to establish the evidence base and talking at this level about implementation. On a related note, one of the biggest problems with implementation of other evidence-based interventions in the field of HIV is resources. Trying to conduct an efficacy trial with $500,000 in direct costs a year over 3 to 5 years that is allocated to a community-based organization (CBO) that is not paying peer educators to implement an intervention does not work very well. With a range of $30 an hour to $10 an hour, implementation is not "apples-to-apples."

Dr. Wilkins thought this was a great point and indicated that this is one of the challenges in the field of injury and violence prevention given the evidence base, particularly in areas like SV prevention. There are clearly huge gaps and they are funding grantees to do something. DARPI funds 23 state health departments to do something in four topic areas. This is where they have leaned on the systems approach as a both/and approach. All of the grantees are required to implement evidence-based strategies or at least what is known from the evidence thus far, but they are attempting to make it a both/and approach by encouraging the grantees to think about the broader system and other potential leverage points. They have shifted toward shared risk and protective factors. How can they move upstream more efficiently to address some of the risk and protective factors that are known to be linked to multiple violence outcomes? How can they improve coordination of resources and services, which is known to be a protective factor for prevention of multiple violence outcomes? Where are there other leverage points in the system beyond evidenced-based programs?

Dr. Porucznik suggested that one thing academics and journal reviewers could do is think about how to get more information into the literature. In the early days of the opioid epidemic, Utah implemented many things at once. It was good for the people of Utah and probably saved some lives. But it did not help her get tenure, because with implementing many things at once, they could not measure the effects of different things and she had a lot of papers rejected because of that. They might wind up being their own worst enemies in the development of evidence if they are holding things to such a high standard. Was it the right thing to do to change policy, provide education, and hopefully save people's lives? Yes, it was. But, if the system is incentivizing piecemeal things to build the evidence base, maybe they are not really helping public health.

Dr. Vaca pointed out that in addition to the type of work described (systems science, systems dynamic modeling, ethnographic approaches) a mixed methods approach to the science and understanding here is highly viable. There a opportunity to bring in a qualitative and quantitative approach to the research to translate findings into pratice. There is an area of robust models available to them in mixed methods (convergent design, sequential designs, exploratory/explanatory designs) that can be leveraged to obtain the contextual information necessary and can feed into systems dynamic modeling like mental models. Thinking about mTBI in children and providers and the community, they could start with the providers to determine their mental models about what the guidelines mean, how to implement them, the benefits to everyone (physician, system, parents, et cetera) and gather them in a mixed methods approach. A lot of this is being done in health services.

Dr. Comstock said she thought at best, the systems approach is perhaps a valuable way to integrate basic research and implementation research and go further. However, she is concerned that at worse, it is going to draw resources away from the really important basic injury research for which NCIPC has always been known and that nobody else funds. To use an example from the great work of the NCIPC BSC on the mTBI pediatric guideline, it is very difficult to do the *Must*, *Should*, *May* because there is not an objective diagnostic tool or even gold standard universally agreed upon definition or very strong evidence to support or reject many of the modalities that clinicians are using. A lot of the basic science needed is still missing. As Dr. Hedlund pointed out the previous day, NCIPC is funding centers and working with many unfunded centers for the *EfC* when there is a lack of basic evidence needed to drive the interventions these centers should be trying to implement, nor is there a framework to collect the data needed to evaluate the interventions they do implement. She worries that the systems approach may be "putting the cart before the horse" and losing the focus on the basic research needed to drive the things that are required to make the systems approach successful. That is, a systems approach is awesome if there is basic science to drive the evidence to make it work.

Dr. Allegrante thanked Dr. Wilkins for the presentation, pointing out that it was further evidence that they are moving further along from the linear randomized controlled trial (RCT) design work that produces the evidence they are accustomed to calling the "gold standard" when, in fact, these problems are highly complex and a different set of methods is needed. There is a fairly deep literature in implementation science that dates back over a decade. He commended her for her review of a special supplement that they published in *Health Education & Behavior (HEB)* in 2013. Patty Mabry from the Office of Behavioral and Social Science Research and Bobby Milstein, who was at CDC for some time, edited a supplement with a series of papers on systems dynamic modeling in public health and health promotion. He suggested that Dr. Wilkins look at this because it includes some examples that people are looking for of how these methods, particularly systems dynamics modeling, have been used to understand complex problems across several areas of interest in public health. Clearly, this is not an issue that is

limited to injury prevention and control. He asked whether there is a group at CDC more broadly that is working on this and, if so, whether DARPI is part of it.

Dr. Wilkins replied that there is such a group at CDC and that has largely been headed by the Chief Evaluation Officer, Tom Chapel. He has done a wonderful job of convening round tables and groups focused on systems science, and has been working with some external systems science and collaborative learning SMEs to train the coalition of the willing to be systems thinking and adaptive learning coaches. There is now a cadre of folks across the agency trained in this type of approach, and DARPI has begun calling on their colleagues across different centers within the agency to help them when engaging with their grantees on this. This has been a great process of building internal capacity within CDC.

Bethany Miller (read into the record due to A/V issues with the bridge line) I have a few comments to share. I have been doing some version of systems thinking and implementation science for almost 10 years, mostly in child welfare and injury. I agree with Natalie's comments that it requires capacity-building and training at all levels, including from CDC and other funders' staffs to be able to foster this approach in the field. Second, there are definitely lessons learned from my view in child welfare and injury. The Child Safety Collaborative for Innovation and Improvement (CoIIN) has developed change packages of evidence-based and information strategies in falls prevention, suicide self-harm prevention, interpersonal violence, child passenger safety, and teen driver safety. Concrete examples of these start across the social ecological levels. A major challenge and opportunity is measurement. We have really struggled with measuring population level impact of these strategies, some of which are small and discrete. The importance of process measures in this approach is critical and will hopefully underscore pitfalls, like in the example handwashing and surgeons' perspectives on the checklist, which leads me to my final point. This approach requires a fair amount of resources, human and capital alike. States in the Child Safety CoIIN struggle with not having additional funds to fund this approach, which requires time and data, which cost money. Also, these states really benefit from having strongly available and accessible TA to maintain a focus on systems and fidelity to models.

Dr. Wilkins responded that DARPI works closely with the folks who do the CoIIN work through HRSA. A lot of the work that they are doing is very complementary to the work that DARPI's states are funded for through the core program. In terms of working toward trying to introduce this kind of approach in the scholarly realm, DARPI is editing a special issue in injury prevention that should be published in the spring of 2018. One of the papers being included in that issue is a full explanation of the CoIIN work and some of the methodological challenges around data to show population impact. CoIIN is doing some fantastic work, but there are some big challenges methodologically and resource-wise. They are working on one paper in collaboration with the Center for the Study of Social Policy (CSSP) which has worked with the Promise Neighborhood Initiative. The Harlem Children's Zone® (HCZ®) Healthy Harlem Initiative in New York City was shown to have high levels of effectiveness across multiple domains, and is a comprehensive systems-focused program. There was a scale-up initiative under the last Administration called Promise Neighborhoods. While there were some challenges with the scale-up of that approach, there were some great lessons learned about the key drivers for scaling up a more systems-focused initiative.

Dr. Qualters added that one thing DARPI has done at the state level is develop regional networks that include multiple state partners, injury centers, and national peer learning teams to bring folks together as a collective to think through some of these things versus them sitting out there on their own and trying to work through it. This is leveraging collective brain power, resources, and partnerships.

Dr. Coffin thought the opioid exercise from Georgia was a great example of where this approach can fit and, in this context, where because of a crisis they are forced to move well beyond the data, which is nearly non-existent in terms of what any of the interventions would do. Yet, with this model, they tapped into a major concern that many have about approaches to manage the opioid epidemic, which is to say that if opioid prescribing is seriously reduced and payers will not cover other treatment options, people get squeezed into a place they really do not want them to be. He assumed that was not the intent, but the model ends up demonstrating one of the major pitfalls of the current approach to managing opioids. That is the benefit of the mapping, but the challenge is that it identified something they have a really hard time affecting because increasing access to alternative treatments is more expensive than opioids to payers and an anathema to the current efforts in healthcare. He commended DARPI on this excellent exercise in the utilization of this approach.

Dr. Wilkins thought Dr. Coffin raised a really good point in that for any one of the boxes, an entire system of challenges and opportunities could be developed for each intervention point. One of the ways this was used beyond how it will be used for strategic planning across the state is that the Georgia Health Policy Center (GHPC), a non-government funded group in Georgia, took this systems map to the state Legislature to educate policy makers on the opioid epidemic. One of the lessons learned that came out of this was being wary that while resources need to be put toward the opioid epidemic, it is important to remember that the child welfare system is going to be part of it as well and their funding should not be cut. This illustrates how mapping out these pathways can be used for different reasons and different ways from a policy perspective, as well as thinking about potential challenges and opportunities within systems of care.

Dr. Gioia noted that as with all complex questions, a knowledge base is needed to move forward with a clinical or public health problem. However, it is also important to make sure that they not "let the perfect be the enemy of the good." Whether it is an opioid crisis with people dying or individuals whose brains are being rendered dysfunctional, some reasonable level of evidence must be found upon which interventions can be implemented. There will always be tension that one does not necessarily discount the other, and that is always a challenge. One issue is that with limited resources, it is challenging to determine priorities. He would argue that the multi-level approach is necessary and implementing programs that do not have the greatest evidence is challenging. He also suggested that sometimes their scientist minds overtake common sense. A p-value is not needed when someone is practicing in a helter-skelter manner. For example, the recommendation in the *Pediatric mTBI Guideline* to use a standardized age-appropriate tool to identify symptoms of this injury, that does not need a p-value associated. If a 6-year-old is asked whether they feel foggy in the head, they will not understand because that is not age-appropriate. Some of the things they are doing can move toward an implementation level. Behavioral people believe one of the reasons they are not being implemented is because of human nature, "I'm busy. I've got a routine that is already established. I don't have time to think about anything else despite the fact that that's a good idea." The behavioral side must always be taken into account. P-values are useful, but are not always necessary.

Dr. Austin noted that in political science and public policy, implementation goes way back. One of the first books he had to read in graduate school was, "Implementation: How Great Expectations in Washington Are Dashed in Oakland; Or, Why It's Amazing that Federal Programs Work at All" written by Jeffrey L. Pressman and Aaron Wildavsky in 1973.

Dr. Hedlund made a pitch for MV in all of this context. Based on the goal of seeking partners and how things work, he said he would wind up with opioids but would use alcohol as an example. Being stopped for drunk driving is very often the first way someone who has an alcohol problem is identified initially. This leads to diagnosis because the referral to an assessment can lead to treatment and control, because there is a judge and an external system of control that can help with treatment, recovery, and so forth. Many opioid users use alcohol as well. This is a potential partner to identify, diagnose, treat, and control. It needs some work because often on the roadside and in the courtroom, if one identifies alcohol, one forgets about the drugs because alcohol is far simpler to identify and treat in the judicial system and so forth. There is a push in traffic safety to add drug identification. If there was some support from CDC, that might help and might lead to a mutual benefit.

Dr. Allegrante cited "Maximum Feasible Misunderstanding; Community Action in the War on Poverty" by Daniel Patrick Moynihan, which was all about the failure to understand systems in the fight on poverty.

Related to the question regarding the evidence of whether this is working and getting back to the outcomes data, particularly around IPV and SV, **Dr. Frye** emphasized that the outcomes data are not good. When they do things, often there is an uptick because more people are reporting. They are on the cusp of possibly developing valid, reliable, long-term, university-based data collection systems through the mandate to conduct Title IX National Sexual Misconduct Campus Climate Survey (NSMCCS). They need to advocate that aspects of Title IX continue, because over time it offers the opportunity to examine trends in victimization and perpetration, and on some campuses, bystander intervention behaviors; and behaviors that legally meet the definition of sexual coercion, assault, rape but that are worded in ways that most people would not think that they are actually endorsing an item that meets those standards. It is critical to ensure that that Title IX line does not disappear.

It struck **Dr. Green** that Dr. Wilkins' presentation was a critical pitch for behavioral science in general in all of the work that they do. Many of them are researchers who have collaborators that include behavioral scientists, they are behavioral scientists, or have become behavioral scientists along the way. The heavy influence in behavioral science in the field of HIV has been critical for uptake in terms of the rigor of interventions, creation of collaborations, dissemination, implementation, and successes for the most part. For a long time, there has been no or very low incidence in some states. At the state level, it is important to encourage, invest in, and provide TA that would allow for efforts like this to emerge so that the potential unintended consequences could be thought about beforehand and mitigated. Every action has an equal and opposite reaction, so many aspects of public health work can be planned out in that collaborative way. On the side of the logic models that many of the grantees have to do are helpful places to start to think about the systems learning approach and theory to draw upon, or think about the behavioral theory that is driving an intervention. If something does emerge, there should at least be a guiding concept that is clear to everyone involved in the group on the grantee side. Having a team that incorporates more behavioral science and engaging in exercises like this at multiple times (beginning, midcourse, end) to ensure that everyone is on the same page can be beneficial in moving the science along.

Dr. Wilkins acknowledged that one of the greatest challenges right now regards how to partner with currently funded grantees who are already tasked with addressing injury- and violence-related issues in a way that helps build their capacity and ability to do this kind of mapping and engage in the ongoing iterative inquiry and action cycle. DARPI is partnering with DVP on the work in Colorado that Dr. Stone mentioned earlier. Colorado is a very high capacity state and is very well-positioned to start engaging in this kind of work, so it offers a great opportunity to learn about what it actually takes to work with a state partner to start to implement this kind of approach. A number of lessons have already been learned, even at the beginning of this work. While they think about the state being the stakeholder, really the state has been working with their local communities and engaging in a similar kind of trust-building rather than coming in from the outside and telling people what to do but working on a partnership level. There have been all types of behavior science and implementation-related lessons learned that are oftentimes not captured when engaging in this kind of work, but that are key drivers in ensuring that these kinds of approaches, evidence-based programs, and other things are implemented well and sustainably. This is a major challenge and something DARPI would like to have continued discussions about with the BSC as they work toward implementing this type of approach.

Dr. Porucznik said she thought engaging in these types of exercises may help them identify when they do not have the right people at the table, or when they are not thinking at the right level. She reflected on the conversation from the previous day about marijuana impacting not only Colorado, but also other states. The problem does not just stop at the border, yet the level at which policies are made is not necessarily the level at which the impacts are felt.

BSC Future Planning: Making the Most of Our BSC

Arlene Greenspan, DrPH, MPH
Associate Director for Science
National Center for Injury Prevention and Control
Centers for Disease Control and Prevention

Dr. Greenspan expressed her excitement about the energy in the room and the really good discussions over the past day and a half. The NCIPC BSC discussions have grown increasingly better over time, but she requested that they engage in some group think about experiences in other meetings or advisory groups the members may have had to incorporate their perspectives about how to continue the discussions in order for NCIPC to get more out of this process and to make it a good experience for the BSC members.

In terms of lessons learned from previous meetings, a large section was included in the binders to provide updates on all of the work NCIPC is doing. They tried to do this in different ways and more periodically through emails, newsletters, and SharePoint; however, due to the fact that the NCIPC is a FACA-chartered body, everything must be made public. Therefore, they went back to including the materials in the binders. They can post information on a periodic basis, but it would be helpful to better understand the level of information members would like in terms of updates from NCIPC and its divisions. There is a lot of great work underway and they want the BSC to be informed about it, but they also recognize that the members are busy people who do not have time to read everything provided in huge binders. All of the minutes from the meetings and WG reports are posted on the NCIPC BSC website. For example, the Opioid WG report was posted there and NCIPC made a point to inform people that it was there so that they could read it. The members received a copy as an email as well. With that in mind, Dr. Greenspan

requested feedback on how the members would like to receive information and general updates.

NCIPC is also interested in hearing feedback from the BSC members regarding the structure of how the BSC meetings are run. This is an advisory body and NCIPC wants to obtain and use the BSC's advice. While this meeting stimulated really good conversations, no action items emerged from it. The meetings often are set up to address the latest updates or greatest issues, but Dr. Greenspan sensed a lack of continuity from one meeting to another. She would like continuity in revisiting issues. For example, there was a great discussion regarding the systems approach. Should additional information and progress reports be provided about that during future meetings? How should repetitive issues be dealt with and action items developed that would be addressed in an ongoing manner?

This group used to be a broader advisory committee known as the Advisory Committee for Injury Prevention and Control (ACIPC), and it included practitioners. There are many reasons that the former CDC Director decided that the entire agency should have more academic-oriented BSCs, and all advisory groups were changed to BSCs. They have struggled since then to determine how to involve practitioners again. Should they make invitations to practitioners regarding specific topics to offer the practitioner point of view?

Discussion Points

Sharing Updates & Other Communications

- Some members were unaware of the NCIPC BSC website.
- Recipients of the email updates from the divisions find them to be extremely helpful:
  - Ensure that all BSC members are on the distribution lists for these updates, with the understanding that they will need to be posted on the website for the public as well.
  - Consider sending a quarterly email to BSC members to inform them of the items that have been posted on the website that will be relevant to upcoming BSC meeting topics.
- It seemed to some members that including the materials in the binder is a double layer of work if the information is provided on the website.
- Do not email 250 pages of materials to members the day before the meeting.
- In general, service on the NCIPC BSC is not a huge generator of messages. Therefore, emails from Ms. Lindley or Dr. Greenspan are probably important and related to travel or scheduling.

Structure of BSC Meetings

- Some themes that arose pertained to the desire for more focus on cross-cutting, systems, and breaking down silos issues.

- When the members have recommendations, it would be helpful to phrase them as such. For example, during this meeting there were a fair number of recommendations/action items pertaining to funding priorities, advocacy, et cetera:

    - Perhaps NCIPC could pull those out and bring the issues back to a future meeting.

    - Each member also could make a list of their own recommendations/action items as they review the minutes to ensure that their comments are captured accurately.

    - From the 80 to 100 pages of minutes, perhaps a high-level Executive Summary could be developed that could lead out the document.

    - There may be a meeting process approach that would help the members characterize and crystalize recommendations so that they are much clearer for NCIPC.

    - Maybe recommendations/action items and the members' endorsement (or not) could be summarized at the end of each discussion period similar to the way that is done during grant reviews.

    - Topics can be set up for discussion with particular action items that NCIPC wishes to lay out for the BSC to consider. The moderator for each session could be assigned to summarize potential recommendations/action items at the end of their session.

- The agenda-setting process for each meeting has been somewhat mystical. It would be beneficial to discuss how this is done, how it should be done, and who should do it:

    - Dr. Greenspan indicated that in the past, she and Dr. Cattledge have drafted an agenda, spoken with Dr. Houry, and then had a meeting with the Chair for feedback. Because this meeting was set up more quickly, that did not occur. In the past, there has been discussion about establishing a group to set the agenda. However, this is not permitted due to FACA rules. Dr. Cattledge indicated that the agenda-setting process could be done by the full BSC during the meeting, given that it would become part of the official record that would be publicized.

    - Meetings should have a recurring format that includes an agenda-setting session for the next meeting.

    - Potential agenda items for the next meeting:

        - Follow-up on the systems approach in terms of: NCIPC's focus areas, the areas of the body of science that are mature enough such that a systems approach could have a major effect now and which ones perhaps may need more maturation, how NCIPC plans to evaluate the systems approach to determine its success, an actual state health department's point of view,

CDC's interactions in this area with other agencies, more efficient ways to share this information

- Bring practitioners and state health department representatives to the table regarding other topics in order to hear some ground truth and outside ideas about the challenges they face in implementing interventions declared to be best-practices

- Perhaps a cross-cutting BSC WG could be established to develop and track action items that is comprised of members from BSCs across the agency, which may help centers to think more strategically and in a more unified manner in order to maximize government resources:

  - Perhaps the Chair of each BSC should serve as members. Representation from a unified body of all BSCs would help the CDC Director better understand the broad scope of the work of each center.

  - Dr. Houry noted that there is an Advisory Committee to the Director (ACD), but it does not include representation from the BSC. The ACD membership is vetted by the Director and may focus on CDC priorities they are trying to highlight versus broad representation. The ACD has many WGs that address topics of interest such as laboratory safety, ethics, and health disparities. Only about half of the centers at CDC have advisory committees, while some centers share a single advisory committee.

  - Dr. Cattledge thought it was a good idea to bring all of the BSC chairs together, but emphasized that this would have to be vetted through MASO. One thing they started in the past and might like to implement again would be to have representatives from the NCIPC BSC serve as liaisons on some of the other BSCs. They could then report back to the NCIPC BSC, which could help to identify ways to work together to leverage ideas, projects, and/or funding. She can reach out to the DFOs of the other BSCs to determine whether it would be possible to have a liaison on their committees.

  - A potential way to get started on this is that people from various BSCs may be traveling to Atlanta for the American Public Health Association (APHA) conference November 4- 8 2017. Perhaps they could take advantage of this proximity to have coffee informally.

- Consideration should be given to how the members can share opportunities to push the science. For example, could there be a "sandbox" in which to test out ideas and what resources are already available within the public space to do this type of thing?

Practitioner, State Health Department, and Other Involvement/Representation

- Practitioner involvement is an important anchor and would be a useful addition.
- BSC members who are one step removed from that may be challenged to understand the applications and specific needs that exist in practice.
- Inviting physicians based on topics may be somewhat fragmented and there is likely to be a lack of continuity across meetings, so a mixed group may be more beneficial.
- Remember that all politics is local. While they talk about upstream, it is also important to focus way downstream to make an actual difference in the population. Models offer focus and guidance around thinking, but practitioners could articulate the difference that this is/is not making downstream.
- It is beneficial to have physicians who also are researchers, because those who are not may not be as comfortable with some of the mandates of NCIPC.
- An ad hoc physician could be appointed to the BSC, perhaps from the Georgia Public Health Association (GPHA). It would be easy to get someone there and they could rotate each session depending on the topics.
- It would be beneficial to have some state health department representation on this committee as well, given that feasibility of translation is so important. Dr. Porucznik indicated that there is a member on the BSC who comes from the state health department perspective, Dr. Duwve, who was unable to attend this meeting in-person.
- BSC members can and should actively take information back to their colleagues outside of the meetings and bring their colleague's impressions back to the BSC. This group should be a two-way conduit.
- The voices of rural and tribal populations seem to be missing:
    - Although there is an *Ex Officio* BSC member from the Indian Health Service (IHS), this was not common knowledge to some members.
    - This may be a gap, although it is understood that federal partners do have to pay their own travel and accommodations and it may be a matter of what resources each agency can bring to bear. Dr. Greenspan recognized that compared to other CDC BSCs, NCIPC has a larger number of *Ex Officios* represented on t the BSC . It has been difficult to get Ex Officios to come in person since the Ex Officios agency is responsible for paying for travel.
    - .
    - Dr. Austin noted that timing is also crucial. If this had been at the beginning of the fiscal year, he would not have been able to attend.
    - NCIPC is assessing other remote means by which to attend BSC meetings, which may be better than teleconference attendance in terms of engaging more effectively. While they have tried Skype, there were more audio issues than during this meeting.

The other challenge to keep in mind is that the meeting must be accessible to the public.

- Dr. Johnson, the HUD *Ex Officio* member, offered to pitch any ideas to the Secretary that focus on health and housing and how to improve the health outcomes of those they house and support.

General Comments/Suggestions

- It is understood that sub-population groups have very different injury risks and interventions that work more and less effectively in sub-population groups. However, currently there is only one funded ICRC West of the Mississippi and it is within 100 miles of the Mississippi. There is not currently a geographic distribution of ICRCs that could best benefit the country. In the future, perhaps NCIPC could reconsider the geographic distribution of funded ICRCs

  - Dr. Greenspan indicated that there will be a listening session October 5, 2017 2:00 PM for which NCIPC will send out the number. This session pertains to the next NOFO that will be published for FY 2019 and they want to hear from folks about what they think in terms of issues such as geographic distribution.

  - Dr. Houry added that all ICRCs have been moved to the same cycle, which should help alleviate this. It is difficult to have geographic distribution when this can get unbalanced during one cycle and penalize other applicants in a different cycle.

- As conscientious taxpayers, concern was expressed by a BSC member that although flight information was provided on the travel forms they were requested to complete, a more expensive flight was booked because the external travel contractor does not work with the carriers selected.

  - Ms. Lindley clarified that she booked the travel, but because the carrier selected is not a carrier for the federal government, she was not permitted to use that carrier.

  - It was noted that members pay for their hotel and are reimbursed for that and per diem. They also could pay for their own flights and be reimbursed for that at a much lower expense than the government pays for the travel fair. NCIPC already does so much with so little, this would make more sense.

Public Comments

Christina A. Porucznik, PhD, MSPH
Chair, NCIPC BSC
Associate Professor, Department of Family and Preventive Medicine
University of Utah

During this session, **Dr. Porucznik** opened the meeting for the public comment period. With no public comments offered, she closed the public comment period.

Conclusion and Adjourn

Christina A. Porucznik, PhD, MSPH
Chair, NCIPC BSC
Associate Professor, Department of Family and Preventive Medicine
University of Utah

Dr. Porucznik thanked everyone for their attendance and participation in-person and via teleconference. She requested that members put a placeholder on their calendars for the next in-person meeting, which is proposed to be convened on June 19-20, 2018. It is possible that a teleconference will be scheduled in the interim, during which time the agenda for the next in-person meeting can be solidified.

With no further business posed or questions/comments raised, Dr. Porucznik officially adjourned the twenty-second meeting of the NCIPC BSC at 11:35 AM.

Certification

I hereby certify that to the best of my knowledge, the foregoing minutes of the September 26-27, 2017 NCIPC BSC meeting are accurate and complete:

Nov 30, 2017
Date

Christina A. Porucznik, PhD, MSPH
Chair, NCIPC BSC

Attachment A: Meeting Attendees

BSC Members

John Allegrante, Ph.D.
Deputy Provost
Teacher's College
Columbia University

Phillip Coffin, Ph.D.
Director of Substance Use Research
Center for Public Health Research
San Francisco Department of Public Health

R. Dawn Comstock, Ph.D.
Associate Professor
Department of Epidemiology
School of Public Health
University of Colorado at Denver

Kermit Crawford, Ph.D
Associate Professor in Psychiatry
Department of Psychiatry Psychology
School of Medicine
Boston University

Victoria Frye, Ph.D.
Associate Medical Professor
School of Medicine
City University of New York

Gerard Gioia, Ph.D.
Chief, Division of Pediatric Neuropsychology
Children's National Medical Center

Traci Green, Ph.D.
Associate Professor of Emergency Medicine and Epidemiology
Boston University

James Hedlund, Ph.D.
Principal
Highway Safety North

Christina A. Porucznik, Ph.D., M.S.P.H.
Assistant Professor
Department of Family and Preventive Medicine
University of Utah

Federico Vaca, M.D., M.P.H.

Professor and Vice Chair of Faculty Affairs
Department of Emergency Medicine
School of Medicine
Yale University

Ex-Officio

Rory Austin, Ph.D.
Chief, Injury Prevention Research Division
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Attachment B: Acronyms Used in this Document

Acronym	Expansion
AAN	American Academy of Neurology
AAPOR	American Association for Public Opinion Research
ACEs	Adverse Childhood Experiences
AI/AN	American Indian/Alaska Native
ASTHO	Association of State and Territorial Health Officials
ATSDR	Agency for Toxic Substances and Disease Registry
BJA	Bureau of Justice Assistance
BJS	Bureau of Justice Statistics
BRFSS	Behavioral Risk Factor Surveillance System
BSC	Board of Scientific Counselors
CAN	Child Abuse and Neglect
CBO	Community-Based Organization
CBPR	Community-Based Participatory Research
CSELS	Center for Surveillance, Epidemiology, and Laboratory Services
CDC	Centers for Disease Control and Prevention
CEP	Commission on Evidence-Based Policymaking
CEnR	Community-Engaged Research
CIOs	Centers, Institutes, and Offices
CMS	Center for Medicare and Medicaid Services
COD	Cause of Death
CoIIN	(The Child Safety) Collaborative for Innovation and Improvement
Core VIPP	Core Violence and Injury Prevention Program
CPS	Child Protective Services
CR	Continuing Resolution
CT	Computed Tomography
CoVDRS	Colorado Violent Death Reporting System
DARPI	Division of Analysis, Research and Practice Integration
DC	District of Columbia
DDPI	Data-Driven Prevention Initiative
DEA	(United States) Drug Enforcement Administration
DELTA	Domestic Violence Prevention Enhancement and Leadership Through Alliances
DFO	Designated Federal Official
DoD	(United States) Department of Defense
DoDSER	Department of Defense Suicide Event Report
DOJ	Department of Justice
DRH	Division of Reproductive Health
DVP	Division of Violence Prevention
E-Codes	External Cause of Injury Codes
EfC	*Essentials for Childhood*
ED	Emergency Department
EHR	Electronic Health Record
EMS	Emergency Medical Services
EIA	Energy Information Administration
ERPO	Extramural Research Program Office

Acronym	Expansion
ESOOS	Enhanced State Opioid Overdose Surveillance
FACA	Federal Advisory Committee Act
FBCI	(HHS Office of) Faith-Based and Community Initiatives
FOAs	Funding Opportunity Announcements
FORHP	Federal Office of Rural Health Policy
FY	Fiscal Year
GHPC	Georgia Health Policy Center
GPHA	Georgia Public Health Association
GRADE	Grading of Recommendations Assessment, Development and Evaluation
HHS	(United States Department of) Health and Human Services
HIDTA	High Intensity Drug Trafficking Area
HIV	Human Immunodeficiency Virus
HRSA	Health Resources and Services Administration
HSTSB	Health Systems and Trauma Systems Branch
ICD-10-CM	International Classification of Diseases, Tenth Revision, Clinical Modification
ICRC	Injury Control Research Center
ID	Identification
IHS	Indian Health Service
IPV	Intimate Partner Violence
IOM	Institute of Medicine
IRB	Institutional Review Board
IVPN	Injury and Violence Prevention Network
JAMA	*Journal of the American Medical Association*
LGBTQ	Lesbian, Gay, Bisexual, Transgender, Queer/Questioning
MASO	Management Analysis and Services Office
MAT	Medication-Assisted Treatment
ME	Medical Examiner
MOU	Memorandum of Understanding
mTBI	Mild Traumatic Brain Injury
MV	Motor Vehicle
NAASP	National Action Alliance for Suicide Prevention
NAS	Neonatal Abstinence Syndrome
NAS	National Academy of Sciences
NCBDDD	National Center on Birth Defects and Developmental Disabilities
NCEH	National Center for Environment Health
NCHHSTP	National Center for HIV/AIDS, Viral Hepatitis, STD, and TB Prevention
NCHS	National Center for Health Statistics
NCIPC	National Center for Injury Prevention and Control
NCSL	National Conference on State Legislatures
NCVS	National Crime Victimization Survey
NGO	Non-Governmental Organization
NHIS	National Health Interview Survey
NHTSA	National Highway Traffic Safety Administration
NICHD	National Institute of Child Health and Human Development
NIRN	National Implementation Research Network
NISVS	National Intimate Partner and Sexual Violence Survey
NOFOs	Notices of Funding Opportunities

Acronym	Expansion
NREPP	National Registry of Evidence-based Programs and Practices
NSDUH	National Survey on Drug Use and Health
NSF	National Science Foundation
NSFG	National Survey of Family Growth
NSMCCS	National Sexual Misconduct Campus Climate Survey
NSSP	National Syndromic Surveillance Program
NVDRS	National Violent Death Reporting System
OD	Office of the Director
ODmap	Overdose Detection Mapping Application Program
OGS	Office of Grant Services
OMB	Office of Management and Budget
ORCU	Opioid Response Coordination Unit
ORM	Office of Research and Methodology
PDMP	Prescription Drug Monitoring Program
PDO	Prescription Drug Overdose
PfS	Prevention for States
PTSD	Post-Traumatic Stress Disorder
QDRL	Questionnaire Design Research Laboratory
RCT	Randomized Controlled Trial
RMTLC	Rocky Mountain Tribal Leadership Council
RPE	Rape Prevention Education
RWJF	Robert Wood Johnson Foundation
SAMHSA	Substance Abuse and Mental Health Services Administration
SBIR	Small Business Innovation Research
SDOH	Social Determinant of Health
SDP	Surveillance Data Platform
SEM	Social-Ecological Model
SME	Subject Matter Expert
SOW	Scope of Work
SV	Sexual Violence
TA	Technical Assistance
TBI	Traumatic Brain Injury
THC	Tetrahydrocannabinol
UNC-CH	University of North Carolina-Chapel Hill
US	United States
USFWS	US Fish and Wildlife Service
WBDQS	Web-Based Data Query Systems
WG	Working Group
WISQARS™	Web-based Injury Statistics Query and Reporting System
YEA	Youth Engaged for Action
YRBS	Youth Risk Behavior Survey
YVPCs	Youth Violence Prevention Centers