NCIPC Board of Scientific Counselors

December 4-5, 2019

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

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Thirty-Second Meeting
December 4-5, 2019
Chamblee Campus, Building 106, Conference Room 1-B
Atlanta, Georgia 30341

Summary Proceedings

The thirty-second meeting of the National Center for Injury Prevention and Control (NCIPC, Injury Center, Center) Board of Scientific Counselors (BSC) was convened Wednesday, December 4, 2019. The BSC met in open session in accordance with the Privacy Act and the Federal Advisory Committee Act (FACA). Dr. Victoria Frye served as Chair.

Day 1: December 4, 2019

Call to Order / Welcome

Victoria Frye, DrPh, MPH
Chairperson, NCIPC BSC
Associate Medical Professor
Department of Community Health and Social Medicine
City University of New York School of Medicine
City College of New York

Dr. Frye called the thirtieth-second meeting of the NCIPC BSC to order at 9:00 AM Eastern Time. She thanked everyone for their time and commitment to injury and violence prevention. She acknowledged how busy everyone is and expressed appreciation for them taking time out of their schedules to participate in this important committee that provides advice to CDC and the leadership of NCIPC on its injury and violence prevention research and activities. She also thanked and welcomed members of the public in the room and listening on the phone and via Adobe® Connect for taking time out of their busy schedules to participate, expressing appreciation for their interest and engagement. She indicated that there would be a time for public comment from 3:35 to 4:05 PM and that the operator would provide instructions for anyone wishing to make a public comment at that time. She expressed gratitude to the incoming new and returning BSC members, and requested that they introduce themselves and state their affiliations and areas of expertise.

Roll Call / Meeting Logistics

Mrs. Tonia Lindley
NCIPC Committee Management Specialist
National Center for Injury Prevention and Control
Centers for Disease Control and Prevention

Mrs. Lindley called the role at the beginning of the meeting and each time the group returned from breaks and lunch. A quorum was determined to be present throughout the meeting. The

attendees are listed in Appendix A at the end of this document. In addition, Mrs. Lindley reviewed housekeeping/logistics, including emergency evacuation procedures.

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

Dr. Greenspan explained that for the day's meeting, Stephanie Wallace from Cambridge Communications would be serving as the Writer/Editor to capture the proceedings of the meeting for the minutes. Minutes of the meeting will become part of the official record and will be posted on the CDC website at www.cdc/gov/injury/bsc/meetings.html. She also pointed out that Carl, the audio technician, would be making an audio recording for archival purposes and to ensure accurate transcripts of the meeting proceedings. She requested that before speaking, participants announce their names in order to be documented correctly in the minutes. In addition, she expressed gratitude to Victor Cabada for running Adobe Connect to assist with presentations and facilitate the discussion. Dr. Greenspan requested that during the discussion period, BSC members and *Ex Officios* on the phone use the hand feature on the Adobe® screen to signify that they have a comment or question or use the chat box to add a relevant comment and that those in the room turn their name tent vertical. She noted that Dr. Frye would call upon speakers in the order that she received requests, and would intersperse comments on the phone with those in the room.

Approval of Last Meeting Minutes

Dr. Frye referred members to the copy of the minutes provided in their binders from the July 16, 2019 NCIPC BSC meeting. Dr. Liller indicated that there is no longer a Department of Community and Family Medicine at the University of South Florida, which needed to be corrected on the roster, and that her name was misspelled on Page 18 of the minutes. With no other revisions proposed, Dr. Frye called for an official vote.

Motion / Vote

Dr. Whitaker made a motion, which **Dr. Crawford** seconded, to approve the July 16, 2019 NCIPC BSC meeting minutes. The motion carried unanimously with no abstentions.

NCIPC Update

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

Dr. Houry welcomed NCIPC BSC members and expressed her gratitude for their time and commitment to sharing their perspectives and advising NCIPC on its work. She then spent a few minutes providing an NCIPC update. While NCIPC is deeply committed to numerous injury and violence topics, an intentional focus was placed about two years ago on three priorities that are high-burden, high-impact, and preventable: Opioid Overdose Prevention, Suicide Prevention, and Adverse Childhood Experiences (ACEs). Dr. Houry highlighted some of NCIPC's activities

and advancements in each of these areas since the last BSC meeting, and provided organizational updates.

In mid-August, CDC began investigating cases of serous lung injuries in people with a history of vaping or e-cigarette use. Shortly after that, NCIPC and the National Center for Chronic Disease Prevention and Health Promotion (NCCDPHP), where the Office on Smoking and Health (OSH) is located, began co-leading a lung injury emergency response. In mid-September, CDC activated its Emergency Operations Center (EOC) to provide better resources and staffing to this investigation. As of November 20th, there were 2290 cases and 47 deaths in 25 states. Updates are posted on the website approximately every two weeks. Several weeks ago, a *Morbidity and Mortality Weekly Report* (*MMWR*) showed evidence of vitamin E acetate at the primary site of injury within the lungs. This is the first time that a potential toxin was detected. More research is still needed to determine whether this association is causal. Dr. Houry emphasized how proud she is of how NCIPC staff have responded to this emergency investigation. Unlike many of CDC's infectious disease centers, NCIPC does not have a history of leading large-scale responses such as this. Everyone stepped-up to help support this response, which has been very challenging given that NCIPC staff already are standing up large overdose programs and working on suicide prevention. More than 55 NCIPC staff members have volunteered for the response, including key leadership positions. It is unclear how long the response will continue, but NCIPC anticipates staffing through the end of the year and into 2020.

In September, NCIPC officially kicked-off its "Overdose Data to Action (OD2A)" program. This program is going to provide over $900 million in funding to states over a 3-year period, with the focus being to help end the opioid overdose epidemic. The funding will be allocated to states and, for the first time, localities as well. OD2A includes a surveillance component that seeks to obtain fatal and non-fatal data more quickly and that also emphasizes innovation. There also is a prevention component that includes strengthening Prescription Drug Monitoring Programs (PDMPs), providing support to providers and health systems, and enhancing linkages to care.

NCIPC released the first of two *Vital*signs™ in August titled, *Life-Saving Naloxone from Pharmacies: More dispensing needed despite progress.* Some of the key findings included that the number of naloxone prescriptions dispensed doubled from 2017 (N=270,000) to 2018 (N=556,000), but only 1 naloxone prescription is dispensed for every 70 high-dose opioid prescriptions nationwide. The naloxone dispensing was also 25 times greater in the highest-dispensing counties than the lowest-dispensing counties, and rural counties were nearly 3 times more likely to be a low-dispensing county compared to metropolitan counties.

The Surgeon General, Vice Admiral (VADM) Jerome M. Adams, MD, MPH, and Dr. Houry published a commentary in the *Annals of Emergency Medicine* on the role of emergency physicians and staffing in the opioid crisis. This commentary focused on appropriate prescribing practices around opioids, training residents to successfully deal with patients with opioid use disorder (OUD), and improving naloxone distribution. They also were able to tape a video segment for *Medscape* on the importance of naloxone.

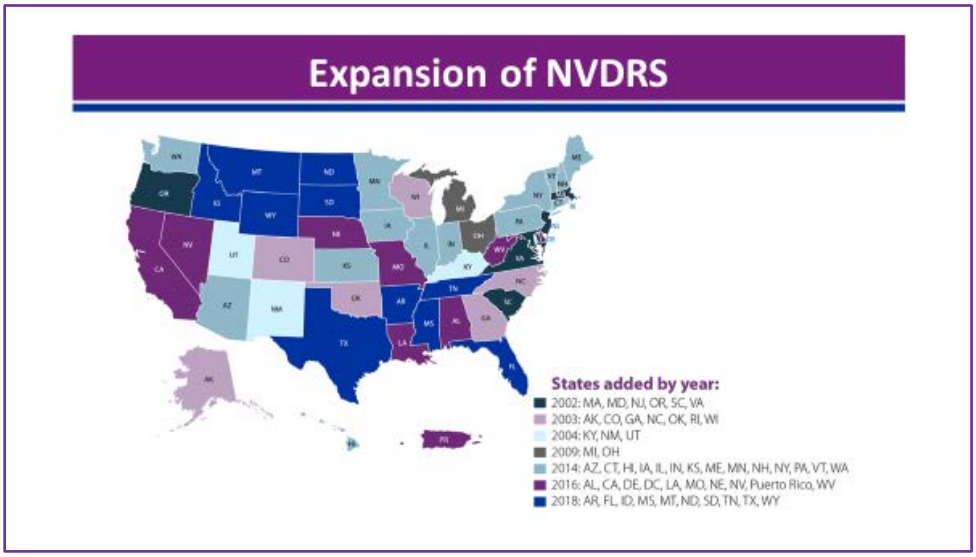
Dr. Debbie Dowell, NCIPC's Lead opioid subject matter expert (SME), assisted the Department of Health and Human Services (HHS) with the development of the *HHS Guide for Clinicians on the Appropriate Dosage Reduction or Discontinuation of Long-Term Opioid Analgesics*, otherwise known as the *Tapering Guide*. In addition to the development of the guide itself, Dr. Dowell and others worked on a *Journal of the American Medical Association* (*JAMA) Viewpoint* titled *Patient-Centered Reduction or Discontinuation of Long-term Opioid Analgesics:*

The HHS Guide for Clinicians to coincide release with the HHS publication to translate this for clinicians. Some of the key messages are that opioids can be tapered safely and effectively, but should not be tapered rapidly or discontinued suddenly due to the risk of significant opioid withdrawal, and clinicians should work with patients to review the risks and benefits of current opioid therapy and decide if tapering is appropriate.

In September, NCIPC hosted a site visit for 12 of its opioid research grantees. The goal of these awards was to expand and advance the understanding of what works for overdose, and improve health departments' ability to implement and improve interventions. These awards focused on topics such as integrating the public health and public safety approach, enhancing the initial linkage of those with OUD to treatment, enhancing continued engagement with treatment programs, improving prescribing behavior to improve naloxone access, or evaluating the effectiveness of prescribing practices or clinical decision support on opioid prescribing and pain management.

With respect to NCIPC's suicide prevention work, there is a Suicide Prevention Team in the Division of Injury Prevention (DIP). There are now 7 people on that team, with Dr. Deborah Stone serving as Team Lead. The team is working on the development of a strategic plan to guide activities across NCIPC. A number of ongoing and new activities are being undertaken as part of this work, including emergency department (ED) surveillance of non-fatal suicides in 10 states; expanding syndromic surveillance in Colorado's Tri-County Health Department (TCHD); building state capacity for suicide and opioid overdose prevention where there is overlap in states such as Colorado, Maine, and West Virginia; providing assistance to two territories following hurricanes in recent years; continuing efforts to work with veteran-serving organizations (VSOs) on their prevention efforts; and contracting with Georgia Institute of Technology (Georgia Tech) to develop machine learning modules for forecasting suicide and overdose fatality rates.

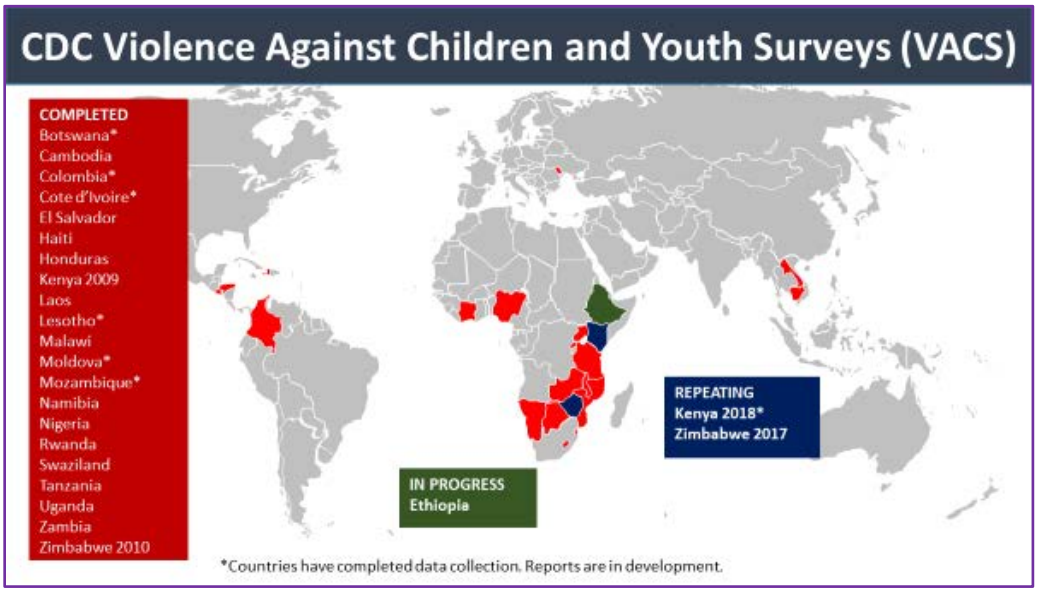
NCIPC was extremely grateful in 2018 to receive a Congressional Appropriation that fully funded the National Violent Death Reporting System (NVDRS). This is a critical data system to help understand and describe the key circumstances contributing to suicide deaths. This allowed NCIPC to expand NVDRS to all 50 states, the District of Columbia (DC), and Puerto Rico (PR). This graphic shows the years that states were added:



NCIPC expects to have data from all 50 states in 2020. This Fall, NCIPC released an updated annual surveillance summary in the *MMWR*. This is a very important step for the field, given that it will allow each state to have its own data to focus on preventing suicide deaths and there will be a true national picture for the first time.

The first week in November, NCIPC released its first ever *Vital*signs™ on ACEs titled*, Adverse Childhood Experiences (ACEs): Preventing early trauma to improve adult health.* This was a significant undertaking for many NCIPC staff members, and Dr. Houry congratulated them for this publication. Some of the key findings of this report are that nearly three-fifths of adults among the 25 states in the study reported having at least 1 ACE, and approximately 1 in 6 adults experience 4 or more ACEs. This is really important because in terms of prevention, adults reporting the highest level of ACE exposure had increased odds of having chronic health conditions, depression, smoking, heavy drinking, and socioeconomic challenges such as current unemployment compared with individuals with no ACE exposures. The study found that preventing ACEs could have reduced the number of adults who have heart disease by as much as 13% and depression by as much as 44%.

NCIPC also engages in global violence prevention work and has had a significant amount of interest in its Violence Against Children Surveys (VACS). The VACS are led by CDC as part of the Together for Girls Partnership. The survey is a measure of physical, emotional, and sexual violence (SV) against girls and boys. NCIPC works with countries around the world to administer these surveys to help them guide programs and policies to prevent violence before it starts. This map shows completed, underway, and planned VACS:



A total of 24 surveys are shown here, with the red showing data collection that has been completed, green in the planning stages, and blue where the VACS have been repeated. NCIPC is very excited to have had the opportunity to move into Latin America in the past two years. The first two countries in Latin America to release reports were Honduras and el Salvador.

While it is fantastic to have this work globally, NCIPC does not have the same level of data in the United States (US). Domestically, data are not collected directly from children and youth instead of from adults or caregivers. There also are no data that assess multiple forms of violence, such as SV, bullying, or teen dating violence (TDV) by multiple perpetrator types. This would help to understand the contextual details surrounding these violent experiences instead of just whether or not they occurred. The VACS is done in a way to maximize privacy from a potential caregiver or school care perpetrator. Thus, VACS will be piloted domestically to fill some of these data gaps and collect data on all of NCIPC's priority areas such as ACEs, opioids, and suicidal behavior. NCIPC convened a group through some work with the Robert Wood Johnson Foundation (RWJF). The primary feedback received was that a feasibility study would be necessary, so the plan is to pilot VACS at a state or city level with an aim to collect data in an urban and rural environment and pilot domestic adaptations of this global methodology.

In 2019, Congress appropriated $9 million to NCIPC for the Injury Control Research Centers (ICRCs) with which 9 ICRCs were funded at approximately $833,000 each for a 5-year cycle. This marks the first time that all of the ICRCs are on the same cycle. This provides a nice opportunity to enhance collaboration between the ICRCs, which are:

- ❑ Columbia University
- ❑ Emory University
- ❑ Johns Hopkins University
- ❑ The Research Institute at Nationwide Children's Hospital
- ❑ University of Iowa
- ❑ University of Michigan
- ❑ University of North Carolina
- ❑ University of Pennsylvania
- ❑ University of Washington, Harborview Medical Center

NCIPC hosted the 2019 Core State Violence and Injury Prevention Program (Core SVIPP) and ICRC Joint Awardee meeting in September, which was attended by 130 researchers and state, local, and federal public health professionals. The theme was bringing research and practice together and included topics such as research to practice, practice to research, translation products, enhancing surveillance and data systems, and shared risk and protective factors.

In terms of the budget, NCIPC is currently operating under a Continuing Resolution (CR). Hopefully, there will be more guidance on how to administer the budget by December 20, 2019. The Fiscal Year (FY) 2020 House Mark had some increases for items such as suicide and firearm violence, while the Senate Mark included some increases for suicide and ACEs. When NCIPC receives its official budget, they will release it and have a webinar that focuses on opportunities to continue its great work. The following table provides an overview of the proposed FY2020 President's Budget and House and Senate Marks compared to the FY 2019 Enacted Congressional Appropriation:

Budget Activity/Description	FY 2019 Enacted Congressional Appropriation	FY 2020 President's Budget	FY 2020 House Mark	FY 2020 Senate Mark
Injury Prevention and Control (Total)	**$648,559,000**	**$628,839,000**	**$697,559,000**	**$663,559,000**
Intentional Injury	$102,730,000	$102,730,000	$144,730,000	$117,730,000
NVDRS	$23,500,000	$23,500,000	$25,500,000	$23,500,000
Unintentional Injury	$8,800,000	$6,737,000	$11,800,000	$8,800,000
Injury Prevention Activities	$28,950,000	$20,293,000	$28,950,000	$28,950,000
Opioid Abuse and Overdose Prevention	$475,579,000	$475,579,000	$475,579,000	$475,579,000
Injury Control Research Centers	$9,000,000	$0	$11,000,000	$9,000,000

NCIPC's reorganization was being announced during the last BSC meeting. This is the new organization chart that now includes the Office of Strategy and Innovation (OSI) and the Office of Informatics (OI). Dr. Hour indicated that the Directors of each would be speaker later about their visions and what the offices will be doing. DIP now houses unintentional injury topics, while the new Division of Overdose Prevention (DOP) focuses on emerging drug threats and overdoses as a whole. Dr. Houry said that she considered this restructuring to be more of an enhancement versus a large reorganization, and that it would allow NCIPC to have adaptability and capacity for growth, maximize collaboration, and strengthen data and surveillance coordination for the future. As part of the reorganization, over 400 members were moved. While this was a major endeavor, they felt like it was very important to co-locate teams. NCIPC does continue to grow. Since July 2019, they have onboarded 60 new staff members and have brought on more than 100 new staff members since January 2019. This means that NCIPC now has over 500 staff members. They are very excited about the new talent, energy, and disciplines throughout NCIPC. This is a great opportunity to meet the staffing demands of the opioid epidemic, as well as other urgent and violence-related issues. Dr. Houry ended by extending her sincere thanks to everyone for the work they do within NCIPC and the field, and their valuable guidance in moving all of this work forward.

Discussion Points

Dr. Greenspan acknowledged that Dr. Houry was recently appointed to the National Academy of Medicine (NAM), which is a great honor, and expressed appreciation for all that Dr. Houry has done toward moving NCIPC forward.

Dr. Compton requested further information about how NCIPC is approaching the intersections among the three priorities. For example, ACEs have potential impact on addiction generally and opioids specifically. Whereas, the overlap between suicide and overdose is somewhat murky and difficult to disentangle.

Dr. Houry indicated that Dr. Jones could speak further about how the OSI is operationalizing some of this, because they will oversee some of the cross-center coordination. In terms of the topical intersections, with ACEs they are considering the opioid overdose epidemic and are funding communities like Martinsburg, West Virginia to implement ACEs prevention in schools and communities through trauma-informed care training to ensure that school professionals and law enforcement are aware of it. For example, law enforcement can adopt a classroom and go in to normalize public safety so that children know to call 911. Many children probably have had some ACEs from calling 911 if they have parents who are misusing substances. This helps law enforcement be part of the community, identify children at risk for ACEs, and refer them to afterschool programs. They are using community organizers in Detroit, Cleveland, and Cincinnati to determine what is actually occurring in the community and what programs are available; how to engage the community in ACEs, childhood trauma prevention, and drug overdose prevention; and making sure people are aware of those resources and refer to them. In some of NCIPC's Technical Packages pertaining to violence prevention, they have tried to show the link between ACEs and drug overdose prevention and are trying to work more closely with states and local communities in implementing them. In terms of data collection, suicide prevention and drug overdose both use the NVDRS platform. There are some different variables for unintentional drug overdose prevention, while suicide tries to determine what led to the suicide death and what could have prevented it, such as whether the person had been in treatment recently. They published a paper a couple of years ago on chronic pain that used the NVDRS to examine suicide deaths.

Dr. Frye asked Dr. Houry to elaborate on the Office of Policy and Partnerships.

Dr. Houry indicated that the Office of Policy and Partnerships is involved in a lot NCIPC's legislative work and issues management. For example, they help to oversee Congressional briefings and reports to Congress. They also do a lot of partnership work, particularly at the center-level. For example, they build and facilitate partnerships and perform some of NCIPC's pilot work. The VSOs program first began in Dr. Solhtalab's office to work on suicide prevention and then engaged the divisions and SMEs after that.

Ms. Peeples added that a third group within that office is the Health Policies Team, who focus on big picture health policy work and also are engaged in a lot of NCIPC's performance measurement management, budget development, and other macro-level policy efforts.

Dr. Liller inquired as to whether Dr. Houry envisioned that future funding opportunities would ask for a focus on the intersection between the topic areas of ACEs, suicide, and opioids. She also wondered whether there were any opportunities to address firearm violence prevention in any of these topic areas.

Dr. Houry indicated that their violence R01s often do focus on multiple forms of violence. Some of this depends upon how directive NCIPC's Congressional language is. Some of NCIPC's work with states examines where shared risk and protective factors are in the overlap. Although NCIPC has had significant increases in its budget, it is still disproportionate with respect to the burden of the morbidity and mortality of injury prevention and violence in our nation. NCIPC looks for ways to leverage topics and find synergies where they can. Plus, it makes sense. In terms of firearm violence prevention, NCIPC has been doing a work through the NVDRS. Each year in the surveillance summary, they release information on suicide and homicide deaths that involved firearms. They published a *Pediatrics* paper two years ago that examined both injuries and fatalities and children in circumstances with firearms. They also have the School-Associated Violent Death Surveillance System (SAVD-SS) that released a report in the past

year examining school-associated violent deaths with a focus on perpetrators and multiple victim incidents. Regarding specific R01s on firearms, they look to the appropriations. The House Budget has $25 million, but the budget will determine whether there are specific R01s. Some of the ICRCs work on youth violence and other firearm violence prevention. It depends upon whether there is a specific line.

Dr. Cunningham recalled that Dr. Houry made mention about other drugs, and requested further information about the plans to address these in the future.

Dr. Houry replied that NCIPC is doing several things with regard to other drugs. NCIPC has taken over core efforts for CDC, part of which coincided with the vaping response, and is currently working on a strategic plan for cannabis. Consideration is being given to what data collection is needed and what the health impacts are, and this effort will be housed in the DOP. The OD2A grants include a surveillance component to track methamphetamine and psychostimulants as part of NCIPC's data collection efforts, particularly for syndromic surveillance. NCIPC has participated in many HHS workgroups focused on methamphetamines. In terms of NCIPC's public health/public safety work in the field, they are taking into consideration how to build in methamphetamine interventions. Again, part of this is driven by Congressional appropriations. If Congressional language states "opioids" they focus on opioids, but where it says anything else such as "emerging drug threats" or where they can build those linkages, NCIPC does try to work on that. In the Notice of Funding Opportunity (NOFO) that was published, they built in "emerging drug threats" so that three years from now, they can address a new 5th wave. They are trying to take a very holistic approach. For example, perhaps substance abuse of all types can be addressed by building in ACEs.

Dr. Greenspan added that they would be hearing from Drs. Erin Parker and Lara DePadilla later about an update in NCIPC's priorities in this area, which are more expansive in including other drugs as well.

Dr. Hedegaard emphasized that the issue of suicide in the US and the increasing rates are of concern. She indicated that the National Center for Health Statistics (NCHS) often works with Coroners and Medical Examiners (MEs), and one of the areas in which they have expressed interest is suicide among the very young (children 8, 9, and 10 years of age). Coroners and MEs do not have a lot of guidance about whether a death is truly a suicide in a child that young. Understanding emotional development and any other guidance that can be given to Coroners and MEs about that particular age group would be very valuable in that arena. The same issue is true with drug overdose. Sometimes Coroners and MEs are struggling to understand whether a death is truly an unintentional drug overdose versus a suicide. That overlap is a very messy area.

Dr. Houry replied that while she was not aware of whether the Suicide Prevention Team was working with that aspect of Coroners and MEs, she would present this information to them. The Suicide Prevention Team, the NVDRS Team, and the Drug Overdose Team have worked with Coroners and MEs and are funding them to do a lot of work.

Dr. Frye emphasized that many of the BSC members have a strong interest in structural violence and relationships between policies (macro, national, state-level) and ACEs. She wondered whether the Office of Policy and Partnerships has any plans to examine this.

Dr. Houry replied that they look generally and through some R01s around policies that impact violence. While she did not know specific language in the current R01s, she emphasized that they look at multiple forms of violence and where they can, how to prevent them.

Dr. Solhtalab added that the Office of Policy and Partnerships is working in several places, particularly with partners. The National Conference of State Legislators (NCSL) is one of the groups with which they are working to integrate the ACEs work in evidence-based policies or evidence-informed policies into NCSL's work so that they can then take it to policies. It is not true policy evaluation in that sense, although they are looking at doing that, but it is in working with partners to ensure that they are using what is available in terms of the evidence so that it can be infused into state policy.

Dr. Greenspan added that in the past, DVP had a cooperative agreement that focused on the intersection of policy and violence. Perhaps Dr. Mercy could speak to that in terms of the macro-level effects on violence.

NCIPC's Office of Informatics

Melvin Crum, MS
Acting Associate Director for Informatics
Office of Informatics
National Center for Injury Prevention and Control
Centers for Disease Control and Prevention

Mr. Crum indicated that the purpose of this presentation was to provide an overview of the creation of NCIPC's Office of Informatics (OI) and its mission and functions; briefly discuss public health informatics and its value; and discuss the OI's alignment with two CDC initiatives

In 2018, NCIPC conducted an organizational assessment that identified the need for an OI to centralize technological processes and strategies across NCIPC. The assessment area focused on technology and the results showed that NCIPC's technology was not sufficient to enable programmatic and operational activities. The root causes of that finding were that the current structure did not have a strategic and coordinated technology approach, there was a lack of information technology (IT) strategy at the center-level, and the IT authority was misplaced and underdefined across the center. Based on these three outcomes, NCIPC established a governance body with centralized IT-making authority and is also developing an IT strategic plan and forming a budget to support NCIPC IT activities throughout the Center.

They also went more in-depth with regard to public health informatics to be more intentional about how it differs from IT. Informatics is one of the 5 core sciences at CDC, which uses computer science and technology and applied information to bring data together in a useful format. Informatics blends three essential knowledge areas and associated skill sets: 1) knowledge of public health practice and its foundation principles as they relate to health systems, laboratories, hospitals, surveillance systems, and epidemiology; 2) knowledge of functional capabilities and limitations of current and emerging information technology; and 3) keen ability to envision, realize, and implement technology solutions to public health challenges.

To better understand informatics' relation to public health, talked about building a "Dream Home" in terms of thinking about the types of people who are needed to do such a thing. For example, like building a dream home, building a public health information system requires the expertise of multiple individuals. At the core, an architect/developer is needed who understands implementing the vision and has the knowledge and expertise needed for policies and regulations. This also is equivalent to a public health informatics expert who has knowledge and expertise of public health practice with IT, data policies and regulations, and standards required to build a public health information system. Having a multidisciplinary -OI will allow NCIPC to address key public health technology and information resource needs, identify and resolve inefficiencies across the Center, and help accelerate the Center's programmatic work to inform decision-making.

The NCIPC OI mission statement was created by informatics SMEs and NCIPC leadership to outline the purpose and vision for the new office. The OI developed three core functions and associated services, which are as follows:

1. The ***Strategic Guidance*** function focuses on providing guidance and services to the Center related to many aspects of its work, including stakeholder engagement, IT investments, data security and sharing, data standards and interoperability, and oversight of governance procedures. Providing informatics guidance and collaborating across the Center will help to standardize the informatics experience and reduce redundancies, leading to more effective use of resources.

2. The ***Technical Guidance*** function focuses on collaboration on informatics-related tasks, specifically collaborating with programs on system development and maintenance, providing technical guidance as needed, and providing IT training and development for the Center. Through this collaboration, OI aims to provide timely answers to questions and provide any additional assistance that may be needed while working with data and systems.

3. The ***Operational Management*** function is related to managing and collaborating on operations and processes across the Center, including contracts, 508 compliance dealing with data visualization, security, and technical reviews. By streamlining day-to-day operational tasks, OI aims to reduce the time spent on these tasks, allowing scientists and program staff to do what they do best.

In addition to these three functions within the Injury Center, the OI is also aligned to two agency-level initiatives:

1. ***Information Technology and Data Governance (ITDG)*** is a new governance approach and structure that will support enterprise-wide accountability for IT and data investments. ITDG's goal is to enable strategic and effective IT and data policies, planning, and processes to support CDC's mission. This can be done by optimizing CDC IT and data investment processes, strengthening and expanding strategic partnerships, and improving data to enable better decision-making.

2. ***Public Health Data Modernization Initiative (PHDMI)*** is a strategic imperative bringing together technology, partnerships, and scientific expertise to harness the life-saving power of data. The PHDMI works to improve data at CDC by modernizing tools, technology, strategy, and attitudes and culture around data. The PHDMI is focused on modernizing systems to be fully interoperable, strengthening the informatics, data, and IT workforce, coordinating through strong leadership and governance, and supporting digital transformation by growing partnerships.

These two initiatives and their objectives are aligned to OI in a few ways. One of OI's services is developing governance processes in accordance with ITDG and PHDMI policies. Additionally, OI leadership serves on the ITDG and PHDMI, which connect OI to larger guidance from the two initiatives. Lastly, OI supports ITDG and PHDMI initiatives by reinforcing objectives at the local level that relate directly to injury programs.

Over the next six months, OI will prioritize activities in the areas of governance, OI infrastructure, and workforce training. In terms of governance, OI will: 1) develop a Center-wide IT contract mechanism to reduce duplicative efforts and overhead costs; 2) facilitate an Information Resources Governance Board (IRGB) environment to encourage Center-wide IT and data collaboration; 3) operationalize new standard operating procedures (SOPs) to improve efficiency of operations and processes. With regard to infrastructure, OI will: 1) manage SharePoint migration and remediation to comply with HHS policies; and 2) conduct systems inventory for the Center to identify redundancies. Pertaining to workforce training, OI will develop training recommendations for the OI and Center to increase the tech-savviness of NCIPC staff.

Discussion Points

Dr. Compton emphasized that every government agency and probably every person across the country are always working to keep up with technology advances and make the most use of them. It appeared that OI would be focused primarily on internal processes, but at the same time there would be the development of dashboards and other information systems across virtually every public health entity around the country. He wondered whether NCIPC saw an intersection between what they are doing internally and the OD2A program or other resources that are provided to the public health community throughout the country.

Mr. Crum responded that other agencies are coming through the Office of the National Coordinator for Health Information Technology (ONC), and they begin to work together. The sharing of technology that he talked about internally to NCIPC actually propagates externally to other centers and agencies. He did not see any difference in the way they are developing their processes. Instead, he sees them as being standardized and able to be agnostic regardless of whether it is internal or external to CDC.

Office of Strategy and Innovation

Christopher M. Jones, PharmD, DrPH, MPH
CAPT, United States Public Health Service
Senior Advisor, NCIPC
Associate Director, Office of Strategy and Innovation
National Center for Injury Prevention and Control
Centers for Disease Control and Prevention

Dr. Jones provided an overview of the new OSI, which was created under NCIPC's reorganization. The impetus for this office largely came out of the reorganization assessment that was conducted prior to the reorganization that identified a clear need for a functional unit within the Center Director's office to serve the role of thinking about how all of NCIPC's various activities fit together, particularly with regard to the Injury Center's strategic priorities. While NCIPC has topical areas like overdose, suicide prevention, and ACEs as strategic priorities, an individual division is largely charged with executing work in those areas, there are many shared risk and protective factors that cut across those activities—particularly for ACEs. Historically, there had been siloed activities and inefficiencies for advancing those strategic priorities. There was a clear recommendation through that assessment, even before the idea of a specific office was put in place, that there needed to be a functional unit that could take on the role of coordinating across science, policy, and communications to advance NCIPC's strategic priorities and foster collaboration across different divisions and offices that all have components of that important work. The OSI was created to serve that role.

A fair amount of time was spent developing a vision and mission for the OSI. The visions is to "advance innovation in injury and violence prevention to benefit public health as rapidly as possible." The mission is to "advance violence and injury prevention by fostering innovative public health approaches, leading strategic collaborations, and informing the development and implementation of evidence-based practices." The OSI will accomplish this through: 1) fostering Center-wide connections across strategic priorities through the alignment of policy, science, and communications; 2) encouraging novel ideas; 3) creating efficiencies and promoting work on shared risk and protective factors; 4) incubating innovative data science strategies to improve the timeliness of health information, respond to public health threats earlier, and increase the efficiency and effectiveness of prevention programs; 5) building internal and external collaborations to implement the latest tools and technologies to improve health; 6) providing leadership, strategic planning, and coordination of adverse childhood experiences prevention activities across the Center; 7) expanding on current initiatives; 8) fostering collaborations across divisions and offices; 9) establishing consistent messaging and scientific approaches that align with strategic policy goals; and 10) serving as conveners to facilitate the development of a Center-wide strategy, connecting thought leaders in the field and fostering a culture of innovation with internal and external collaborators, and expanding Center opportunities aimed at helping reach broader audiences and achieve strategic policy goals.

There is a broad function for the OSI around overall strategy, but then there are very specific components around ACEs coordination and leadership and data science, which is where they have focused most of their time since the office was created. In the spirit of the OSI as a convener and bringing everyone who has equities to the table within the Center they have created strategic working groups for data science and ACEs. Historically, the DVP has led the ACEs work. As they have grown to appreciate the connection between ACEs and opioids, ACEs and substance use more broadly, and overdose, they felt that the strategy working groups were an important piece to bring to the table. With the move of suicide to the new DIP, that also is a

key area where ACEs have a contributing role as an upstream risk factor and opportunities for prevention exist there. They also recognized that all of NCIPC's offices and divisions have some touch-point with both data science and ACES, so they have convened these groups and are currently working on specific strategies to advance the work they are doing around data science and ACEs. Hopefully, they will have more to share in future BSC meetings on the specific activities.

The point raised in the discussion with Mr. Crum about data visualization, such as with dashboards, is a component of the OI and thinking about technology behind *how* to do that. Part of the work on data science pertains to informative ways to present information that resonate with different audiences. Therefore, data visualization has been a particular component of interest in the data science strategy group. The same is true with tools and techniques, such as machine learning (ML), natural language processing (NLP), and artificial intelligence (AI) that can create efficiencies. They often have very disparate data sources that are very text-heavy, and not structured that they do not take full advantage of because that is not easy to do if humans are trying to code all of that information. They have done this in pockets across the Injury Center over the last few years, particularly in suicide and violence prevention. However, they realized that there is an opportunity to be more thoughtful about that. The methods, tools, and techniques that are applied to violence prevention or suicide prevention can be translated for overdose prevention, motor vehicle crashes, and other topics that are relevant to the Injury Center.

In terms of ACEs, there is a public health opportunity generally as evidenced by the November *Vital*signs™ that shone a light on the broad effects of ACEs and the opportunities for prevention to reduce injury, violence, chronic diseases, and other leading causes of death (CODs). They wanted to be strategic about what public health's role is in addressing ACEs, and CDC being a key leader in advancing ACEs prevention efforts. In the field, this happens in pockets. People have particular areas of interest of ACEs, but there is an opportunity in that people are interested in the topic and CDC can be a leader in advancing efforts in that space.

As part of the data science work, they also have a number of signature initiatives that they are rolling out. Some of these are just starting, while some have been underway for a while. These initiatives are trying to think about how to bring more timely data to bear to address issues. They often struggle with traditional public health surveillance systems that are lagging by 12 months, 18 months, 2 years, or more. In partnership with external collaborators at Georgia Tech last year, they launched an initiative called "REDUCE" that is focused on suicide. This essentially uses a data ensemble approach to look at multiple data sources to understand which data sources that are much timelier, are the best predictors of suicide, and how those different data sources could be used to help with forecasting at various geographic levels and among different populations to understand what prevention efforts are needed. They just launched a project that will do something very similar for overdose, which is in partnership with the DOP and Georgia Tech. Given recent concerns pertaining to health misinformation, they also are doing a project on misinformation in the social media space to understand where misinformation exists in the context of overdose and addiction treatment, what the misinformation is, and how it diffuses through networks in order to think about how to reorient messages to counter misinformation. There are broader government efforts focused on getting people into care and/or on medication-assisted treatment (MAT) for OUD. They are aware of various biases that exist online that say things like, "Substituting one drug for another is not really recovery." They want to better understand how that plays out in the social media space.

The OSI has just become fully staffed in the last couple of weeks, so they are a small but mighty office and have an ambitious agenda. They certainly are leaning very heavily on all of their collaborators and content SMEs in the various divisions. For data science, they will work very closely with the new DIP's Data Science Team as well, which was created under the reorganization.

Discussion Points

Dr. Hedlund observed that the work in data science is particularly welcomed, but that it seemed seems like there is a lot of overlap between what the OSI and the OI are doing. He expressed hope that there is a close collaboration between the two offices.

Dr. Jones replied that there is and that Mr. Crum has been part of the key strategy group for data science and thinking about the systems and platforms they have in terms of how to leverage those and what will be needed in the future for computing power. If they are going to have large datasets, consideration must be given to how to do that efficiently so that individual divisions leverage existing NCIPC and/or CDC systems rather than creating new systems.

Dr. Hedegaard reported that NCHS also is doing a lot work with NLP, particularly on information from death certificates and electronic health records (EHRs). For example, they have assessed the specific drugs in the text on death certificates, looked at the location of drownings in a much more detailed fashion, and assessed opioids on EHRs for hospitalizations to make a distinction between overdoses and treatment. She expressed hope that there might be opportunities in the future for some collaboration between NCHS and NCIPC, given that they all have a common goal about what they want to do. Rather than "reinvent the wheel," the opportunity to work together is always appreciated.

Dr. Jones said that he was familiar with NCHS's work on literal text for mortality data. There have been discussions internally about how to apply that to NVDRS or State Unintentional Drug Overdose Reporting System (SUDORS) data as well. To the extent that NCHS already has a catalog of terms, that would be a small place to begin with collaboration.

Dr. Hedegaard indicated that they are currently stuck with classifying all of the drugs in some sort of standardized categorization. Despite working with the U.S. Food and Drug Administration (FDA), the Drug Enforcement Administration (DEA), and a variety of others, they have not yet determined the best way to categorize. A classification schema that would meet all of their needs would be ideal.

Dr. Franklin inquired as to where suicide prevention is now located give the NCIPC reorganization process, and the rationale behind moving it.

Dr. Houry replied that previously, suicide prevention lived largely in the Division of Violence Prevention (DVP). There was not a dedicated team, but there were activities throughout. Now there is a dedicated team and that now lives in the DIP. The NVDRS, with a suicide surveillance aspect, is still in the DVP. There were numerous discussions about moving suicide prevention from the DVP to the DIP. Part of it was because they wanted to have a focused concentration on suicide, and they also wanted to co-locate it since it does not have significant resources at this point so that it could have a connection with state and local health departments through Core SVIPP that also lives in the DIP. Tribal programs are also there. In addition the data science work could help boost suicide prevention work. Similar thoughts occurred with regard to

some of the traffic injuries and traumatic brain injury (TBI) programs that they are trying to grow, so that they can co-locate with a lot of the programs to support a lot of that infrastructure.

Dr. Liller asked whether it would be possible for the BSC members to have a chart of what is in each of the divisions, especially given the reorganization. A general organizational chart was provided in the presentation, but more detail would be helpful since things moved around.

Dr. Houry indicated that they would look at what is on the website and if it is not sufficiently detailed, they will send a more detailed chart.

Regarding the potential for forecasting in closer to real-time, **Dr. Frye** asked whether all of these data would be used for modeling different scenarios. She emphasized the importance of the policy issue in terms of not only informing policy, but also in determining the impact of specific policies on ACEs and using this great data source to understand what happens if a policy is removed or inserted at different times and its impact on ACEs and whether that would be something the OSI would do.

Dr. Jones responded that he thought that would be something they would do in collaboration with DVP and the Data Science Team in the DIP. ACEs is somewhat more challenging from a data standpoint, because there is not a single place for outcomes. It does bode well for data science to be able to link those things, and data linkage is another part of OSI's work. They are a little further along in the modeling efforts with respect to overdose prevention. Through Dr. Baldwin's division, the DOP, have contracted with Dr. Donald Burke's group in Pennsylvania to do policy modeling related to overdose prevention at a more granular community-level using multiple data sources to examine policy interactions. He thinks that what they will learn from that exercise is applicable to other areas like suicide prevention or ACEs policies. This is definitely something on OSI's list. The goal at CDC is not to put out information simply for the sake of putting out information, but to drive and inform policy decision-making. ACEs and thinking about ACEs-related policies is a largely under-researched area, and there are certainly a lot of opportunities to address that.

Dr. Greenspan added that there is an agency-wide initiative to modernize data, and there is current collaboration with Georgia Tech at the CDC and NCIPC levels to leverage some of the work that will be done within the agency as well.

Dr. Chou observed that it often strikes him that clinical epidemiology and informatics people often do not speak the same language. He was at a meeting where they kept talking about "artifacts," which sounded like something ancient and irrelevant when they actually are items produced by the software that are current. In order to bring innovations into practice, there must be ways for different disciplines to speak the same language and understand each other. He inquired as to whether NCIPC is using big data approaches with sources such as Google Trends to identify early warnings of emerging issues.

Dr. Jones replied that a key part of their data science work is building out collaborations with technology partners. They met with Google a few months ago to talk about a variety of violence and injury prevention topics. They also have had conversations with Facebook, Twitter, and other places. Obviously, there is heightened scrutiny with access to those data. That is why partnerships with Georgia Tech and other external collaborators are also important. There is not a great framework in ethnics in terms of how to use that information. As part of the data science group, they are convening a meeting within the year that will consider the ethics of using

information appropriately. People are putting out information that they want to use for a different purpose, but we must determine how to do that in a responsible way.

Dr. Compton indicated that the National Institute on Drug Abuse (NIDA) is relaunching the National Drug Early Warning System (NDEWS) program. They published a Request for Applications (RFA) that is in its final stages. As this moves forward, there might be some terrific opportunities to work with NCIPC with regard to the goal of having new ways to identify emerging threats such as through the use of big data, ethnographic surveillance, and other informant approaches that can complement some of the big data systems. This might provide new ways to identify threats before they are fully formed and "put out the fires" when they are small.

Dr. Floyd asked about NCIPC's relationship with the ONC, such that EHR data could be more readily accessed and utilized by the Injury Center.

Dr. Jones indicated that there are liaisons with ONC out of the OI. In the data science space, they have earmarked EHR or electronic medical record (EMR) data as a key area in which they would like to do work. However, they have not done much in that space at this point as they are still in the strategic planning phase for that component of the work. They would like to engage more in this space, and there are a lot of opportunities. They have had some conversations with vendors of EHR data. Largely, they have made EHR data into a structured format. However, some vendors still have unstructured data. They have had some conversations about how to at least gain some access to those data to test out certain ideas. This is certainly an area of opportunity moving forward, and talking with ONC and NCHS is a good place to start from the data science perspective.

Dr. Greenspan added that within the agency, one of the other centers has a major EHR initiative. Looking across centers, NCIPC hopes to be able to collaborate and take advantage of some of the agency-wide initiatives that are underway.

Dr. Miskis noted that hearing the presentations from Mr. Crum and Dr. Jones and having run into Jonathan Trapp on the way in brought to mind emergency preparedness from a structural perspective and what NCIPC considers to be the critical functions. Some of NCIPC's work is on the long-term horizon, but a lot of work is very immediate as is the use of informatics. He wondered how NCIPC approaches that issue.

Dr. Houry responded that the vaping response has been a good reality check in terms of building a core infrastructure within NCIPC to be able to respond to different public health crises in the field. Many NCIPC staff members have gone through the year-long Incident Management Training Program. NCIPC is detailing staff to the vaping response and to the Ebola response to be able to have that preparedness response. NCIPC used to address bomb and blast injuries, which moved out about 10 years ago.

Dr. Jones responded that along with the other chronic disease centers, NCIPC does not have a deep bench in responding to public health emergencies in the same way that infectious disease does at CDC. It has been an eye-opener for the human resources side, as well as the data side. NCIPC does not have a surveillance system that allows them to look at adults who are vaping tetrahydrocannabinol (TCH) and compare them to cases. They have had to think in innovative ways. They will be launching an opt-in internet panel survey to try to acquire some information on people who have not developed lung injury, but are vaping THC-based products. They also are thinking about using more of the social media and other data sources to understand what is

occurring and how things are changing. They are looking at syndromic surveillance data, which is where they certainly have made great strides in opioids, and making investments for suicide prevention to determine where things are going on a timely basis. This is both a data and human resources issue. As part of the data modernization effort at CDC more broadly, the lung injury response had identified a core gap in state and local public health data systems as well in that they are still using very clunky, old systems to obtain information. This just delays the ability to understand a very pressing public health threat.

In terms of EHR data, **Dr. Cunningham** wondered whether there were efforts to look at the PDMPs across states. This may be particularly helpful in that medical cannabis may be part of the PDMP.

Dr. Jones replied that they would like to use the PDMP data, but there are a number of constraints in terms of who can have access and at what level those data can be integrated. Part of the data science work involves thinking not only about developing data linkages and methods internally, but also about how NCIPC can help to advance the field so that even if NCIPC cannot get access to the data, they have the capacity to assist states in looking at the data in a particular way. There certainly are efforts under OD2A to think about data innovations. His hope is that as they start to advance on the data science strategy, they are feeding that into their programmatic efforts so that what they are learning is also directly applicable to what the states are doing in terms of linking mortality, PDMP, Medicaid, and EHR data so that they are not having to think of it on their own but that they have code that could be used and applied. There always are legal constraints with regard to who can have access to data.

Dr. Baldwin added that in the past, NCIPC funded the Prescription Behavior Surveillance System (PBSS) in which de-identified PDMP data were linked from state-based PDMPs. They did not see the full richness, robustness, and utility of those data that they could not get from other data streams. However, they do see the value of linking PDMP data in the context of states to do different kinds of things. They also have stood up a Cannabis Strategy Unit, which is led by Dr. Tamara Haegerich, and are in the process of developing a strategic plan in that space and will be sensitive with regard to medical marijuana.

Dr. Frye requested clarification that the vaping deaths and injuries is the first time NCIPC has been involved in a response to a national emergency related to injury and that CDC has responded to national emergencies around gun violence and mass shootings, but not out of NCIPC.

Dr. Houry responded that NCIPC always has been involved in a lot of activities such as Epidemiologic Assistance (Epi-Aids) and outbreak investigations. This difference in the lung injury epidemic response is that NCIPC is co-leading the response, building the databases and having the EOC activated. In terms of the question regarding the emergency response to the shootings, NCIPC recently did a suicide Epi-Aid in Ohio. For agency-wide responses in which the EOC is activated, this was a first for NCIPC to have something at that level. The EOC is usually located at CDC's Roybal Campus, but NCIPC was able to co-house that at the Chamblee Campus to lead an agency-wide emergency effort.

Dr. Greenspan added that typically when NCIPC does an Epi-Aid, a state or county health department invites them in to do that. That is usually how NCIPC responds to emergency situations. That is why NCIPC has been involved in some gun violence investigations but not others.

Dr. Frye asked how it was that the vaping situation merited such a different response.

Dr. Jones responded that part of it is that a component of it belongs to the Injury Center, because there was a very strong signal for THC and the marijuana/cannabis work at CDC sits within the Injury Center. However, other components of CDC also contribute to that. There also is a core role for NCCDPHP, particularly within the OSH, that historically has dealt with e-cigarette use and vaping with regard to nicotine. It was a multi-center led response. There is a framework for an Epi-Aid; a single center program led response, which follows the normal leadership structure within that center; and a multi-program response that has such vast volumes of communication needs, policy needs, Congressional hearings, White House interest, the need to address the role of FDA and how CDC is engaging with FDA in terms of product testing, which differs at CDC from FDA. It was simply beyond the structure of one or two centers to lead this. Activation of the EOC essentially institutes the Incident Command System (ICS), which has a totally different leadership chain than the normal center leadership chain and it filters up to the CDC Director. In mid-September, the decision was made that they had exhausted the benefits that could be derived from a multi-center led response and that they needed to activate the EOC. This is similar to what was done for Zika and is currently being done for Ebola.

Dr. Greenspan added that these usually begin as single investigations. When the vaping issue started, they received requests from Wisconsin and Illinois, which were the first states that recognized this problem. As this grew and more states wanted to be involved, it expanded past what a single Epi-Aid could do. That is when the EOC and ICS were activated. Often, even things like Zika and Ebola may start as a single investigation. But the EOC may be activated if the response needs to broaden.

Dr. Baldwin noted CDC is in the process of finalizing a graduated response framework that delineates the program-, to center-, to agency-level response criteria and what resources go into play for that. It might make sense to give a presentation to the BSC at a future meeting on that once it is finalized.

Dr. Frye thought that would be beneficial, along with the data that drives that decision-making process. Certainly, the population-level impacts of gun violence versus lung injury due to vaping would be relevant to that conversation.

Update on the Lung Injury Epidemic

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Dr. Jones provided a brief update on the current CDC response to the lung injury epidemic. In August 2019, initial cases of lung injury associated with e-cigarette or vaping product use was reported to the CDC. On August 16th, Wisconsin and Illinois officially requested CDC Epi-Aids to assist in the investigation to better understand the proliferating cases of lung injury in those states. In mid-September, the CDC EOC was activated. This essentially institutes the ICS and a 24/7 response as is being done for other EOC activations. Dr. Jones currently serves as the

Incident Manager for that response, and previously served as the Deputy Incident Manager for a couple of months.

The latest data that they have released publicly were as of November 20, 2019. However, another public release was scheduled for December 5, 2019. They update every Thursday afternoon, with the exception of the previous week due to the Thanksgiving holiday. As of November 20th, there had been 2290 cases of e-cigarette or vaping product use-associated lung injury (EVALI) reported to CDC from 49 states, DC, and 2 US territories (Puerto Rico and the Virgin Islands). There were 47 deaths confirmed across 25 states, with a median age of 53 years and a range 17 to 75 years during that same reporting period. The age ranges for overall cases tend to skew to a younger population, but the deaths tend to be older. All patients had reported a history of vaping or using e-cigarettes.

Some analyses have been performed on the available data. About 2000 cases have reported particular outcomes and demographic information. Of those cases, 95% were hospitalized and about 5% were not hospitalized. CDC recently issued an *MMWR* that characterized the outpatient-based or non-hospitalized patients, who really do not differ demographically or from a substance perspective from the hospitalized patients. Nevertheless, the vast majority have been hospitalized. Of the cases, 68% have been male and 77% have been under the age of 35 years, with a median age of 24 years. The vast majority of cases have been 18 to 34 years of age. About 15% are under the age of 18, which is an important point in terms of thinking about the youth epidemic of vaping, which is a distinct issue from the EVALI outbreak. About 38% of the patients have been 18 to 34 years of age and about 24% have been 25 to 34 years of age. Just 23% of patients have been 35 years of age or older. In terms of specific substances individuals reported in the past 3 months or 3 months prior to onset of lung injury, 83% have reported using THC-containing products. Of those, 35 reported exclusive use of THC-containing products. About 61% reported using nicotine-containing products and 13% reported exclusive use of nicotine-containing products. About 50% reported using both THC- and nicotine-containing products, and 4% reported no THC- or nicotine-containing product use.

Some of the key findings to date are that THC is present in most of the samples tested by the FDA and most patients do report a history of using THC-containing e-cigarette or vaping products. Thus, the national and state data that have been analyzed so far implicate THC-containing products, particularly those from informal sources like friends, family, or in-person or online dealers, as linked to most of the cases and playing a major role in the outbreak. CDC also issued an *MMWR* a couple of weeks ago looking at bronchoalveolar lavage (BAL) fluid samples from a small number of cases and found that in all of those cases, vitamin E acetate was present in the BAL fluids. This certainly identifies vitamin E acetate as a chemical of concern among patients with lung injury. It is important to point out that while vitamin E acetate certainly is associated with lung injury, there is not yet sufficient evidence to rule out the contribution of other chemicals of concern or other cutting agents that might be in these particular products. There are still many different substances and product sources under investigation.

In addition to analyzing the data, CDC has 4 overarching areas that serve as guideposts for the agency's response, which are to: 1) identify and define the risk factors and the source for e-EVALI; 2) detect and track confirmed and probable cases in the US; 3) communicate actionable recommendations to state, local, and clinical audiences; and 4) establish laboratory procedures that can assist with the public health investigation and patient care. CDC is working very closely with states and the Council for State and Territorial Epidemiologists (CSTE), which has provided a significant leadership role in coordinating CDC's efforts with the states to collect information

on cases. CDC has a broad range of epidemiological analyses currently under way and has published a number of *MMWRs* at either the national level or for specific states. The agency has worked with and analyzed different aspects of product source, behaviors, frequency of use, and other characteristics that are associated with lung injury. They also continue to test BAL samples, and most recently have been testing control samples to determine how they look compared to the cases CDC previously published that included vitamin E acetate. CDC's Infectious Disease Pathology Branch (IDPB) is conducting pathological testing of lung biopsy and autopsy specimens associated with case patients. The laboratory folks are also performing aerosol emissions testing of vaping products to determine what chemicals are identified and whether new chemicals are created through the process of vaporizing. That is meant to augment the work that the FDA is doing in which they are testing product samples that have been turned in by patients to see what the constituents are of those products.

As mentioned earlier, some form of *MMWR* has been released largely on a weekly basis. The *MMWRs* have been used to detail the epidemiology of the outbreak. CDC has issued guidance to clinicians on the assessment, management, and follow-up of patients. Most recently, CDC issued guidance to clinicians in the context of the outpatient setting and the coming influenza season in that patients will be presenting with very similar symptoms. Additional clinical guidance is under development to provide clarity about certain areas and certain populations. CDC continues to work with states with the available data that they have to hone in on different product sources and how those vary across the nation. An *MMWR* is due to be published on December 6, 2019 as an early release that will detail some of that information at the national level. This really is a 24/7 response, with not a lot of sleeping and family time. This is truly being treated in the same way CDC would treat Zika or Ebola, with a tremendous sense of urgency to understand what is occurring in the outbreak.

As mentioned earlier, they also are conducting an opt-in internet panel survey of a convenience sample of 15 states to assess product sources, devices that are used, use behaviors, and frequency of use because they do not have a ready sample from traditional public health surveillance systems to compare adult cases to a population who are engaging in the behavior but have not gotten sick. Office of Management and Budget (OMB) clearance for that information collection has been received, with thanks very much to Dr. Greenspan as the Associate Director for Science (ADS) in helping them to get that "across the finish line." They are very eager to get that survey in the field. They appreciate that it has limitations as an opt-in internet panel survey, but this is an area for which information is needed. Illinois conducted an online survey that was published recently in an *MMWR* where they found some interesting comparisons between cases who had not developed lung injury compared to their EVALI cases. CDC thinks they can replicate that at a broader level through this opt-in internet panel survey.

For the foreseeable future, CDC will continue to be in an EOC activation response stance. They continue to deliberate on how to transition this back into the various programs. The National Center for Environmental Health (NCEH), NCCDPHP, and NCIPC all have equities in thinking about how to monitor this. While it is probably not reasonable to think that they will get to a place of zero, given that there probably was some background already occurring with lung injuries. However, they need to get to a posture of how to continue to monitor this over time and continue to make recommendations. As mentioned, vitamin E acetate has certainly been identified as a chemical of concern, but there are other cutting agents that also have possibilities for presenting in a similar way. As vitamin E acetate comes out of the marketplace, there is always the concern for substitution in the illicit market. There are ongoing conversations about having surveillance systems in place, like syndromic surveillance, to determine whether there is

an uptick in cases and continuing to engage with states on what they are seeing. This will help understand the right balance of resource that need to be dedicated to the response.

Discussion Points

Dr. Miskis observed that CDC is clearly using the most reliable and best data available, but wondered whether there was a sense of any under-reporting,

Dr. Jones replied that while he is sure there is under-reporting, he had no idea of the magnitude. People typically have developed some sort of general respiratory or gastrointestinal (GI) symptoms or fever, which could present as many different illnesses and could result in misidentification. While this has not been well-quantified, certainly there must be some cases in which someone presented with such symptoms to urgent care and were sent home not diagnosed with lung injury, who subsequently decompensated and then became a case. They are working with a series of states to look at predictors of severity of illness, which may give some sense across the spectrum of the milder presentation showing up in hospitals. No doubt there is probably something that is even milder that is not showing up. One of the reasons they wanted to have a comparison population was to understand the contribution of frequency. Illinois's comparison data with their online survey with their cases would suggest that more frequent use is associated with cases compared to people who were vaping but did not get sick. They would like to see whether that signal holds in other states. There are a lot of issues they are trying to understand that contribute to the threshold of showing up. There obviously is the issue of stimulated reporting in that now they have been asking people to screen for and diagnose lung injury, which is probably driving some of this as well. It would be great if they had a surveillance system that could get to the question of whether someone had some aspect of this but did not seek care. That was one of the questions they were hoping to ask on the opt-in internet panel survey, but that question did not make it in as a result of the OMB process.

Dr. Franklin asked whether there were any data regarding the racial and ethnic breakdown among the cases.

Dr. Jones indicated that they have reported some of that information. There is a high level of missingness at the national level. While he did not have it in front of him, at least one of the *MMWRs* reported on race and ethnicity to the extent that they could, but appreciate that there is a lot of missing information.

Dr. Hedegaard asked whether they knew the International Classification of Diseases (ICD)-10 underlying or multiple cause codes that were assigned to the deaths. If the underlying cause is a lung injury, they might not be looking for it in the typical way that the data are cut for looking at injuries. She was curious about looking at the literal text as well to determine whether there were cases prior to August that might have been leading up to this, and that might identify what they should be monitoring for in the future in terms of mortality data.

Dr. Jones said that while he did not know the specific codes off of the top of his head, they are performing some additional analyses on the deaths to better understand them now that they have at least a reasonable number to examine. They can see if they have the death certificate information to get to how that is being coded. They worked with NCHS to publish guidance for a series of ICD-10-CM codes that could be used in the hospital context. It is unclear how often that is actually being adopted. There is interest in putting forward a recommendation for a specific ICD-10 code. There is a meeting in April during which that would be decided.

Dr. Porucznik said she was glad to hear that proactive guidance has been issued in advance of the respiratory virus season. It will be interesting to see how someone who might have a mild lung injury may be more at risk for respiratory disease. Since there has been a slightly older age among the deaths than among the cases, it will be interesting to see how many years of smoking history and cumulative lung injury may have put people more at risk for fatality.

Dr. Jones indicated that the data that have been reported thus far would suggest probably longer histories of smoking, but also other comorbidities that likely decreased a person's ability to withstand the insult that they received from the lung injury.

Dr. Frye noted that a lot of localities and other jurisdictions are responding to these deaths, injuries, and vaping in general through limitations on sales of non-THC-related vaping products. For example, the New York City Council recently banned the sale of flavored cartridges. She wondered whether there was a concern that this would create a market for off-label, non-traditional ways of getting cartridges in order to meet that demand for the flavored cartridges for nicotine- not TCH-related vaping.

Dr. Jones said he thought there was a general concern that policies intended to focus on the youth epidemic but are using the political capital of concern over lung injury might have unintended consequences. He does not think they have a full delineation of what those intended consequences would be, but CDC is trying to be clear and increasingly more clear that this is largely THC-driven primarily among 18 to 34 year olds, but that there is a separate issue of youth vaping that needs its own set of policy responses and that it is distinct from what is occurring with lung injury. Lung injury also needs its own set of policy responses. They must ensure that they are not conflating those and that in the policy context, there is not a knee-jerk reaction that would have some potential unintended consequences downstream.

Dr. Frye asked Dr. Jones to elaborate on why CDC believes that these are separate in terms of the epidemiology of the overlap among young people who are vaping nicotine and THC and why they would not imagine that this could happen, but just at a slower speed, among teen vapers.

Dr. Jones indicated that it could happen. There is a minority of cases among people who are less than 18 years of age. That is not to say that people who initiate with nicotine-based products might not then go on to use products in the future. In terms of the acute response, focusing in on the young adult population from the THC side is where CDC's data would suggest they need to focus.

Regarding the potential for under-reporting, **Dr. Habermann** recalled that the data for either the cases or the deaths are coming from 25 states and wondered whether the other 25 states are engaged and do not observe any cases or deaths, or if there have been issues in engaging with the other states.

Dr. Jones clarified that the overall cases came from 49 states, DC, and 2 US territories. Essentially, all states and the vast majority of territories have reported at least 1 case. The deaths are only coming from those 25 states. It is not that they are not looking for it. It is just that those are the ones that have been identified and reported to CDC. CDC is actively engaged with all states in collecting data on cases. As of the last publicly released data, Alaska is the one state that had not reported a case.

In regard to a policy response, **Dr. Franklin** asked for thoughts concerning the role of flavored nicotine tobacco as it relates to youth consumption of tobacco regardless of whether it is cartridges.

Dr. Jones deferred this to his OSH colleagues in terms of flavoring, given that OSH already published a series of prevention priorities for the youth epidemic.

Extramural Research Update

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 provided a brief overview of the Extramural Research Program Office (ERPO), the new FY 2019 extramural awards that have been selected, funded, and are moving forward; programs; NCIPC's portfolio; and FY 2020 funding opportunities. ERPO is the science and administrative focal point for the development, primary and secondary peer review, and the post-award management of extramural research awards for NCIPC. NCIPC also conducts these services for NCEH and the Agency for Toxic Substances and Disease Registry (ATSDR). ERPO oversees and manages research through the grant and cooperative agreement lifecycle. ERPO is like a hub or command central for NCIPC's extramural research activities. In doing this work, ERPO works collaboratively with division staff in several areas as they oversee and conduct the program work throughout the grant lifecycle. This graphic depicts the work that ERPO does and the major program areas that they manage. Available on the ERPO website, this graphic is interactive. Moving through the grant lifecycle, a brief description is provided by clicking on each area:

Within NCIPC, division partners and staff SMEs develop the research concepts. Once those have been approved, they are submitted to ERPO and the collaborative work begins for developing the NOFOs. ERPO develops those concepts for NCEH and ATSDR in consultation with the division staff. There are some differences in how they collaborate and perform the work of the ERPO between the centers. ERPOs were established across CDC over 10 years ago in response to an HHS Directive for objectivity in funding. CDC established units, not all of which are called ERPO, to standardize processes and procedures for extramural research funding decisions that are based on an honest and scientifically credible process; ensure that CDC funds the highest quality research possible to address public health program mission and goals; and support the integrity, transparency, and scientific credibility of CDC's extramural processes and funding decisions. ERPO stakeholders and partners include: Center Leadership; Center Divisions; CDC Office of Financial Resources (OFR) / Office of Grant Services (OGS); CDC Strategic Business Initiatives Unit (SBI) / Administrative Office for Advisory Committees; Grant Recipients; and CDC OD and Other Centers, Institutes, and Offices (CIOs).

The new awards funded in FY 2019 address every program area in NCIPC's research priorities, which they are very excited to have accomplished this year. Funded topic areas include: Child Maltreatment (CM) / Child Abuse and Neglect (CAN); Adverse Childhood Experiences (ACEs); Youth Violence (YV); Sexual Violence (SV); Intimate Partner Violence (IPV); Self-Directed Violence and Suicide; Cross-Cutting Strategies for Multiple forms of Violence; Opioid Use Disorder (OUD) and Overdose; Motor Vehicle Injury; Traumatic Brain Injury (TBI) and Youth Sports Concussion; and Older Adult Falls. These awards were funded under 7 different research NOFOs that the ERPO managed as shown in this table:

FY2019 New Extramural Research Awards

FY 2019 NOFO	Number of Applications Awarded	1st year Funding	Total Estimated Award** (Performance YRS.)
CE19-001 - Injury Control Research Centers (R49)	9	$7,550,942	$37,754,710 (5 YRS)
CE19-002 - Research Grants to Identify Effective Strategies for Opioid Overdose Prevention	8	$5,773,788	$17,321,364 (3 YRS)
CE19-003 - Evaluation of Return to School Programs for Traumatic Brain Injury	2	$1,087,474	$4,349,896 (4 YRS)
CE19-004 - Etiologic and Effectiveness Research to Address Polysubstance Impaired Driving	1	$332,797	$998,391 (3 YRS)
CE19-005 - Research Grants for Preventing Violence and Violence Related Injury (R01)	4	$1,395,281	$4,185,843 (3 YRS)
CE19-006 - Grants to Support New Investigators in Addressing Cross-Cutting Violence Prevention and Opioid Overdose Prevention (only violence prevention research awarded)	2	$244,296	$488,592 (2 YRS)
PA18-573/PA-18-574 - Omnibus Solicitations of the Centers for Disease Control and Prevention for Small Business Innovation Research [SBIR] Grants	2 Phase Is Tools for preventing impaired driving and sexual exploitation 2 Phase IIs Tools for preventing opioid overdose and managing TBI	$1,977,813	$ 450,000 (1 YR) $2,000,000 (2 YRS)
		$18,362,391	Total New Awards Estimated Funding** $67,548,796

** Pending satisfactory progress and the availability of funds in future federal appropriations

Excitingly, NCIPC was able to fund over $18 million in new awards in 2019. These awards do not all have the same program performance period. For example, the funding period is 5 years for the ICRCs and 12 months for the Small Business Innovation Research (SBIR) grants. If all of the new awardees funded in FY 2019 progress satisfactorily and achieve the research outcomes intended and that they were funded to do, NCIPC will achieve an awardee portfolio of about $70 million for what was funded in FY 2019. There was an improvement in the percentage of applications submitted in FY 2019 that could be sent to peer review. For 2019, better than 75% of the applications submitted were sent to peer review in all cases. In many cases, 100% of the applications submitted were sent to peer review. They think this reflects that they have been able to develop better NOFOs that are clearer to the applicant community, and that a consistent effort has been made to convene pre-application calls to provide opportunities for the applicants to ask questions about what is intended for the research to be funded.

Peer review is foundational to what CDC does. CDC policy requires a two-step peer review policy. In primary peer review, NCIPC has instituted a concerted effort to improve the quality of the outcome of the peer review process. As part of that effort, they developed an OMB survey that was initiated in 2018 to collect feedback from reviewers on the quality of the reviews, the review process, and what improvements could be made. In FY 2019, 83% of the 111 serving reviewers responded. They were able to achieve this response rate by implementing the survey immediately at the end of a review meeting before adjourning. The surveys are analyzed per meeting and across meetings to see how the meetings are tracking and make sure that the peer review meetings are being conducted appropriately and consistently to the extent possible.

In terms of the FY 2019 survey results, no notable differences were observed in the responses across 7 peer review panels. Notably, 97% of the panelists who responded to the survey agreed that the panel reviews were managed in a fair and unbiased way, that the CDC leadership involved in these panel meetings was consistent and high quality, and that the quality of the scientific discussions in the review of the applications were high quality. This 97% reflects those who either agreed or strongly agreed with the quality of the peer review. Dr. Williams-Johnson shared an individual reviewer's qualitative feedback from the open-ended question stating, "Panel members were extremely well-prepared and professional. The Scientific Review Official (SRO) and Chair were professional and knowledgeable and ensured a fair, effective review." To be fair and real, 60% of responders said that they would like for NCIPC to do a better job with their travel procedures and travel schedules. However, some of those issues arose based on what NCIPC is permitted to do as the federal government in preparing travel for guests. Even though not everyone was happy about everything necessary to manage a peer review, the good news is that 72% of the reviewers responding to the survey indicated that they would be very likely to serve on an NCIPC panel again. NCIPC thinks that is still a win.

With regard to extramural research program highlights, 9 ICRCs were funded in FY 2019. They are listed here along with an abbreviated title of the research they are conducting and the NCIPC priority area addressed in parentheses:

- Columbia University
  - K-12 school safety and security, mental health, and ACES: variations by experience violence (ACEs)
  - Impact of ridesharing on motor vehicle crashes, alcohol morbidity, and assault (Motor Vehicle Injury Prevention)
  - Diverging trends in depression, suicide, and alcohol / opioid use in teens (Opioid Use Disorder and Overdose Prevention)

- Diverging trends in depression /suicide and alcohol / opioid use in teens (Self-Directed Violence and Suicide Prevention)
- Role of social media in increasing adolescent depression and suicidality (Self-Directed Violence and Suicide Prevention)

- Emory University
  - ACEs among Hispanic pediatric caregivers to improve child health outcomes and decrease adverse events (ACEs)
  - ACEs & suicidal behavior in African Americans - Assessment and Prevention (ACEs and Self-Directed Violence and Suicide Prevention)
  - Small area estimated for opioid abuse prevention and response (Opioid Use Disorder and Overdose Prevention)
  - Organizational readiness of the Georgia Trauma System to implement the Cardiff Model (Violence Data Collection Models)

- Johns Hopkins University
  - Child sexual abuse prevention strategies in youth serving organizations (ACEs and Sexual Violence Prevention)
  - IHS medication storage and disposal for older adults in Tribal Communities (Opioid Use Disorder and Overdose Prevention)
  - State opioid driving laws impact on fatal crashes (Opioid Use Disorder and Overdose Prevention)
  - Child sexual abuse prevention strategies in youth serving organizations (Sexual Violence Prevention and ACEs)

- The Research Institute at Nationwide Children's Hospital
  - ACEs and opioid overdoses (ACEs)
  - Smartphone technology to improve teen safe driving (Motor Vehicle Injury Prevention)
  - Hybrid effectiveness implementation trial to improve safe driving among teens with traffic violations (Motor Vehicle Injury Prevention)
  - Opioid overdoses and child abuse and neglect (Opioid Use Disorder and Overdose Prevention)
  - Targeting adolescent insomnia to reduce suicidal behavior risks (Self-Directed Violence and Suicide Prevention)

- University of Iowa
  - ACEs and adult cardiovascular risk (ACEs)
  - Innovative technology for fall prevention in older adults with mild cognitive impairment (Older Adult Fall Prevention)
  - State driver licensing policy impact on older driver motor vehicle crash rates (Motor Vehicle Injury Prevention)
  - Opioid medication care plan to reduce older adult falls in rural areas (Opioid Use Disorder and Overdose Prevention)
  - TDV prevention program in rural communities (Sexual Violence Prevention)

- University of Michigan
  - Overdose and fall risk in benzodiazepine users (Older Adult Fall Prevention)
  - Opioid overdose risk due in context of changing prescribing patterns and overdose (Opioid Use Disorder and Overdose Prevention)

- State prescription opioid limitation laws and suicide outcomes (Opioid Use Disorder and Overdose Prevention)
- Translation of military / veteran crisis line for National Guard service members (Self-Directed Violence and Suicide Prevention)
- Association between state prescription opioid limitation laws and suicides (Self-Directed Violence and Suicide Prevention)

- University of North Carolina
  - Medicaid expansion and deaths due to opioid overdose, suicide, and homicides (Opioid Use Disorder and Overdose Prevention)
  - An ED patient-centered intervention to prevent long-term opioid use (Opioid Use Disorder and Overdose Prevention)
  - Patterns of IPV from adolescence to adulthood among sexual minorities and heterosexuals (Sexual Violence Prevention)
  - Adapting "Moms and Teens for Safe Dates" for web-based delivery (Sexual Violence Prevention)

- University of Pennsylvania
  - Role of ACEs and neighborhood exposures to health outcomes in African-American men (ACEs)
  - Innovative tech for fall prevention in older adults with mild cognitive impairment (Older Adult Fall Prevention)
  - Space / time characteristics of teen cell phone use while driving (Motor Vehicle Injury Prevention)
  - "Warm Handoff" approach to treating opioid use disorder in the ED (Opioid Use Disorder and Overdose Prevention)

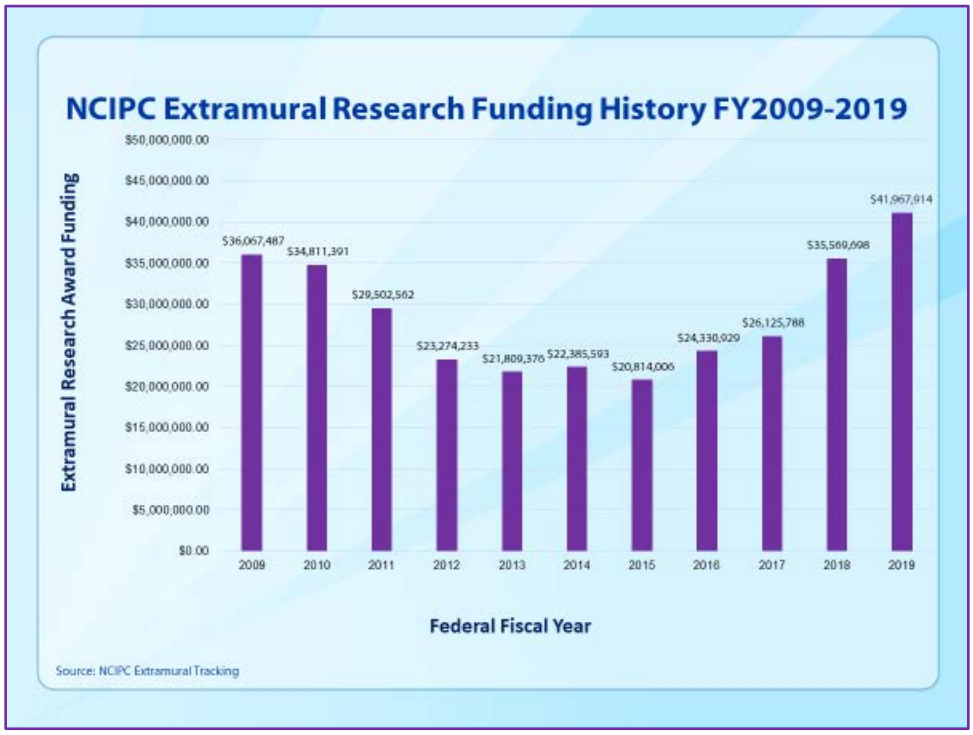
- University of Washington, Harborview Medical Center
  - Toolkit for fall prevention in long-term care facilities (Older Adult Fall Prevention)
  - Collaborative opioid taper approach to opioid use disorder prevention after trauma (Opioid Use Disorder and Overdose Prevention)
  - Evaluation of suicide prevention training for healthcare professionals (Self-Directed Violence and Suicide Prevention)
  - Return to Learn Implementation Bundle for Schools (RISE) after youth concussion (Traumatic Brain Injury Prevention)

Dr. Williams-Johnson indicated that these projects all will be conducted within the 5-year period of funding allocated to the IRCRs. It is important to note that a given project may start in Year 1 or later within the 5-year period. In the ICRC NOFO, the Director's three priority funding areas were a focal point of the research NCIPC was seeking. One of those areas is OUD and overdose, which has the largest pool of projects that were funded in the ICRCs. A key point to note is that many of the ICRC projects focus on children and youth, high risk populations, and minority populations. NCIPC believes that this is one of the successes that they were able to fund in the ICRC portfolio going forward.

In terms of the OUD and overdose prevention research that was funded in FY 2018 and 2019, a reverse site visit was conducted in September 2019 with the recipients of the FY 2018 funding. With the dollars available in 2019, they also were able to fund two additional awardees under the FY 2018 NOFO. There are now 14 grantees funded with FY 2018 dollars and an additional 8 that were funded with FY 2019 dollars. With respect to how the research portfolio for OUD and overdose prevention relates to the *CDC Strategic Framework for Opioid Use Disorder and*

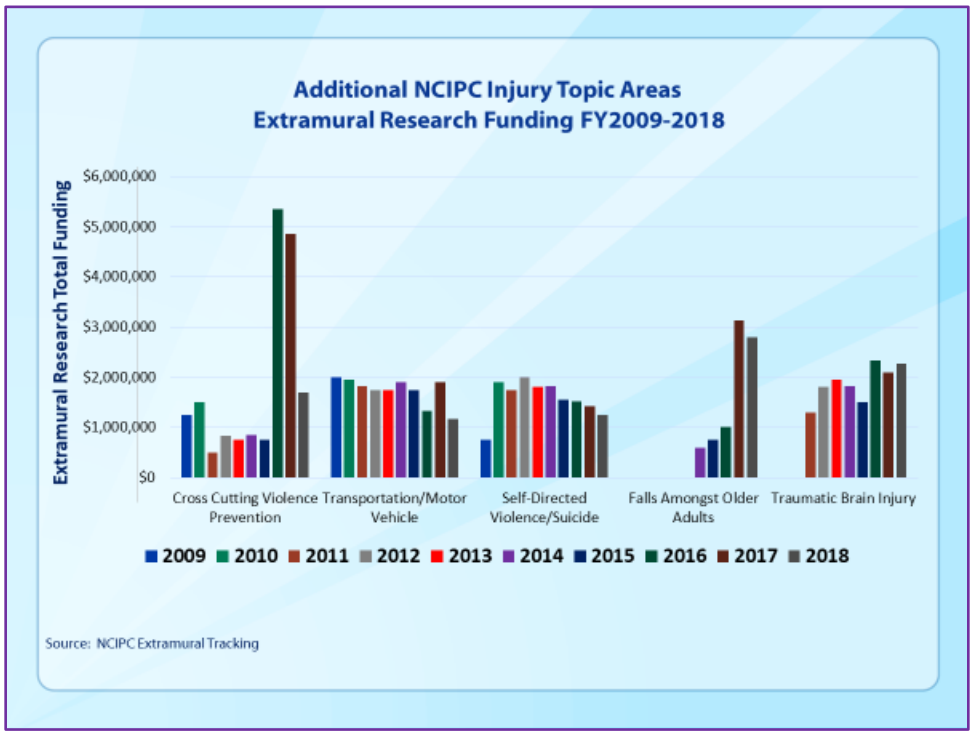
Overdose Prevention, research awards were made in the following categories: Conduct Research and Surveillance; Build State, Local, and Tribal Capacity; Support Providers, Health Systems, and Payers, and Partner with Public Safety. With respect to how the research efforts funded in FY 2018 and FY 2019 correlate to the topic areas that were specifically called out in the NOFOs, the primary and most significant difference in the FY 2019 NOFO is that the investigators were asked to evaluate existing state policies and strategies for preventing OUD and opioid overdose. In addition, the 2019 recipients were required to partner with a CDC-funded program. They know that this presented somewhat of a challenge with a 90-day period of publication, but NCIPC was still successful in having 8 meritorious applications to fund in the categories of Public Health/Safety, Linkage to Care, Support Providers, and Enhance PDMP Use.

Dr. Williams-Johnson shared a brief history of NCIPC's extramural research funding capacity. To a great extent, this reflects the levels of appropriated dollars to the respective program areas. Of particular note is that from 2015 to 2019, NCIPC has been able to double its research investment. This graph depicts NCIPC's funding history from 2009 through 2019:



To a great extent, the double of funding from 2015 to 2019 is reflective of the increased appropriations for evaluation of Rape Prevention and Education (RPE) Programs and OUD and overdose prevention programs. In terms of what that increased investment looks like across NCIPC's research priority areas for FY 2018 as FY 2019 data are not yet available, funding in 2014 (~$1.2 million) and 2015 (~1 million) reflects NCIPC leadership in funding research in the OUD and overdose prevention areas prior to having substantial available dollars from appropriations to address the opioid overdose epidemic at its earliest stages. NCIPC's investment in research for IPV and SV prevention for 2018 was $4,167,481 and for YV prevention was $7,472,925. YV funding has remained fairly steady with NCIPC's Youth Violence Prevention Centers (YVPC). NCIPC is excited that new research in the area of CM / CAN funding is going to increase R01 funding that is specifically focused on preventing ACEs,

CAN, and other forms of violence. Some of NCIPC's other areas are reflected in the following graphic:



To date, the following three NOFOs have been forecasted for FY 2020:

- ❑ CE20-001 Evaluating practice-based programs, policies, and practices from CDC's Rape Prevention and Education (RPE) Program: Expanding the Evidence to Prevent Sexual Violence (U01)

- ❑ CE20-002 Grants to support new investigators in conducting research related to Preventing Interpersonal Violence Impacting Children and Youth (K01)

- ❑ CE20-003 Grants for Preventing Violence and Violence-Related Injury (R01)

CE20-001 and CE20-002 have been published. This year, the R01 is focused on the evaluation of primary prevention strategies for preventing CAN and at least one other form of violence. New NOFOs will be posted on www.grants.gov in the coming weeks.

Discussion Points

Dr. Kaplan noted that looking at maps, some regions of the country are conspicuously absent. This is not only in terms of the geography, but also the populations. For example, there does not appear to be anything in Alaska, Hawaii, or the Southwest or among American Indian and Alaska Native (AI/AN) populations. Most of the funding appears to be East of the Mississippi and in the North and Northeast, which is unacceptable and needs to be addressed. He wondered whether that perhaps was because they need to do a better job of outreach and marketing. He requested further information about what they are getting from these centers and

what impact this is having, other than just publishing new studies. He wondered whether there have been policy changes and if someone is evaluating the long-term impact of these centers.

Dr. Williams-Johnson responded that they were very intentional with the NOFO this year, which was published in FY 2018 for funding in FY 2019, to try to get better geographic distribution for the ICRCs NCIPC funds to try to get better geographic distribution. While geographic distribution is considered, there are other considerations as well such as scientific merit and available funding. Applications were received from across the country, but they were not all successful. Based on what they experienced and what they saw in those applications, they have had dialogue about how to reach out more intentionally to build the pool of potentially successful applicants in the next cycle. As Dr. Houry indicated earlier, there is now a single cycle of 5 years. During that 5-year timeframe for the currently funded applications, NCIPC will have the opportunity to engage in more outreach and have a lot more dialogue to position the applicants who were not successful to be more competitive in the next cycle. Dr. Williams-Johnson directed the question pertaining to evaluation and impact of the ICRCs to Dr. Qualters, given that DIP has a number ongoing program efforts.

Dr. Qualters reminded everyone that the ICRC funding is not only for research, but also includes outreach and education activities. A considerable amount of work is being done with the various state health departments within their own states and also with other groups. For example, Johns Hopkins has done quite a bit of work in the past with Tribes. ICRCs also have collaborated on various activities. For example, in Michigan they are working closely with the state on their opioid prevention efforts. There is an effort to close the gap between research and practice, and based on what they learn from their other core state and other cooperative agreement programs to bring their needs to the ICRC. DIP is in the process of developing further evaluation of past work that has been done by the ICRCs.

Dr. Kaplan pointed out that what Dr. Qualters was describing was process, but he wondered whether there was an attempt to quantify the impact that the centers have.

Dr. Qualters said that they currently are working on the impact that centers have had or are having.

Dr. Houry added that in addition to CIRCs, NCIPC has tried to be much more intentional with respect to Tribal populations with opioid funding. They are funding 11 Tribal Epidemiology Centers (TECs) to help with the overdose and suicide work in terms of technical assistance (TA) and capacity. They also are funding Tribes directly. When they were expanding the NVDRS from 40 to 50 states, they knew that some states had not applied previously because they did not have the capacity. When those states applied and were not successful or NCIPC knew they were going to apply, TA was provided directly to those states and have now been successful in having all of the states apply.

Dr. Cunningham expressed an interest in knowing more about who the funded Principal Investigators (PIs), including information about race, ethnicity, and gender to ensure that there is diversity.

Dr. Williams-Johnson indicated that this is a program area that she and Dr. Greenspan have talked about with Dr. Gwen Cattledge, NCIPC's Deputy Associate Director for Science, and is something they want to bring online. Dr. Crawford was one of the first BSC members to engage them in terms of how they might build this outreach. The plan is to conduct a pilot with Dr. Crawford and some staff at Hampton University to try to have a dialogue on how to engage and

interact to get the word out about NCIPC's work and programs areas of interest, and to dialogue about what makes a successful applicant. They do receive applications from minority-serving applications. While she assumes that they receive applications from minority investigators, this may not be information to which they have access. The issue is the competitiveness of applications, so outreach involves speaking with communities about the peer review process, what peer reviewers look for, and how to strengthen their applications to help them be more competitive for NCIPC funding.

Dr. Greenspan added that the goal is to engage in outreach specifically and intentionally to minority-serving universities, Historically Black Colleges and Universities (HBCU), and Hispanic universities in order to get a better mix of investigators and reach in terms of the populations these areas serve.

Dr. Porucznik expressed appreciation for the efforts being made in the Injury Center about diversifying the applicant pool. In the time that she has been on the BSC, there has been increasing diversity even on the BSC though perhaps progress may be slow. She inquired as to how the BSC can help ERPO do its job better.

Dr. Williams-Johnson indicated that one thing that is very helpful is that the BSC conducts the secondary review process and weighs in with their recommendations on what NCIPC should fund based on the members' knowledge and expertise in the field. One thing NCIPC responded to real-time was the quality of the information that they provided to the BSC. They received BSC feedback about that in April and they responded with the provision of much better products for subsequent secondary review meetings. The BSC responds to the programs in terms of program areas and priorities, and that information translates into the development of future announcements.

Dr. Houry added that the BSC could disseminate information as well. Unlike NIH that has regular announcements, CDC's announcements are published only once a year. Therefore, people may miss announcements. They had a K01 program this year and while they did not receive as many applications as they wanted for that, it is important to fund junior investigators and the pipeline. The BSC could be instrumental in helping to disseminate information about the K01 program, because this program will not continue if an insufficient number of applications are received. She emphasized that BSC members also should encourage their mentees to apply.

Dr. Compton acknowledged that NIH could do a better job of partnering with NCIPC on outreach. They have the guide and individual listservs of their grantees in different area that they would be happy to share, which **Dr. Houry** said that NCIPC would welcome this.

Dr. Liller recalled that there was discussion during the last BSC meeting about the disproportionate number of centers in the East. Given that there are some excellent injury researchers in California and other areas, she wondered whether NCIPC ever thought about publishing a NOFO just for these particular areas versus the whole country. What happens is that existing ICRCs keep getting funded because they have gotten really good over the years at knowing how to write the applications and they have a lot of data. Others do not have these advantages. To balance this, perhaps a procedure could be implemented for only those centers that have not been funded within the last so many years. Granted, the applications may not be as great as what they are getting from experienced ICRCs. However, this would be a starting point and the applications would become good or better in a few years than current applications.

Dr. Williams-Johnson indicated that as they were moving forward to get all of the ICRC NOFOs on the same cycle, they had extensive discussions about some of these ideas. There are some limitations with regard to HHS grant policy on how they limit who can apply for applications, and the big push is not to have limited application pools. There also was an extensive discussion about the idea of sunsetting for historical ICRCs that have been funded for many years. That also was taken off of the table for this cycle, but she made a note to bring this back for discussion in the future.

Dr. Greenspan added that in the previous cycle, they funded a Developmental ICRC. One criterion was that an applicant could not have been a previously funded ICRC. The funding was much less for the Developmental ICRC, and that effort did not continue. Part of the issues has pertained to limitations around funding and being able to bring Developmental Centers along in addition to the existing ICRCs. There has been discussion about the balance, and perhaps this should be a future BSC discussion.

Dr. Frye proposed that the BSC discuss this further during the second day of the meeting. There are a number of ways to intentionally ensure that there is representation of all social groups, including bias in peer review. The NIH is looking closely at bias in peer review as well. The diversity of the reviewer pool is another potential influence on peer review outcomes.

Dr. Barnes expressed concern that others do apply, but are typically stopped within the peer review process because the reviewers do not recognize the issues of diverse populations, the evidence bases are different and often are not published, the methods often do not meet the reviewers' standards, and there are unique issues such as racial trauma, social inequities, health disparities, and absence of the general risk factors in which the dominant culture is interested. Therefore, major questions are left unanswered such as why young black males under 18 years of age are killing themselves at higher rates than their white counterparts. Diversification of the reviewers is very important to continue to think about. A panel of 20 reviewers with only 2 people of color is not diversification. She applauded NCIPC for inviting HBCUs, people of color, and different social groups to apply. However, it stops with reviewers and their lack of understanding what they are reading in reference to an application.

Dr. Williams-Johnson responded that Dr. Barnes' points were very well-taken. This is another area with which the BSC can help NCIPC. When NCIPC recruits, they have to ask reviewers to self-identify their race and ethnicity. NCIPC cannot determine that on its own. They are working diligently to find diversity in the peer review panels, but do struggle with this area. She requested that BSC members encourage people they know who are of different races and ethnicities to serve as reviewers. There is an open announcement for reviewers to submit their curriculum vita (CVs) to be a part of the reviewer pool to be considered, and reviewer recruitment is ongoing. Any assistance to help increase diversity on the peer review panels is welcomed.

Dr. Chou pointed out that the ICRC topics are very different. An ICRC that is very good at TBI may not have any expertise in opioid overdose prevention or SV prevention. That may discourage a lot of places that have really good expertise in one area from applying, and may water down some of the other applications because people are sending out emails to try to get people to sign on and are just assembling a group of random people. Placing emphasis on having broad expertise and expertise in disparities may help to improve the number and diversity of the applications.

Dr. Williams-Johnson indicated that the NOFOs include that type of language, but they can review it to think about how to strengthen the language to call more attention to it.

Overdose Prevention Research Priorities

Erin Parker, PhD, Acting Associate Director for Science
Lace DePadilla, PhD, Health Scientist
Office of Associate Director for Science
Division of Overdose Prevention
National Center for Injury Prevention and Control
Centers for Disease Control and Prevention

Dr. Parker discussed the update to the Injury Center's overdose research priorities. These priorities will be used to guide the Injury Center's extramural research funding opportunities, as well as intramural research related to overdose for the next 3 to 5 years. The process of updating the priorities began last year with a review of the opioid overdose research portfolio since 2012. That review was presented to the BSC in June 2018 and NCIPC received input from the BSC on those priorities, including the recommendation that they update the priorities with a 3 to 5 year time horizon. The initial input provided by the BSC and some additional context related to the evolving drug overdose epidemic and the newly developed DOP goals and strategies were incorporated into the update for this session.

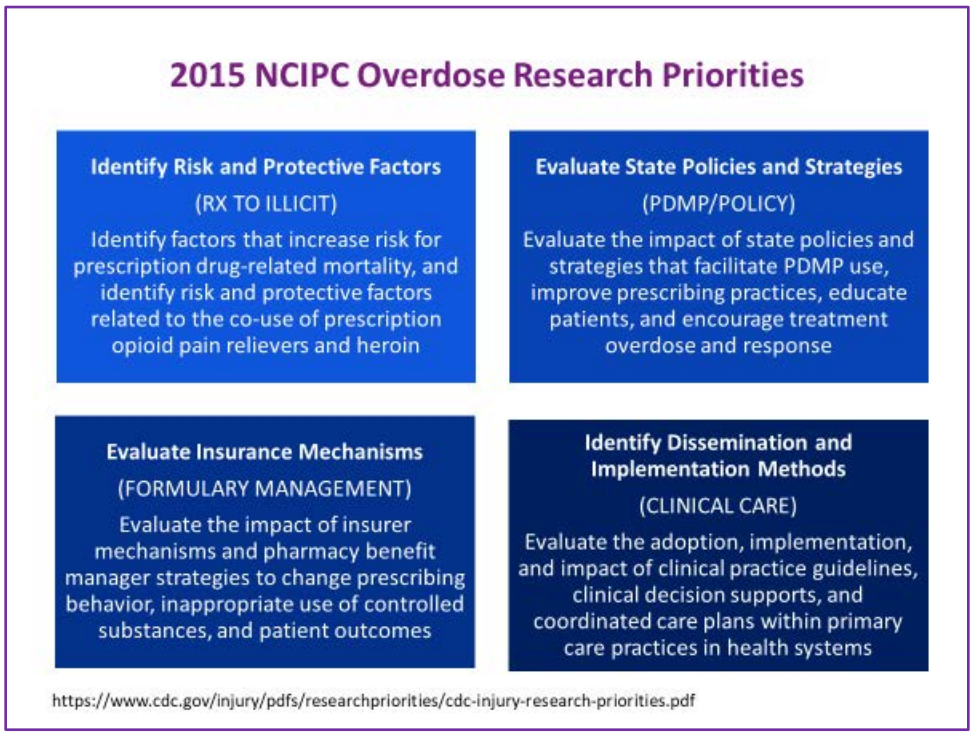
One of the key factors that influenced the updated research priorities was the evolving drug overdose epidemic. As described previously, CDC talks about the rise in opioid overdose deaths in three waves. The first wave was the initial increase in overdose deaths involving prescription opioids. The second wave was the increase in deaths involving heroin, which began in 2010. The third wave beginning in 2013 refers to the increase in overdose deaths involving synthetic opioids, such as illicitly manufactured fentanyl. There also have been recent increases in overdose deaths involving cocaine and psychostimulants. In 2017, nearly a third of all overdose deaths involved one or both of these drugs. In many cases, these deaths also involved opioids.

The updated research priorities also reflect the new DOP's mission and goals. The mission of the DOP is to monitor, prevent, and reduce harms associated with drug use, misuse, and overdose. The DOP has 3 primary goals, which are to: 1) reduce opioid overdose now; 2) identify and address emerging drug trends and associated public health outcomes; and 3) prevent drug use initiation or drug misuse among youth and young adults. To achieve these goals, the DOP's strategy has focused on the following 6 areas:

- ❑ Monitoring trends
- ❑ Advancing research
- ❑ Building state, tribal, local, and territorial capacity
- ❑ Supporting health systems, healthcare providers (HCP), and payers
- ❑ Partnering with public safety and community organizations
- ❑ Increasing public awareness

The 6 strategies inform all aspects of DOP's work from the funding of research grants and programmatic cooperative agreements to the intramural research conducted by DOP's scientists. Therefore, these strategies also are reflected in the updated research priorities.

Before reviewing the 2019 updates, Dr. Parker reminded everyone of the prior opioid overdose priorities released in 2015. At the time of the development, the focus was still largely on prescription drug overdose, although the co-use of prescription opioids and heroin was also a concern at the time. That focus on prescription drug overdose is also apparent in the inclusion of primarily health system interventions. The 2015 priorities are shown here:



In terms of some of the key ways the research priorities have evolved, the updated priorities are more broad, expanding beyond opioids and prescription opioids to incorporate polysubstances, cocaine, psychostimulants, and other emerging drug threats. The outcomes of interest have expanded beyond overdose to include use and other related harms. The interest in health system interventions has been expanded to include public health-public safety collaborations, and other community-based interventions. Finally, the 2 other Injury Center priorities of ACEs and suicide have been incorporated into the research priorities.

Dr. DePadilla presented the updated priorities. She began by pointing out that the evaluation of the drug overdose epidemic is highlighted in the update to the 2015 research priority that was largely focused on risk and protective factors for prescription opioid overdose. The expanded and updated priority is to identify risk and protective factors for drug overdose, with a focus on opioids, polysubstances, and emerging drugs. It is known that risk and protective factors for drug overdose exist at multiple levels of the social ecology. Addressing the drug overdose epidemic will require a better understanding of the unique risk and protective factors for the multiple trajectories and combinations of drug use, use disorder, and overdose. NCIPC is interested in how risk and protective factors and trajectories vary in several domains listed here:

- ❑ Prescription opioids, illicit opioids, and other emerging drugs
- ❑ Polysubstance use, including co-use of opioid and non-opioid drugs
- ❑ Sociodemographic and geographic characteristics
- ❑ Early drug use initiation and escalation of use

They also want to better understand associations among ACEs, opioid use and misuse, and chronic pain and how these associations may vary in different contexts and among different groups. Finally, they want to examine norms and behaviors surrounding use, misuse, and overdose and related outcomes and learn how best to communicate about those risks to the public. The identification of risk and protective factors can lead to the development of theory-based behavioral and communication interventions that may reduce drug use and related harms. A more nuanced understanding of the complex nature of opioid, polysubstance, and emerging drug use trends is needed in order to develop and implement effective interventions.

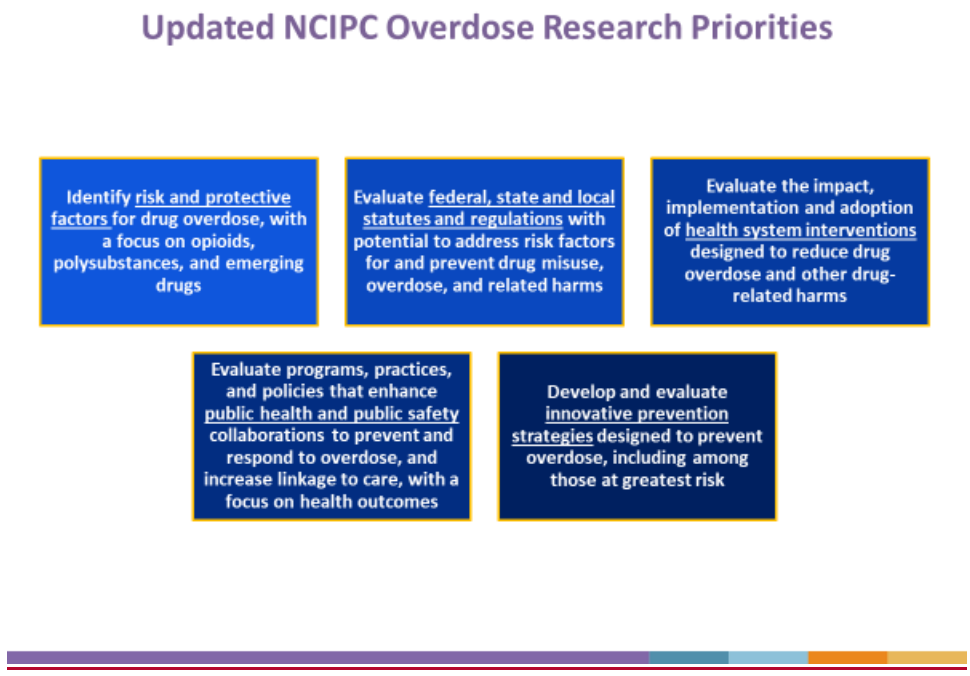
The focus on policy also has expanded to be more broad than prescribing practices and to include overdose-related harms. The updated priority is to evaluate federal, state, and local statutes and regulations with the potential to address risk factors for and prevent drug misuse, overdose, and related harms. Statutes and regulations of interest include those that focus on facilitating PDMP use, improving prescribing practices, and facilitating linkage to OUD treatment and overdose response such as naloxone provision. They also want to understand unintended consequences and benefits of these statutes and regulations, as well as what factors may mediate the effect of policy interventions. Understanding the impact of existing federal, state, and local statutes and regulations is useful for informing implementation and decision-making.

As mentioned previously, the 2015 priorities were primarily health system interventions. These interventions are still very important to NCIPC's efforts. In the 2019 update, 2 health system priorities focused on insurers and clinical settings have been combined into a single research priority. The updated priority is to evaluate the impact, implementation, and adoption of health system interventions designed to reduce drug overdose and other drug-related harms. Provider and health system approaches provide an opportunity to implement interventions that can change prescribing behavior and reduce risks associated with prescription drug misuse and illicit drug use, including overdose. These approaches also can aid in retaining patients in treatment. Also as part of this priority is the aim to understand the impact of insurer, pharmacy benefit manager, and pharmacy-related strategies that can increase access to drug use disorder treatment, including medications for treating OUD; increase the use of non-opioid therapies for pain management; and increase access to naloxone, ED overdose protocols, and linkage to care for and additional health and social services that are needed to improve health outcomes. It also is important to understand the impact and unintended consequences of these interventions, as well as the factors that serve as barriers and facilitators to adopting them.

In addition to the 3 updated priorities, there are 2 new intervention-related areas of focus. One focuses on public health and public safety interventions, and the second focuses on other innovative prevention strategies such as community-based programs. The first new priority is to evaluate programs, practices, and policies that enhance public health and public safety collaborations to prevent and respond to overdose and increase linkage to care, with a focus on health outcomes. It is known that public safety partners such as police, courts and corrections, Emergency Medical Services (EMS), fire fighters, and other first responders frequently interact with people who use drugs and play a critical role in responding to opioid and other drug overdoses. They are engaging in intervention strategies such as linkage to programs to directly connect individuals with drug use disorders to healthcare and other services, and programs aimed at increasing access to and use of naloxone to prevent opioid overdose deaths. There is an interest in understanding the effectiveness of such interventions, including those that incorporate referrals for ACEs and social and behavioral services. It is also of interest to understand barriers and facilitators of the uptake of such interventions.

Reducing the burden of drug overdose requires addressing drug use from multiple fronts, including preventing initiation or continuation of drug use and preventing use from increasing risk for overdose or death. The last priority is to develop and evaluate innovative prevention strategies designed to prevent overdose, including among those at greatest risk. State and local communities are implementing a variety of innovative strategies to address known risk factors and prevent drug use and overdose, but there is limited knowledge on the impact or cost-effectiveness of these strategies. Moreover, shared risk factors for poor health outcomes suggest that programs that are intended to address another risk factor or health outcome may also be effective for reducing drug use and drug overdose. There is an interest in understanding the effectiveness of new and translated interventions, and in learning more about other settings for interventions such as the school- or faith-based settings. It is also important to understand barriers and facilitators to the implementation of community-based strategies, and also how prevention and treatment approaches can be effectively tailored for the unique risks associated with emerging drugs or drug combinations.

In closing, Dr. DePadilla emphasized the importance of allowing for feedback on these research priorities. One area for which BSC's input pertained to thoughts on stakeholders that should be engaged in the review of the updated priorities.



Discussion Points

Dr. Floyd said that speaking as an internal medicine physician who has been practicing for 31 years, he recalled the era on the other side of the pendulum about 15 years ago when pain as the 5th vital sign got over-hyped and there were all of these great new pain medications that were underutilized and patients were in pain. Based on that, he has had patients who have been on pain medications in conjunction with pain centers that are well above the CDC guidelines for prescriptions for various reasons. He now has all of them on tapers and is working with their pain management specialists. One of the major concerns is that if they stay above

those guidelines, the insurers will cut them off and deny access. With that in mind, he wondered exactly how NCIPC is working with insurers and how they will ensure that insurers will not just lop off access to patients who have been through these eras and pendulum shifts to protect them from withdrawal and other complications of abrupt discontinuation or lack of access to their medications. With one exception, the patients he has had on tapers have done very well. He has been surprised that he has been able to taper people as much as he has been. He wondered as part of their studies whether NCIPC is measuring what is happening to patients in terms of their pain, quality of life, and functional status when they are put on tapers in response to the regulations.

Dr. Parker said that they certainly appreciate those concerns. She clarified that this was the broad overview of the research priorities for the extramural funding that will be going out and intramural funding NCIPC does in-house. These are not necessarily things that are all being done right now. Certainly, a lot of it is driven by the applications received in response to these areas of interest. NCIPC is definitely interested in having the projects they fund consider other factors about pain, quality of life, and functional status. Overdose prevention is one of NCIPC's main focus areas, but they also want to attend to these other outcomes. She called upon Dr. Jan Losby, who leads the Health Systems and Research Branch within the DOP, to elaborate on any efforts they have underway currently with insurers.

Dr. Losby indicated that they have a project underway to better understand how pain is being managed for patients in chronic pain in terms of non-pharmacologic, opioid, and non-opioid management. That is a national evaluation that is engaging health systems and assessing function and to better understand the ways in which pain is being managed under the current environment, including CDC's guideline and recognizing that many states have legislated or instituted requirements or thresholds related to access to various pain management treatments. In terms of insurers, they are collaborating closely with the Centers for Medicare & Medicaid Services (CMS) on a number of efforts that currently are underway. Through the OD2A program, they have natural partnerships with state Medicaid programs to better understand the payer scenarios that are being investigated at the local and state levels. More anecdotally, they have reached out to private insurers at various times through the implementation of the guideline and have launched a couple of initiatives to document case studies in collaboration with them to understand what is helping to inform pain management decisions.

Dr. Houry added that the tapering guide, which was an HHS effort at-large, should help inform insurers and other clinical care and ensure that there is an understanding of slow tapering, what the purpose of the guideline was, etcetera. She also requested that Dr. Losby elaborate on the coordinated care plans.

Dr. Losby indicated that they have a quality improvement imitative that is currently being implemented in 11 health systems across the US, including some Indian Health Service (IHS) clinics. Soon after the guideline was released, they collaborated with clinicians in the field and IT specialists to create quality improvement measures that would map on to the 12 recommendation statements. This was an effort to help practices have quality improvement measures so that they could track ways in which pain is being managed at the practice-level. Through that effort, they have a close collaboration with a number of health systems that are documenting how pain is being managed, issues around quality of care, and care coordination to understand pain management within the broader context of primary healthcare and behavioral health.

Dr. Parker added that in the updated research priorities, they emphasized the importance of including unintended consequences and benefits to ensure that everyone they are funding for research is thinking about that as they are implementing programs.

Dr. Dowell acknowledged that as was pointed out, the guideline recommended caution in increasing dosages above the threshold. It was widely misinterpreted and misapplied, including by insurers, to say that people already on high dosage long-term all should come down right away. CDC has made efforts to clarify that by publishing a piece in the *New England Journal of Medicine (NEJM)*, writing letters to professional societies, and working directly with CMS to soften policies that they thought were citing and misinterpreting the CDC guideline.

Dr. Cunningham observed that since so much of the effort has focused on opioid prescribing up to this point, she was glad to see that the priorities were expanded to other substances. Stimulants and benzodiazepines are very important and emerging, and expanding to think about treatment of addiction as prevention for overdose is also important. In terms of treatment of addiction, she is very interested in how CDC is partnering with other federal agencies. Part of the challenge is that it feels like nobody owns this. The Substance Abuse and Mental Health Services Administration (SAMHSA) works only with a very small part of the healthcare system, the Health Resources and Services Administration (HRSA) works with another small part of the healthcare system, and then there is everything else. If only 10% to 20% of people who need treatment get treatment, it is not clear how treatment will be expanded given the segregated systems. Hopefully, CDC can help to bring this together and collaborate with other agencies. She did not hear anything about criminal justice, though that is an area where tremendous work is needed in that people in that setting are at very high risk. She also did not hear anything about harm reduction. While she heard "community," it was not clear exactly what that means. Thinking about how harm reduction fits into this is very important. Consideration must be given to people who are not presenting to the healthcare system, and partnering with harm reduction agencies. In terms of pharmacies, there is a lot of effort to distribute naloxone. However, when patients actually go into a pharmacy and ask for it, they rarely come out with it. Consideration must be given to how to work with pharmacies to expand naloxone distribution.

Dr. Parker indicated that they are definitely interested in working with pharmacies in terms of understanding the effectiveness of programs that were implemented in pharmacies to distribute naloxone. Certainly, that would fit within the priorities. She will need to review the text to determine whether harm reduction is included, but thinks it is in the longer document. It certainly is their intent to understand the implications of harm reduction programs on overdose, and that fits within the priorities as well. Public health/public safety effectively captures criminal justice. This year, two of the projects NCIPC funded were in criminal justice settings. That is an important area of interest as well in terms of research and programmatically. They also have worked with the High Intensity Drug Trafficking Areas (HIDTA), which she called upon Dr. Baldwin to elaborate on.

Dr. Baldwin indicated that as part of their public health/public safety partnerships, they have a growing partnership with the HIDTA program, which is under the rubric of the overdose response strategy, in 30 states across the country. A signature piece of that overdose response strategy is annually producing a cornerstone project that queries law enforcement and others across the country on a key sentinel issue. One year they looked at Good Samaritan laws, and are currently assessing how to improve attention to justice-involved populations. He attended a meeting at Bloomberg Philanthropies over the last day or so in which a considerable focus was on reaching justice-involved populations. CDC also works very closely with its other HHS colleagues as part of the HHS Behavioral Health Coordinating Committee (BHCC) to help build

bridges across the HHS operating divisions to make sure they are not as siloed as may be perceived. They always could engage in more collaboration, but he thinks it has been largely successful.

Dr. Houry added that some of the ERPO projects are in drug courts and some have focused on MAT and incarceration. The OD2A grants in the states and local health departments focus on a lot of this work, including linkage as one of the required pillars. That is where they look for innovation. One of the projects is a "warm handoff" with EMS in the field and linking people to treatment. The areas are in the research agenda, but if an area is not spelled out, that is because it also is part of the state health programs. While they are thrilled to have additional dollars for research in opioids, that is certainly not where the majority of their dollars go for drug overdose. A lot of funds go to state and local health departments, so NCIPC is trying to build some of the innovation in there as well.

Dr. Parker pointed out that ERPO NOFOs that Dr. Williams-Johnson discussed encouraged the applicants to work with the OD2A program applicants. That is programmatic work, but they wanted to tie it to the research work in order to understand the effectiveness of many of the activities being implemented through the OD2A grants. She called upon the other federal agencies who may have something to add.

Dr. Compton stressed that the opportunity to build on other federal programs like those that were mentioned is extraordinary and can be highlighted in initiatives with simple language stating, "building on existing infrastructure is encouraged." For instance, NIDA had a specific initiative that required grantees to work within the SAMHSA State Targeted Response to the Opioid Crisis Grants (Opioid STR) and State Opioid Response (SOR) grants as one way to try to leverage existing infrastructure developments for innovative practice development. There might be other opportunities in HRSA and Medicaid. It is difficult to pull these off because it is one research project in a large universe of service delivery systems, but they turn out to be very efficient and often there is a way to implement them more widely when they are embedded within a larger system of care that way. NIDA has invested in a lot of these areas and appreciated the opportunity to share their portfolio with NCIPC on an ongoing basis, because they are really excited about the work NCIPC is doing, particularly with the public health system. While that is part of NIH's mission, it is not always as central to it. It is a unique focus of CDC's efforts that can help everyone.

Dr. Chou observed that the trends they are seeing are going to be very important and that it is important to break out substances going forward, such as breaking out tramadol and fentanyl would be useful because these are not the same drugs or risks at all. In the effort to expand the use of buprenorphine (BUP), they need to be able to show that somehow. Everyone thinks that BUP is a lot safer, but it is very difficult to come by any published data on whether overdoses are occurring with BUP. There is very little evidence on optimal tapering strategies, and it is very difficult to study this. In observational studies, confounding is difficult to address because the people they want to taper quickly are those who are believed to be at highest risk. This is very difficult to deal with that using existing databases. Studies that are specifically designed to address tapering strategies are going to be critical.

Dr. Parker noted that one of the challenge with breaking out different drugs is that they are limited by whatever the classification system is. For the death data, they are limited to the ICD-10 categories. However, there are other opportunities such as the literal text analyses.

Dr. Baldwin added that part of what is being funding in OD2A through the SUDORS is to determine all of the drugs on board for a decedent in order to try to parse out how the epidemic is changing. Based on assessing specific drugs and drug combinations, they in fact are changing over time. Part of why they are funding SUDORS is to try to understand drug combinations and the circumstances that change over time.

Dr. Cunningham said that her impression is that when a lot of funding goes to states, it goes to a single state agency that basically is often doing business as usual. That is not going to "move the needle." With that in mind, she wondered whether CDC has the opportunity to be more directive in what the states do with the dollars they receive in terms of collaborative efforts and shifting beyond the traditional sort of drug treatment programs.

Dr. Houry indicated that they tried to build that into the requirements in that 20% minimum of the funding has to be allocated to local communities. They provided examples of what constitutes linkage to care sites, including faith-based, communities, and organizations. NCIPC also funds some partner organizations, such as the National Association of County and City Health Officials (NACCHO) and Association of State and Territorial Health Officials (ASTHO), to help provide those connections and additional TA. Part of this has to do with the Congressional language, but they have tried to build in TA and flexibility in the grants where they can to help direct that.

The Opioid Crisis & Implications for Workers, Employers, and the Nation

L. Casey Chosewood, MD, MPH
Lore Jackson-Lee, MPH
National Institute for Occupational Safety and Health
Centers for Disease Control and Prevention

Dr. Chosewood provided an update on the National Institute for Occupational Safety and Health's (NIOSH's) response to the opioid crisis. He indicated that NIOSH is one of a dozen or so centers at CDC. NIOSH is headquartered in Washington, DC largely because they work closely with the Occupational Safety and Health Administration (OSHA). NIOSH conducts much of the research that informs the Department of Labor's enforcement of workplace safety and health rules and regulations. He indicated that during this session, he would focus primarily on the interface between work, working conditions, employment, and the opioid overdose crisis. It is known that there are certain very important connections between all of these things, and NIOSH employs a lifecycle approach to looking at this from an occupational safety and health standpoint. He concentrated on two questions: 1) Why are those in certain industries and occupations at greater risk for opioid overdose?; and 2) What is it about working conditions, employment arrangements, benefits provided as part of work that are at play here as well? In addition, Dr. Chosewood discussed important ways that NIOSH believes the workplace can be used as a platform to prevent first-use of opioids by preventing injury, and to help intervene for people who do have a substance use disorder (SUD). It is known that return to work and continuing employment are important parts of recovery as well, so NIOSH believes that workplaces have a very important role to play in this setting.

Certainly, workers are in the very center of the opioid overdose epidemic. In 2017, 95% of the 70,067 US drug overdose deaths occurred among the working age population among persons between ages 15-64 years. According to the National Survey of Drug Use and Health (NSDUH), an estimated 4.3% of respondents age 18 years or older reported illicit opioid use in the past year. An estimated 66.7% of these self-reported illicit opioid users were employed full- or part-

time. Data from the 2018 survey update these numbers somewhat, but they are basically unchanged. In the 2018 survey, 3.8% of respondents age 18 years or older reported illicit opioid use in the past year and about 65% of these self-reported being employed full- or part-time. This survey specifically characterizes misuse of opioids as either misuse of prescription opioids or use of illegal opioid substances.

It is known that drug and alcohol deaths in US workplaces are increasing. The Bureau of Labor Statistics (BLS) reported that overdose deaths at work from non-medical use of drugs or alcohol increased by at least 25% annually between 2013 and 2017. Workplace overdose deaths reported in 2016 accounted for 5.3% of occupational injury deaths that year, compared to 1.8% in 2013. It is no surprise that people with SUD have increased absenteeism as well. Workers with a current SUD miss an average of about 15 days of work per year, while those with a pain medication use disorder miss an average of 29 days per year. This is in contrast to an average of 10.5 days for most employees. Motor vehicle crash is the leading cause of workplace death across all industries and occupations. For the first time on record, the odds of dying from an accidental opioid overdose are greater than dying in a motor vehicle crash. This is important, because there is at least one state (Massachusetts) in the nation where opioid overdose or drug overdose death is the leading cause of workplace fatality. The fear is that this will occur in more states.

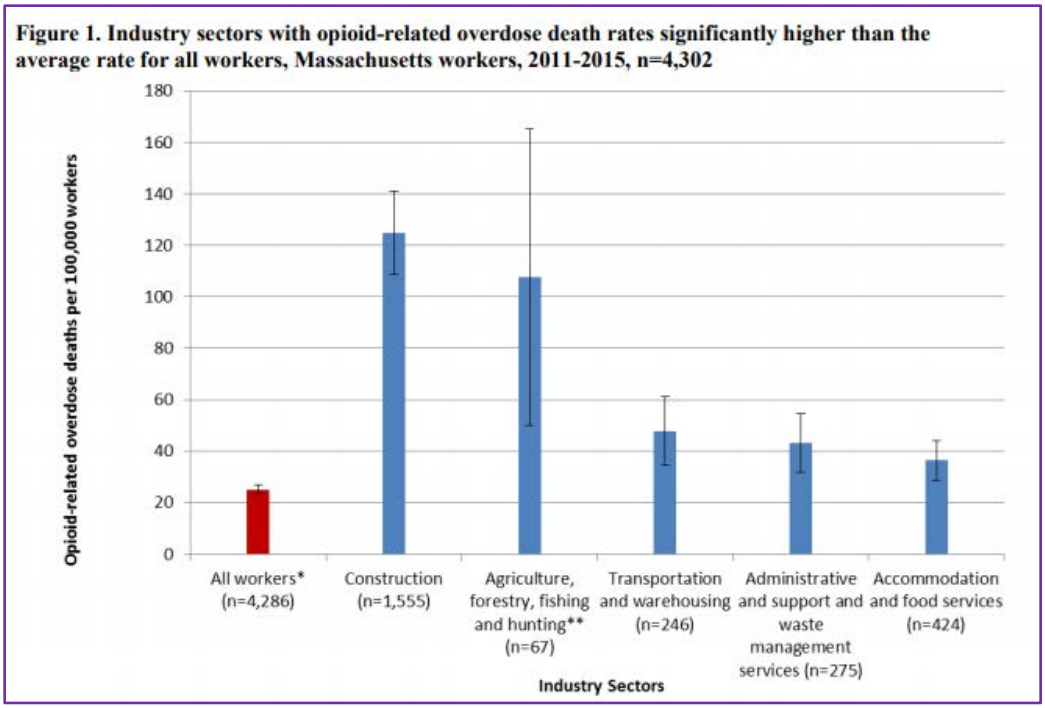
In terms of what is known about the connection between opioids and work, having no job at all is a significant risk factor for opioid overdose deaths. Having a job that is insecure, without the guarantee of an ongoing income, also increases the risk. Hazardous work or having what some might term a “bad job” that predisposes them to injuries or that predisposes them to day-in-day-out pain because of the nature of the job demands is a risk for opioid overdose death. Low wage workers are at increased risk. It is known that work is an important social determinant of health (SDOH) in many ways. The connection between wages, working conditions, and opportunities for continued employment are at play here. In terms of the lack of certain benefits, research shows that the risk of overdose death is higher among workers with no paid sick leave. This is most likely because they are going to work in order to keep getting paid because they do not have paid sick leave, and they are using pain medication in order to be able to work. There are certain very important industry and occupation variations in the overdose crisis, as well as some geographic differences. Regarding the geographic differences, the origins of this crisis have appeared in places that were quite hard-hit economically, especially in the 2008 downturn. “Early fires” were seen in the Rust Belt in Appalachia, certain areas of New England, and rural areas where there was a significant amount of loss of manufacturing and other jobs. Other trends are occurring in the second phase of the opioid overdose epidemic.

An interesting survey from the National Safety Council (NSC) showed that 75% of employers say their workplace has been impacted by opioids, so this is quite pervasive across all workplaces. Less than 1 in 5 (17%) employers feel extremely well-prepared to deal with this. About 31% report an overdose, arrest, near miss or injury due to opioid use. Only half are very confident they have the appropriate Human Resources (HR) policies and resources to deal with opioid misuse. Perhaps most startling is that only 4 in 10 employers would return an employee to work after he/she receives treatment for misusing prescription opioids. In many ways, this is an indictment of the current approach to how the nation is treating this clearly preventable and treatable chronic brain condition. This is especially important because employment is so vital to continued and sustained recovery. Despite effective treatment, only 1 in 5 (25%) receive any treatment for OUD and fewer than that receive the gold standard of medication-based treatment.

With regard to some of the data that have been uncovered between the connections of work and the opioid-involved overdose deaths, NIOSH published *Occupational Patterns in Unintentional and Undetermined Drug-Involved and Opioid-Involved Overdose Deaths — United States, 2007–2012* in August 2018 in the *MMWR*. This research examined nearly 60,000 overdose deaths within 26 job groups. Using the metric of Proportionate Mortality Ratio (PMR), this study found that drug overdoses were highest for the following 6 occupational groups:

- ❑ Construction (highest PMR for heroin and methadone)
- ❑ Extraction (oil and gas, mining, sandstone and gravel workers) (highest PMR for natural and semi-synthetic opioids)
- ❑ Food preparation and serving
- ❑ Health care practitioners and technical occupations in healthcare (highest PMR for synthetic)
- ❑ Health care support
- ❑ Personal care and service

PMR also was significantly elevated for “unpaid/unemployed.” The drugs and overdoses varied among industries and occupations as well, perhaps reflecting first use of opioids, antecedents leading to prescribing, the causes of the first use of opioids, and access to opioids.
Turning to state-specific data, Massachusetts has been at the forefront in examining the connections between work and overdose deaths. As mentioned earlier, opioids and other drugs are the leading cause of workplace fatality. The Massachusetts Department of Public Health (MDPH) published *Opioid-related Overdose Deaths in Massachusetts by Industry and Occupation, 2011-2015* in August 2018. This study found that the opioid-related death rate for those employed in construction and extraction occupations was highest at 6 times the average rate for all Massachusetts workers. Geographically important, they also found high rates of overdose deaths amongst cold water fishery workers. Other occupational groups with higher than average rates included: Farming, Forestry, Material Moving, Installation, Maintenance and Repair, Transportation, and Others. Here is a graphic form showing high rates in construction and the fishing industry compared to the average of all workers in red:



Perhaps most importantly, this work also started to draw correlations between overdose deaths and certain conditions of employment. This study found that the rate of fatal opioid-related overdose was higher among workers employed in industries known to have high rates of work-related injuries and illnesses. Additionally, rates were higher among workers in occupations with lower availability of paid sick leave and lower job security.

An updated report, *Fatal Injuries at Work: Massachusetts Fatality Update 2016-2017*, actually named unintentional overdose in the workplace was the leading single cause of fatal injury at work in 2016-2017. Unintentional overdose, drugs, or alcohol resulted in 54 fatalities (25%) during that timeframe.

Turning to the NIOSH Framework to Address Opioid Misuse, the top half of this graphic is fairly new work for NIOSH looking at antecedents of use and determining those risk factors that have an intervenable opportunity based around occupation and work:

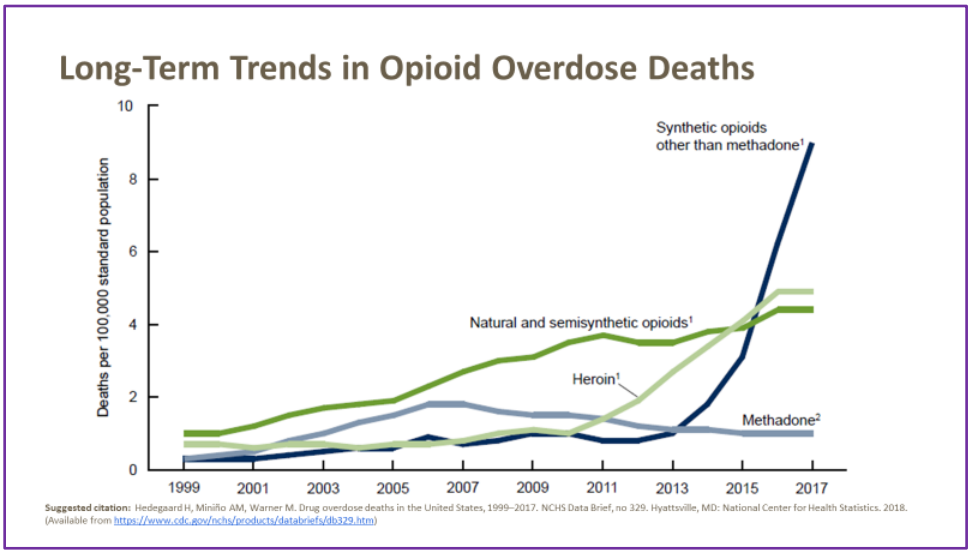
The lower half of this framework represents NIOSH's traditional work. For example, NIOSH has a mandate to protect workers and responders who as part of their official duties may come into contact with illicit opioids. This would include first responders, police officers, fire fighters, people who process evidence for the legal system, and perhaps people who have to decontaminate or clean up certain contaminated areas. This is an important area of work for NIOSH for which they feel quite a bit of additional research is still needed. Because so much importance, especially in protecting workers, is based on the ability to understand real-time exposures, better mechanisms are needed to detect what potential exposures workers may be facing as part of their regular work.

NIOSH Director, Dr. John Howard, has asked NIOSH to take a very comprehensive approach to examining antecedents, protecting workers involved in the response, and conducting field investigations to better understand the risk. They are using what is known as a *Total Worker Health*® (TWH®) to examine workers' risk on the job and away and a broad set of interventions to help them through this epidemic. TWH is defined as "Policies, programs, and practices that integrate protection from work-related safety and health hazards with promotion of injury and illness prevention efforts to advance worker well-being."

NIOSH's ongoing work to address the crisis is examining work-related factors and exposures as risk factors for initial opioid use or subsequent use. They would like to have better surveillance to better understand the crisis though important occupational lenses, which they think is a critical piece of this story to tell. NIOSH also is happy that they have a number of existing workers' compensation partnerships, which are turning out to be a rich source of information for this crisis. NIOSH obviously will continue to protect workers who respond to the crisis as part of their job. They are developing recommendations for exposure prevention for first responders, healthcare workers, and other frontline groups. NIOSH's most visited webpages include their recommendations around responders who may be exposed to fentanyl. They want to move into using the workplace as a powerful tool to help prevent and treat those people who already have SUDs.

The Workers' Compensation data is important and is a rich source, because it is one of the few areas in which there is information about workplace injury, occupation and industry, medical outcomes, disability, return-to-work trajectories, and prescribing data. This is a very useful intersection of important information. A NIOSH-funded study by the Workers' Compensation Research Institute (WCRI) found that rates differed based on several factors. With regard to the industry in which the injured worker is employed, Mining (including oil and gas) and Construction again were found to have the highest opioid dispensing rates, followed by Agriculture, Forestry, Fishing, and Public Safety. It is really no surprise that this mimics some of the overdose death data. Company size, based on payroll, plays a roll. Smaller companies had higher opioid dispensing rates than larger companies. Injured worker age is also important in that older workers had higher opioid dispensing rates than younger workers. In terms of county-level factors (based on the county in which the injured workers resides), rural areas had higher opioid dispensing rates than urban areas. Areas with low rates of health insurance had higher rates for opioids prescribing than areas with high rates of health insurance. Injury type also influenced the likelihood of an opioid prescription. Fractures and carpal tunnel syndrome (CTS) had the highest opioid dispensing rates, followed by neurologic spine pain.

This graphic is a reminder of something dramatic occurring when fentanyl and other synthetic opioids came on the scene, which coincides with a dramatic increase in the number of drug seizures containing fentanyl after 2013:



Fentanyl is 50 to 100 times more potent than morphine, and has become the centerpiece of many of NIOSH's field investigations. To date, NIOSH has had 14 projects assessing hazards to emergency responders and other groups of workers. These were implemented at the request of local jurisdictions, police, and EMS groups because of symptoms that workers had while responding to an overdose scene. There are several early key findings from these projects, and other projects are underway. NIOSH is called in after the fact, so it is very difficult to reconstruct exactly what is occurring in these scenarios. They have some video camera footage that has been instructive, but what is lacking is the ability to collect real-time biomonitoring samples to determine what kind of exposures these workers may actually be having. The capability of the CDC/NCEH Laboratory Response Network (LRN) now provides an opportunity to detect exposures to fentanyl, fentanyl analogs, and other drugs at very low limits of detection. That kind of research needs to be done to help answer these questions. Currently, it is uncertain

whether the symptoms experienced by workers reflect exposure to fentanyl, despite the use of naloxone in some of these settings with improvement in symptoms, or whether they represent exposures to low levels of other drugs. Almost all of NIOSH's field investigations involve polysubstance exposures or circumstances. What is known is that the ill effects suffered by these workers certainly interfered with their ability to continue the work. Thus, it is really a mandate to find ways to better understand, better prevent, and perhaps better protect these workers.

NIOSH has a number of resources, some of which have been visited more than 5000 times per month. The new NIOSH webpages on opioids feature the NIOSH Framework and sub-pages on Data Collection, Field Investigations (peer-reviewed articles), Research (intramural and extramural), and Resources. The Resources page includes Tools for Workplaces, Research on Workplaces, and General Resources. The NIOSH Workplace Safety & Health Topics webpage includes pages on Fentanyl, Protecting Workers at Risk, and a great new toolkit that was updated in November 2019 that provides some videos and other recommendations for protecting workers in these areas. Dr. Chosewood said that perhaps he was most proud of NIOSH's work pertaining to naloxone and MAT, because he thinks it is important for them to help employers see the value of keeping people at work and returning people to work who are in recovery. NIOSH developed a set of guidance documents for those workplaces that are interested in providing a naloxone use program in the workplace, which provides guidance on how to train workers to administer naloxone, what considerations need to be put in place, and how to address legal and liability issues. This has been a very popular document as well. NIOSH piloted this in its own workplace, and now all NIOSH workplaces have access to naloxone. NIOSH also developed a new resource focused on MAT for OUD, which also has been quite popular. This document addresses not only how workplaces can help prevent first use of opioids, but also how employers can help workers who have a problem. This discusses issues related to working with MAT and the importance of employment as a continued component of recovery.

Dr. Chosewood closed with a brief mention of two recent NIOSH Science Blog publications. The first is a Science Blog titled, *Injured Workers More Likely to Die from Suicide or Opioid Overdose* published in August 2019. While opioid overdose is probably not a surprise, suicide is quite concerning. This NIOSH-authored study was published in the *American Journal of Industrial Medicine (AJIM)* titled, *Suicide and Drug-Related Mortality Following Occupational Injury* that showed that workplace injury raises a person's risk of suicide or overdose death and that there is clearly a link between types of work injury, opioids, and suicide. The study concludes that improved working conditions, improved pain treatment, better treatment of SUDs, and treatment of post-injury depression may substantially reduce deaths following workplace injuries. Post-injury depression is quite common. People not only have an injury, but oftentimes are losing a job or losing part of their income.

The second Science Blog of interest addresses the intersection of the opioid and veterinarian work titled, *The Role of Veterinarians in the Opioid Crisis*, which was published in November 2019. Veterinarians are at increased risk for OUD and for suicide. In fact, this is one of the few occupations in which female suicides exceed male suicides when assessed by occupation. It also raises the quite common scenario of intentional injury of a pet that was brought to a veterinary for the purpose of obtaining a prescription for an opioid. This was reported by 1 in 4 veterinarians. This was a popular blog with a lot of interest from the lay population. It also speaks to the fact that veterinarians are not nearly as regulated and do not have a prescribing monitoring program as there is in the medical profession.

Discussion Points

Dr. Frye expressed interest in: 1) research on representation or engagement in organized labor or trade unionism, either ecological or multi-level, and its association with these outcomes; 2) the potential role of SV and gender disparities, particularly in some of the food service and preparation industries; 3) unofficial workers who are not going to show up in Workers' Compensation; and 4) "domestic workers" engaged in agricultural labor.

Dr. Chosewood indicated that perhaps one of the most important extramural research projects NIOSH has underway is with the National Construction Safety Center, which is also known as the Center to Protect Workers' Rights (CPWR). CPWR is very closely aligned with organized labor and represents perhaps the most forward-thinking labor-oriented group in terms of addressing the opioid crisis. NIOSH has funded them for a number of years, but this year gave them specific funding to assess opioid prevention-related initiatives and they have done a great job. They are finding the most promising outcomes around the development of peer support networks. NISOH has a strong history of strong labor support, because of which they were asked to run the 9/11 World Trade Center Health Program (WTCHP). A lot of NIOSHs extramural research involves labor partners, especially related to opioids. NIOSH is happy about that strong connection. Informal workers have a major huge number of risks. There are some areas in Workers' Compensation in which some care is occurring in the private health insurance space instead of the Workers' Compensation space, so it is likely that the findings in the Workers' Compensation data miss quite a bit of the actual burden and risk. That certainly would be true among informal workers who may have no access to work-associated injury care or exposure. One of NIOSH's 6 funded TWCs looking specifically at the population of workers who are in non-traditional work, such as those who use a day job center or employment center where they pick up work by the day. All of that TWC's research portfolio is dedicated to that population and is examining this growing emerging trend of gig work, part-time work, and other insecure non-standard work arrangements. These individuals have risks related not only to discrimination, wage theft, and other challenges, but also they are at special risk in the opioid overdose setting because they do not have access to healthcare insurance. It is very rare and almost unheard of in this population. There is more that NIOSH can do in this space and will keep it on their radar.

Dr. Chou inquired about the impact of people being afraid to reveal that they have a use disorder or of a co-worker seeing that they have naloxone. It also is easy to foresee a situation in which someone might abstain because they know that they will be urine tested, but then start to use again and be at increased risk. He wondered how all of these things interplay with risk of overdose in the occupational setting.

Dr. Chosewood replied that for years, there has been a drug-free workplace movement across the country. Given some of the statistics showing wide drug use across the nation including the working age population, this is almost a joke to think about. In many ways, they feels like some of the traditional approaches have not served workers adequately. There are a few safety-sensitive jobs for which urine drug testing is employer- and federally mandated. Transportation is a good example of that where there are federal laws on the books that mandate certain drug testing. Increasingly, they are hearing that employers who have done voluntary drug testing are doing it less and less by the year. That is because some industries are reporting that it is very difficult to find workers, especially in times of unemployment, if they keep drug screens in place. Nonetheless, there certain jobs where safety-sensitive work is required where it probably still is a good idea to have some level of ongoing monitoring. Perhaps most importantly is overcoming the stigma that is so pervasive in all of the country, including workplaces, that really does not

encourage people to come forward. People need confidential, private means to access treatment. NIOSH would advocate for more employee assistance programs, awareness-building programs, and screening programs on job sites. In addition, employers need to live up to the Americans with Disabilities Act (ADA). SUD and OUD are covered conditions under the ADA, and it is a mandate for employers with more than 25 employees to follow the federal law of the ADA. That would include those people who are under treatment.

Dr. Floyd pointed out that as a clinician, he thought of his patients coming in with their pain syndromes that are in the industries Dr. Chosewood mentioned. As a clinician, this has been staring him in the face and he had not really thought about it. Even more importantly is that clinicians see people in these industries and a lot of them do develop back pain, injuries, and will wind up on opiates. It is easy to fall into the thinking that a patient is working, doing well, and is functional just by keeping him or her on opioids. Therefore, clinicians may perceive that they are doing such patients a favor by continuing these medicines. It struck him that there is a role for prevention research, physician/clinician education, and employer/patient education about other options. He wondered whether NIOSH is examining any of this, and urged NIOSH to get this information out to primary care physicians if they are not already doing so.

Dr. Chosewood emphasized that NIOSH has very strong relationships with Workers' Compensation Programs, many of which are increasingly having their own set of guidelines. In some cases, these are quite firm and mandated in their prescribing policies that are directed to prescribers if the payer is going to be the Workers' Compensation system. That is one way that the prescribing in working populations is being managed to some degree. An unsung part of NIOSH that Dr. Chosewood finds quite impressive is that they fund a tremendous amount of the occupational medicine physician training in this country through the NIOSH Education and Research Centers (ERCs). NIOSH provides a lot of the grants that are utilized to train occupational residents, physicians, occupational health nurses, safety engineers, and safety officers. They are using that platform to get the message out about alternatives to pain medication and better treatment to address the continuum between injury, pain control, return to work, safe work, safety-sensitive work, given that they have access to that population of trainees. This is an important area in which they can have influence. They are strongly connected with the professional societies of practicing occupational medicine providers, nurses, and mid-level providers as well. They believe that more than half of all occupational medical care is provided in the primary care setting.

Dr. Kaplan noted that other countries have far more robust union representation such as Germany, some of the Scandinavian countries, and Canada to some extent. He wondered what the picture looked like in such countries where unions are more engaged in alleviating some of the demands. He recalled studying job strain, which is basically defined as high-demand, low-decision latitude jobs. Unions are very good at reducing some of the burden associated with that, so wondered what is known about Germany and other countries. Union membership has declined precipitously in this country, with only about 10% of all laborers being members of a union.

Dr. Chosewood indicated that NIOSH has a number of international partnerships that are specifically examining certain labor and worker protection issues. More US public sector workers (police, fire fighters, healthcare workers in public hospitals) participate in unions. However, unionization in the private sector that once approached 50% in this country is now less than 5%. The influence of organized labor in the worker protection space is dire in that it is dramatically diminished. Contrast that with other countries like Germany and the United Kingdom (UK) where they have much greater membership, play, and influence in regulatory

settings. NIOSH definitely thinks that organized labor was largely responsible for many of the early dramatic decreases in workplace injury and death. Now they are looking for alternative means to try to address some of those same challenges. Perhaps most importantly, those more progressive countries are looking more broadly at what workplace exposures include and they would loop in the exposure of inadequate workplace arrangement such as insecure employment and psychosocial and psychological hazards and environments, which are absolutely the leading cause of NIOSH to be asked for a consultation. Psychosocial stressors and hazards are rampant in the US today.

Dr. Miskis requested the source of the data Dr. Chosewood reported about 95% of the opioid deaths occurring in individuals 15 to 64 years of age.

Dr. Chosewood indicated that most of these slides are on the NIOSH website, and that the most common data they site are from CDC and BLS. The source of the 95% is https://www.cdc.gov/niosh/topics/opioids/data.html. While it does not provide the survey tool, his guess was that it would be BSL data.

Dr. Frye observed that it sounded like a lot of the opioid overdoses and deaths are occurring in industries where there is good labor representation, so they will not necessarily see an association between that and the outcomes of interest.

Dr. Chosewood said he thought that pointed to the multifactorial nature of the risks. They certainly see lower wage workers even in those areas where there is some union representation versus higher wage workers. Certainly, those with insecure employment such as construction, seasonal fishing, agricultural, and mining workers are the highest risk areas.

Dr. Franklin noticed that the categories were broken out in terms of low wage, high wage, and things of that nature. He wondered whether there was any information on the demographics of the populations outside of where they work, how they work, and how they live in terms of what their social context is like. He was thinking about certain worker populations and the neighborhoods that they have lived in, social environments, healthcare disadvantages, whether they are coming to work with the problem, etcetera. While it is a workplace event, perhaps the point of intervening is probably not at the workplace in terms of prevention.

Dr. Chosewood responded that most of NIOSH's research does look at geographic issues such as where people live, urban versus rural, Westward movement, wages, men versus women, etcetera. They have seen increased risks in areas where economic opportunities are diminished.

Dr. Liller asked whether NIOSH is doing any work with the migrant farm worker population, which is a particularly difficult group to engage and get a handle on. She imagined that migrant farm workers comprise a large part of the agricultural worker category.

Dr. Chosewood stressed that migrant farm workers are one of the high risk groups due to a number of factors such as insecure employment, low wage, and lack of access to paid benefits. Some of the NIOSH ERCs, especially in those areas where agricultural is quite common, focus in on the special needs of those populations. However, he was not specifically aware of studies directly related to opioids.

Ms. Jackson-Lee added that NIOSH also has the Southeastern Coastal Center for Agricultural Health and Safety (SCCAHS) at the University of Florida that may be doing something in that area. They will look into that and get back to the BSC.

Dr. Kaplan noted that when he was on the flight to the BSC meeting, he had the *Los Angeles Times* in which the front page story was titled, "A troubled ex-USC football star died at 31. His family hoped that studying his brain for CTE would help others." He had multiple head concussions and was on pain killers. This raises the issues of sports and athletes and high-demand low-position latitude, and he wondered whether Dr. Chosewood had any thoughts on that.

Dr. Chosewood said that is a really good lead-in to say that NIOSH's Health Hazard Evaluation (HHE) Program has done 15 or so evaluations among first responders and has conducted a number of surveys on professional athletes as well. He is not aware of any health hazard evaluations in college athletes, but NIOSH has been called in for professional athletes. These are workers with workplace exposures that lead to premature disability and death. NIOSH has a number of guidelines related to workplace head injury. NIOSH also is quite involved in the development of new technologies for personal protective equipment (PPE), including headgear for those workers who might have exposure. There is quite a bit of work in developing the next generation of very lightweight, but very effective headgear for athletes. He is not certain to what extent it will change the trajectory. This also gave him the opportunity to mention NIOSH's Fire Fighter Fatality Investigation and Prevention Program (FFFIPP) that assesses the death of every fire fighter in the country. One of these involved the death of a fire fighter from an overdose patient who was revived with naloxone and then subsequently produced a firearm and killed a fire fighter who was there as part of the response. NIOSH is about two-thirds of the way through that investigation and will have a number of recommendations related to that kind of exposure in this setting.

Background for Updating the CDC Guideline for Prescribing Opioids

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Dr. Dowell indicated that the purpose of this presentation was to provide some background on a potential update of the *CDC Guideline for Prescribing Opioids for Chronic Pain – United States, 2016*. The 2016 guideline was published in March 2016. Its purpose was to improve the management of chronic pain in the US by providing recommendations for prescribing opioid pain medications for patients aged 18 and older in outpatient, primary care settings. The recommendations focused on the use of opioids in treating chronic pain. The guideline was not intended for use in active cancer treatment, palliative care, or end-of-life care. The intended audience was primary care providers (e.g., family practice, internal medicine, physicians, nurse practitioners, physician assistants).

To develop the guideline, CDC updated an Agency for Healthcare Research and Quality (AHRQ)-sponsored systematic literature review on benefits and harms of opioids; conducted a supplemental evidence review to inform translation of the evidence into recommendations); used the GRADE (Grading of Recommendation Assessment, Development and Evaluation) framework to rate the quality of evidence and strength of recommendations; and obtained input

from experts in pain management, primary care, opioid prescribing, and substance use disorder treatment as well as from patients, medical organizations, advocacy groups, state agencies, national partners, the general public and the NCIPC BSC and its expert work group. At each stage, CDC reviewed, carefully considered, and incorporated feedback. The 12 recommendations were grouped into 3 conceptual areas: 1) Determining when to initiate or continue opioids for chronic pain; 2) Opioid selection, dosage, duration, follow-up, and discontinuation; and 3) Assessing risk and addressing harms of opioid use. The following are the 12 main recommendations, including the following:

1. Opioids are not first-line or routine therapy for chronic pain
2. Set goals for pain and function when starting
3. Discuss expected benefits and risks with patients
4. Start with short-acting opioids
5. Use caution when increasing dosages and avoid or carefully justify escalating to high dosages
6. Prescribe no more than needed for acute pain
7. Optimize other therapies and offer gradual tapers when benefits do not outweigh risks of continuing opioids
8. Assess risks; consider offering naloxone
9. Check PDMP for other prescriptions, high total dosages
10. Check urine for other controlled substances
11. Avoid concurrent benzodiazepines and opioids when possible
12. Offer or arrange MAT for patients with OUD

CDC's implementation efforts have focused on 4 priority areas to maximize uptake and use of the guideline, including: Translation and Communication, Clinical Training, Health System Implementation, and Insurer/Pharmacy Benefit Manager Implementation. As examples, CDC developed a mobile app and training to help primary care providers help patients manage pain more effectively and safely. CDC engaged clinicians, health systems leaders, payers, and other decision-makers in discussions of the guideline's intent and provided clinical tools to facilitate appropriate implementation. The medical and health policy communities have largely embraced the guideline's recommendations. A majority of state Medicaid agencies reported having implemented the guideline in fee-for-service programs by 2018, and several states passed legislation to increase access to non-opioid pain treatments. Although outpatient opioid prescribing had been declining since 2012, accelerated decreases in overall and high-risk prescribing, for example overlapping opioid and benzodiazepine prescriptions and high-dosage prescriptions, followed the guideline's release as documented in a 2018 paper by Amy Bohnert and colleagues.

Efforts to improve opioid prescribing and reduce opioid misuse and overdose are commendable. However, some policies and practices citing the guideline went beyond its recommendations and were inconsistent with its guidance as discussed earlier in the day. For example, the guideline does not support abrupt tapering or sudden discontinuation of opioids but has been inappropriately cited to justify hard limits or "cutting off" opioids. In addition, CDC has heard reports of misapplication beyond the guideline's clearly stated scope, such as applying the recommendations to patients in cancer treatment or experiencing post-surgical pain, and misapplication of the guideline's dosage recommendation to medications for opioid use disorder.

CDC continues to work to address misapplication of the guideline beyond its intended scope. For example, CDC's 2/28/19 letter to the American Society of Clinical Oncology (ASCO), the American Society of Hematology (ASH), and the National Comprehensive Cancer Network® (NCCN®) reiterated that as stated in the guideline, the guideline provides recommendations for prescribing opioids for chronic pain outside of active cancer treatment, palliative care, and end-of-life care. The letter also stated that guidelines addressing pain control in sickle cell disease should be used to guide decisions and that clinical decision-making should be based on an understanding of the patient's clinical situation, functioning, and life context and careful consideration of the benefits and risks of all treatment options, including opioid therapy.

In a *New England Journal of Medicine* Commentary and accompanying CDC Media Advisory in April 2019, examples were outlined of misapplication of the guideline and highlighted advice from the guideline that is sometimes overlooked but is critical for safe and effective implementation of the recommendations. As they wrote, "Effective implementation of the guideline requires recognition that there are no shortcuts to safer opioid prescribing, which includes assessment of benefits and risks, patient education, and risk mitigation, or to appropriate and safe reduction or discontinuation of opioid use." Starting fewer patients on opioid treatment and not escalating to high dosages in the first place will reduce the numbers of patients prescribed high dosages in the long-term. In the meantime, consistent with the 2016 guideline, clinicians can maximize use of non-opioid treatments, provide interested and motivated patients with support to slowly taper opioid dosages, closely monitor and mitigate overdose risk for patients who continue to take high-dose opioids and offer or arrange medication-assisted treatment when opioid use disorder is identified.

To emphasize some of these important but overlooked messages from the guideline, such as the importance of patient-centered collaborative tapering, CDC updated its *Pocket Guide: Tapering Opioids for Chronic Pain*. As discussed earlier in the day, CDC collaborated with HHS, NIH, FDA, CMS, AHRQ, HRSA, and SAMHSA on the *HHS Guide for Clinicians on the Appropriate Dosage Reduction or Discontinuation of Long-Term Opioid Analgesics*. The 2016 guideline stated that, "CDC will revisit this guideline as new evidence becomes available to determine when evidence gaps have been sufficiently closed to warrant an update of the guideline." Since release of the 2016 guideline, there have been calls from professional specialty societies, US Senators, and the media for CDC to provide a guideline on prescribing opioids for acute pain.

In order to identify whether evidence gaps are sufficiently addressed to warrant updates to expansion of the guideline, CDC funded AHRQ to conduct 5 systematic reviews on the effectiveness of opioid, non-opioid pharmacologic, and non-pharmacologic treatments for acute and chronic pain. Three draft reviews on non-pharmacologic, non-opioid pharmacologic, and opioid treatments for chronic pain were posted for public comment in October 2019. Final versions are anticipated to be released in early 2020. Two reviews on treatments for acute pain are anticipated to be released by fall of 2020. Evidence identified in these new systematic reviews *may* allow updates to and/or expansion of the guideline potentially including the following:

- ❑ Additional detail on non-pharmacologic and non-opioid pharmacologic therapies for chronic pain
- ❑ Updated information on benefits and risks of non-pharmacologic, non-opioid pharmacologic, and opioid therapies for chronic pain
- ❑ Expanded guidance on acute pain
- ❑ Expanded guidance on opioid tapering

In addition to the systematic evidence reviews, to facilitate decisions about updating the *CDC Guideline for Prescribing Opioids for Chronic Pain – United States, 2016*, CDC will be requesting establishment of and input from a BSC Expert Workgroup to provide input to the NCIPC BSC. We are also developing processes to facilitate input from patients, providers, and the public for any potential guideline update (e.g., opportunities for public comment posted in *Federal Register* notices).

Discussion Points

Regarding the 2016 guideline not being applicable to post-surgical pain that was outlined in the text but missed by many, it appeared to **Dr. Habermann** that many of the state statutes and regulations were built upon acute pain guidelines for 3 or 7 days. She wondered whether they also had communicated to state legislatures as they did with the letter to some professional societies as outlined in the presentation. For the acute reviews, she asked whether various types of acute pain will be separated out, such as migraines versus post-surgical or trauma pain.

Dr. Dowell indicated that they have communicated to their state programs. In terms of the acute reviews, they are separating out specific topics. For migraine in particular, there was such a large amount of literature available, it caused the acute pain review as originally scoped to exceed AHRQ's limits of the largest systematic review they ever do. Therefore, they split migraines out. One acute pain reviews will be on migraines, and then second a list of other acute pain topics. The exact protocols are still being finalized for those, but they will include various conditions that would present to the ED, primary care, or surgeons.

Dr. Frye asked Dr. Dowell to comment more specifically on the timeline of the availability of the systematic reviews.

Dr. Dowell indicated that the 3 chronic pain reviews were drafted and were out for public comment in October. It is their understanding that public comments are being incorporated and they are making revisions. The final release is anticipated in early 2020. The acute pain reviews are just getting started, with the drafts anticipated to be available for public comment in late summer of 2020.

Dr. Crawford said that he understood the approach they are taking, but wondered whether any consideration would be given to polysubstance use.

Dr. Dowell responded that it is critical to recognize the background that polysubstance use is prevalent in this country as they discussed with regard to the research agenda. That has to be in the background as they write these guidelines as well. They are specifically focusing on prescribing, so the focus will be on opioids and other drugs that can be prescribed for pain. In the 2016 guideline, there were recommendations pertaining to assessing and treating for harm through urine drug testing, PDMP use, identifying patients with OUD, and referring for treatment. The polysubstance use issues in this country will have to inform the background for those recommendations.

Dr. Frye requested a quick recap of the major rationale for updating the guideline.

Dr. Dowell pointed out that the science is never done. They called for more research in the guideline, and it is known that more research is needed. As mentioned earlier, it is very difficult to do great rigorous on the best approach to tapering but more studies are needed for that. The 2016 guideline indicated that CDC would continually survey the literature and identify when new research was identified that would justify an update. They do not have any of the final systematic reviews yet, but based on the drafts for the 3 chronic pain reviews, it appears that there are additional studies available now that were not available in 2016 on the non-pharmacologic treatments for chronic pain and non-opioid treatments for chronic pain and the first long-term study on an opioid-based versus a non-opioid-based strategy. It seems that there may be enough information at least to add nuance and details. They do not know enough yet about what the acute pain reviews will show to determine whether the scope will expand significantly in that area.

Dr. Liller indicated that the BSC provided a lot of recommendations about a year ago to a process on the study of this topic. She wondered whether these new systematic reviews were the outgrowth of that or if this is different.

Dr. Houry said that discussion was related to the prescribing estimates.

Dr. Dowell added that the prescribing estimates will inform the revised guideline work in that they were looking at what is happening in the US in terms of opioid prescribing right now. They anticipate publishing the results of that in the coming months.

Dr. Cunningham said she was on the working group for the 2016 guidelines and agreed that the issue about acute pain has not been addressed adequately. Many providers are struggling to figure out what to do with acute pain, and many jurisdiction are moving forward with policies that are not evidence-based. Thus, there is clearly a need to understand the evidence and put forth guidelines to help guide policies as much as possible. As they have probably learned from this experience that moving forward, they need to be very clear with partners about what the guidelines will say and what they will not say in terms of interpretation so that they do not find themselves in the same position going forward.

Dr. Schwebel thought this seemed like a great initiative. He asked whether they have knowledge or evidence about how many prescribers are aware of these guidelines and are using them. Making sure the guideline is known about and followed seems like an important outcome to influence prescription patterns.

Dr. Dowell was not aware of a specific survey of prescribers to determine how many are aware of the guideline. The study by Dr. Bohnert and colleagues published in the Fall of 2018, which takes the next step to look at what happened with prescribing. Bohnert et al. did some interrupted time series analyses, and it looks like there were changes in prescribing consistent with the recommendations at the time of guideline publication. These were all changes that were trending in this direction, but it looks like there was a significant change at the time of guideline release. For example, patients with overlapping opioid and benzodiazepine prescriptions were declining prior to the guideline release and the decline basically quadrupled after guideline release. Similar patterns were seen in overall prescribing and in high-dosage opioid prescribing.

Dr. Houry added that that they are very familiar with at least 60 medical schools that have pledged to incorporate that into their training, as have a number of nursing and pharmacy schools. There also is continuing education on the NCIPC website for which they track the number of downloads and interactions. They engaged in some Clinician Outreach and Communication Activity (COCA) efforts. They also have a mobile app that explains how to operationalize the guideline, which is one of the most downloaded apps they have. Because some providers may not remember all of the nuances of the guideline, they have worked to incorporate it into clinical decision prompts and EHRs. Carolinas Medical Center (CMC) and others have implemented that, so they are seeing evidence that physicians are using it.

Dr. Chou noted that he was one of the authors on the 2016 guideline and they did the evidence review. As a clinician, he said he could attest that everyone has been impacted by this. Whether they have read the guideline or not, they are impacted by it because payers and health systems are implementing it. He receives letters telling him that he has patients who are on too high a dose of opioids and then they cite him in the letter.

Dr. Floyd said that as another practicing clinician, he could not think of a CDC guideline that has received more publicity and is discussed more often than this.

Charge and Request for Establishment of an Opioid Workgroup

Christine R. Curtis, MD, MPH
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Senior Medical Advisor, Division of Overdose Prevention
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Dr. Curtis pointed out that, as Dr. Dowell stated during her earlier presentation, one of the key steps to facilitate a possible update to the *CDC Guideline for Prescribing Opioids* is for CDC to request establishment of, and input from, a Board of Scientific Counselors Expert Workgroup. This brief presentation focused on the BSC Opioid Workgroup (OWG) formation request. The primary purpose of the OWG request is to provide expert input and observations on a possible update or expansion of the *CDC Guideline for Prescribing Opioids for Chronic Pain —United States, 2016*. If within the scope of the BSC Charter and requested by the NCIPC Director, a possible secondary purpose of the OWG may also be to provide expert input and observations on other matters related to the opioid crisis which might arise. The OWG will help ensure broad, external, transparent input on the diverse and complex issues involved in considering a possible update or expansion of this guideline. Dr. Curtis referred BSC members to their folders for a copy of the draft "Terms of Reference" document, previously referred to as a "Charge."

As described in the draft "Terms of Reference," the third slide shown provided an overview of the tasks that will be completed by the OWG pertaining to its primary purpose. Tasks related to the provision of observations for the possible draft updated or expanded opioid prescribing guideline include:

- ❑ Review the quality and implications of clinical and contextual evidence reviews
- ❑ Review each guideline recommendation statement and accompanying rationale
- ❑ Consider specific aspects of each recommendation
- ❑ Develop a summary, including points of agreement and disagreement, regarding the OWG's observations

As mentioned earlier by Dr. Dowell, the final versions of the 5 evidence reviews pertaining to pain treatment are anticipated to be released in 2020. If warranted by the available evidence, a draft *2021 Guideline for Prescribing Opioids for Pain* will be provided to the OWG for consideration by or before Fall 2020. The OWG would then undertake the remaining three tasks shown on the slide.

The OWG would consider specific aspects of each recommendation, including: 1) the quality of the evidence supporting the recommendation; 2) the balance of benefits and risks associated with the recommendation, including the degree to which the benefits of issuing the recommendation can be anticipated to outweigh the harms; 3) the values and preferences of clinicians and patients related to the recommendation, including the degree to which there is variability or uncertainty in values and preferences; 4) the recommendation's cost feasibility, including the degree to which implementation is anticipated to be feasible for health systems and patients financially; and 5) the category designation of the recommendation in terms of whether Category A or Category B is justified. Category A recommendations apply to all patients, while Category B recommendations require individual decision-making where different choices will be appropriate for different patients, so that clinicians must help patients arrive at a decision consistent with patient values and preferences and specific clinical situations.

The fifth slide provided an overview of how the BSC OWG would engage with the BSC/NCIPC regarding a possible update or expansion of the 2016 CDC Guideline. At this time, it is anticipated that in late 2020, the BSC OWG will provide a report detailing its findings and observations about the draft guideline to the BSC/NCIPC (i.e., the "parent" committee comprised of all appointed BSC/NCIPC members). The parent committee will subsequently review the workgroup's product and will discuss, deliberate, and provide advice and recommendations for CDC and HHS to consider as part of the potential update and expansion of the *CDC Guideline for Prescribing Opioids for Chronic Pain — United States, 2016*. At this time, it is anticipated that the remainder of the guideline development process, which would occur following the BSC's recommendations, would include additional draft guideline revisions, HHS clearances, and a 60-day public comment period before the updated guideline would be projected to be released during late 2021.

Consistent with the draft "Terms of Reference," the requested OWG would be comprised of 12 to 20 persons. The OWG Chair must be an appointed BSC member, and there must be at least one other OWG member who is an appointed member of the BSC. Remaining members will be external experts who can enhance the expertise on the OWG to assist the group in completing its tasks. The OPW must have a CDC employee as a Designated Federal Officer (DFO). For this workgroup, the DFO will be an SME from the Injury Center. A limited number of ad hoc consultants might also be considered to provide additional expert opinions. Participation of federal representatives is also anticipated.

In seeking a balance of perspectives, CDC is working to identify audiences directly affected by the guideline, audiences that would be directly involved with implementing or integrating recommendations into current practice, and audiences qualified to provide representation of a specific discipline or expertise in alignment with the tasks of the workgroup. Perspectives that would enhance or support the workgroup's capacity to complete tasks include, but are not limited to, those of the following groups:

- ❑ Clinicians
- ❑ Ethicists

- ❑ Patients and Families (It is important to note that perspectives that will be sought represent those of people experiencing benefits and harms, respectively, of opioids being prescribed for pain)
- ❑ Pharmacists or Pharmacologists
- ❑ Public Health Practitioners
- ❑ Research Scientists

It is important to note that this list is alphabetical and is not intended to signify importance or prioritization. Given workgroup factors including size considerations, prospective workgroup members who offer two or more perspectives are desired. Federal Advisory Committee Management requirements will guide the final selections.

In thinking about workgroup composition, an important objective is to represent a wide range of clinical specialist who may engage in treating acute and chronic pain among persons aged ≥18 years. Of note, this population includes adolescents and young adults as well as the nation's oldest citizens. In this context, the workgroup would ideally include the expertise of:

- ❑ Dentists
- ❑ Primary Care Clinicians (with specialties including family practice, internal medicine, adolescent medicine/pediatrics, geriatrics)
- ❑ Surgeons (with specialties including obstetrics and gynecology, general surgery, orthopedic surgery) and
- ❑ Other Specialists

Representation of other specialties that would support the OWG's completion of tasks include those listed here:

- ❑ Addiction Medicine/Addiction Psychiatry
- ❑ Anesthesiology
- ❑ Behavioral Health Specialties (including, but not limited, to psychiatrists)
- ❑ Emergency Medicine (including clinicians delivering care in "urgent care" settings)
- ❑ Hematology/Oncology
- ❑ Hospital Medicine
- ❑ Medical Toxicology
- ❑ Neonatology/Perinatology/Prenatal and Peripartum Care (e.g., nonsurgical acute or chronic pain management in pregnant or lactating women)
- ❑ Neurology
- ❑ Occupational Medicine
- ❑ Pain Medicine
- ❑ Palliative Medicine
- ❑ Physical Medicine and Rehabilitation

In terms of processes involved in forming the OWG and the workgroup's completion of tasks, initial steps include that the OWG DFO will:

- ❑ Develop a list of prospective workgroup members that is informed by the BSC and public comment
- ❑ Request and review disclosures of competing conflicts of interest (COI), if any
- ❑ Develop a slate of prospective workgroup members, ensuring maximal breadth of expertise and diversity in perspectives
- ❑ Provide an update to the BSC on the formation of the OWG in Spring of 2020

Of note, in the interest of time and based on the working list of areas of expertise, CDC has begun thinking of and exploring the interest of possible workgroup nominees, and has been receiving inquiries from professional organizations and others about the guideline update process. CDC also has reached out to those BSC members with expertise related to opioids to explore their interest in workgroup participation and chairing the workgroup. Following the identifications of prospective nominees, the DFO will then complete the other 3 tasks on the list above that was included in slide 10. It is anticipated that the update to the BSC on the formation of the OWG in Spring of 2020 will occur by phone and would be announced in the *Federal Register*. The date will be determined by factors including the availability of a quorum of BSC members.

After the workgroup roster has been finalized, the DFO will convene workgroup members via a series of webinars and online forums to gather clinical and methodologic feedback on the evidence reviews and the possible draft guideline. Timing and topics for meetings will be planned by the OWG Chair and OWG DFO based on factors including the availability of the evidence reviews. Follow-up conference calls will be scheduled as needed for draft report development. The process also will include the availability of the final OWG report summarizing the expert input obtained via the webinars and online forums. This report would be anticipated to be presented at a future BSC, NCIPC meeting for BSC approval or modification. The specific timing of the meeting is to be determined, but is anticipated to be in approximately 1 year. Based on the OWG report and the discussion the BSC meeting, the BSC will provide recommendations to CDC and HHS regarding the draft updated or expanded opioid prescribing guideline. As noted earlier, at this time, the process is anticipated to be that following the engagement of the BSC, the revised guideline will be posted for public comment in early 2021 and guideline release would be anticipated to occur in late 2021.

In summary, CDC is requesting the establishment of the BSC, NCIPC OWG to inform the possible update or expansion of the *CDC Guideline for Prescribing Opioids*. CDC also requests the BSC's recommendations for balanced perspectives and expert representation within the restrictions of COIs and federal regulations. Public comment is expected to inform consideration of prospective workgroup nominees. Dr. Curtis indicated that the names of nominees for the OWG could be shared during the public comment period, with spelling and affiliation. To be considered, curriculum vitae (CV) and current contact information should be emailed by the nominee to NCIPCBSC@cdc.gov by or before Tuesday, February 4, 2020. CDC hopes that this 2-month interval and time occurring after the holidays are over will help facilitate more prospective nominees being able to send in their information for consideration.

Discussion Points

Dr. Porucznik asked whether there was a mechanism by which they could try to balance geography, race, and ethnicity within this nomination process. This may not be included on a nominee's CVs.

Dr. Curtis indicated that the Federal Advisory Committee Management requirements that will guide the final selections do include geographic and other diversity. Every effort will be made to try to ensure that the OWG is as diverse as possible. That is why CDC is so eager and committed to providing such a long window for nomination of prospective workgroup members.

Dr. Hedlund inquired as to whether sports medicine is included within the Other Specialties category.

Dr. Curtis replied that sports medicine is not explicitly called out, but they could add this to the list. They were thinking about this in specialty terms of orthopedics. One thing that is typically a challenge in trying to form a group and make sure that there is adequate representation is that the workgroup size can become unmanageable. That is the reason that prospective members who offer two or more perspectives are desired.

Dr. Cunningham requested clarity about whether there would be just one workgroup for the entire expansion even though there are two components—chronic pain and acute pain. She noted that the list of providers shown includes both and they certainly could weigh in accordingly.

Dr. Curtis stressed that they are still very early on in the formation of this workgroup, because they still needed to hear a BSC response to the request for formation of the OWG and identify a Chair. The DFO will work with the OWG Chair to identify topics for meetings that will be planned and arranged. She anticipated that those topics would include consideration of the contextual evidence reviews on both the chronic pain and acute pain topics, and that those would inform the OWG's input and observations regarding the guideline. One advantage of having balanced perspectives represented on the OWG is that those who work in primary care may also help to provide a broad perspective on both acute and chronic conditions.

Dr. Frye reiterated that this is the BSC's chance to comment on this request in terms of the rationale, process, etcetera.

Dr. Floyd said he thought they had everything covered in terms of the groups, but he wondered whether any thought had been given to the numbers of members to include in each category in terms of the weighting of the different specialty composition. For example, his healthcare system has an excellent program underway to monitor and reduce opioid prescribing. However, much of it was informed by addiction medicine which provides a very different perspective from primary care.

Dr. Curtis replied that it is an interesting challenge to consider, and that other factors affect thinking about the composition of the OWG as well such as issues of diversity. They will try to provide the best diversity and balance of perspectives and areas of expertise, along with perspectives and balance in terms of geographic representation and so on. It also is important to consider the benefits and possible harms to patients and families of opioid therapy, and they want to have balanced perspectives in that regard as well.

Dr. Cunningham said that she thinks this is a good idea overall. Other organizations and national bodies are also doing updates, because the field and epidemic are moving quickly. Given the change in this epidemic, different responses are needed. Overall, she thinks updating the guideline is important, needed, and consistent with other organizations and the approach presented seems appropriate.

Dr. Chou found the breadth of the expertise to be good. Because the guideline addresses use of other treatments in addition to addressing opioid prescribing, perhaps there should be some representation from complementary and integrative medicine (e.g., chiropractic, acupuncture, etcetera).

Dr. Curtis said that they had some debate about listing complementary medicine per se, but one perspective that brought to the fore was a sense that increasingly, what was previously referred to as "complementary medicine" is becoming more mainstream and perhaps they would be in error to call it out specifically. She appreciated the feedback suggesting that they should list it explicitly.

Dr. Frye seconded Dr. Chou's recommendation. It is very important to include complementary medicine, especially given the emphasis of the research pertaining to non-opioid-based treatment. She imagined that these kinds of guidelines might motivate insurers and others to support alternative therapies, which could be very important for everyone.

Dr. Liller asked about occupational or physical therapists, and noted that there are several Doctorate of Physical Therapy (DPT) programs that are associated with Schools of Public Health (SPH) that would be great to include.

Dr. Curtis indicated that she and Dr. Greenspan have been talking about that. There are a couple of groups that would be great to include if anyone has any specific nominees. Groups have occurred to her that are potentially going to be challenging to identify, at least based on those who are known to colleagues at CDC. One group is obstetricians. There seem to be a fair amount of folks who specialize in gynecologic surgery who have an interest in this area [of opioid prescribing]. She does not know of anyone in the area of obstetrics who practices actively who might be interested, but that would be useful. She also would welcome nominees in nursing. The hope is that this guideline would be utilized and informed by a breadth of primary care clinicians, including physician's assistants, nurse practitioners, physicians, as well as by physical therapists, and occupational therapists and others. While this is going to be challenging, in the interest of transparency they will do their best to consider the nominees who are best able to enhance the expertise on the workgroup. They would like this to be a broad-based workgroup.

Dr. Houry pointed out that they can have some ad hoc members that are not included in the 12 to 20 primary OWG members. If there is a specific focus of one of the meetings of the OWG, they could make sure that the appropriate ad hoc members are included at that time.

Dr. Porucznik indicated that the Patient-Centered Outcomes Research Institute (PCORI) funding agency has had several calls and funding cycles related to opioids the last few years. All of their grants require patient and stakeholder engagement. Reaching out to their funded groups may be a good way to find some patients stakeholder groups who may be less intimidated by participating in such workgroup because they already are engaged. One thing that would not be good would be to invite patients and families to the table and then have them feel like they are not really there.

Dr. Habermann asked whether it is possible for this group to open for discussion the possibility of having two workgroups, one to update the 2016 recommendations for chronic pain and the other to focus on acute pain.

Dr. Curtis said that there always could be discussion. It might be useful to consider what the pros and cons would be to the different approaches. Given what they are hearing from a variety of stakeholder groups they would like to have acute pain guidelines available. From a clinician's perspective, she would rather have one "go to" source for all of her opioid prescribing needs as an internist and pediatrician. However, she welcomed comments from others.

Dr. Houry indicated that when they were considering this, it was really about expanding the existing 2016 guideline. Standing up multiple FACA workgroups and staffing them can be difficult in terms of the number of people each time and the COI procedure. She worries about how logistically that would be done versus having one core group that reviews the evidence. In terms of having a single specialty, although she is an emergency physician and might view things from her ED lens, she still has a broad-based clinical lens. Her hope is that each specialist who comes on board is not limited to a single focus lens of the clinical specialty they represent, but can have a broader range. Thinking about the variation from acute to chronic, many patients who have acute pain may go on to have chronic pain and people with chronic pain might have acute pain exacerbations. Therefore, she thinks having synergy is important.

Dr. Cunningham stressed that this was the question she was getting at earlier. Having been on the working group before and having seen how it worked, she also thought it made sense to have one group. What she recalled was a lot of coming in and out depending on the specific topic for each conference call, which worked really well. She could imagine a process where if the focus of the call is acute pain, more ad hoc members would be included who have that lens such that it would be a fluid and dynamic process but with one core group. That was very efficient in the past.

Dr. Greenspan said that having been the DFO on the last workgroup, it is a challenging process to run a workgroup and get enough people to attend meetings and get the right people to be at the right meetings. However, it ultimately worked out very well having ad hoc members who could speak to the different specialties and having a core group of members who could look at the broader perspective, take in all of the feedback, and then write the report. Since there is no clear cut-point between acute and chronic pain, it is helpful to have an overarching perspective.

Dr. Compton applauded CDC for tackling this again. It seemed like just yesterday that the previous guideline was launched. However, it has been a number of years. By the time this is finalized, it will have been about 5 years or so. That is an appropriate amount of time to ensure that they have not missed too much from the literature. He was particularly pleased with the intent to try to tackle acute pain. He recalled distinctly having that discussion the last time, but the evidence based was very thin. Now there has been a lot of work, including work out of the Mayo Clinic. He was wondering how they would fit 20 people in 30 different specialties, so he was very relieved to hear about the concept of ad hoc members. Certainly, NIH colleagues look forward to collaborating with CDC and helping with this process.

With more than 30 specialties recommended for 20 slots, **Dr. Hedlund** suggested considering that the audience for this guideline eventually will be clinicians and other medical specialist who will use these guidelines and that perhaps they should be represented in proportion to the size of their clinical population. If the number represents a very small slice, that could be represented by an ad hoc member. The large groups who will use the product the most should be more heavily involved in producing it.

Public Comment Session

Overview

Victoria Frye, DrPh, MPH
Chairperson, NCIPC BSC
Associate Medical Professor
Department of Community Health and Social Medicine
City University of New York School of Medicine
City College of New York

Dr. Frye expressed appreciation for those who took the time to participate in this meeting, either in person or by phone. She noted that all written comments would be posted on the BSC website with the finalized meeting minutes. As described in the *Federal Register Notice (FRN)* announcing this meeting, the public was requested to pre-register if they wanted to provide comments. This was done on a first come first, served basis. She indicated that once the pre-registered comments were completed, additional comments would be taken if there was time remaining for the Public Comment Session. She introduced Victor Cabada, who would be working with the operator to facilitate the public comments.

Victor Cabada, MPH
Office of Science
National Center for Injury Prevention and Control
Centers for Disease Control and Prevention

Mr. Cabada thanked everyone for their time and indicated that he would call on commenters in the order in which they pre-registered, and would alternate between the phone and room. He reminded everyone that there would be a 2-minute time limit, for which he explained the process for those in the room and on the call. He also indicated that they would not address questions during this session, but any questions posed by members of the public would be considered by BSC and CDC in the same manner as all other comments. He instructed anyone with the media to direct their questions to CDC's Media Relations Office.

Public Comments

Steven Passik, PhD
Vice President, Scientific Affairs
Collegium Pharmaceutical, Inc.

Good afternoon. I am Steven Passik. I'm Vice President for Scientific Affairs at Collegium Pharmaceutical. We appreciate the opportunity to comment. The 2016 guidelines were an important component of the nationwide strategy to reduce opioid prescribing in the face of the epidemic. Since 2016, we have entered a new phase in the crisis defined by continued steep declines in opioid prescribing, widespread abuse of non-prescription opioids, and increased reports of legitimate patients unable to access effective treatment. This changed environment demands a shift away from a focus on limiting opioid exposures to a more holistic approach, making every opioid exposure as safe as it can be. We urge the CDC to reevaluate the prescribing guidelines through this lens, including an emphasis on:

1) The development and implementation of opioid best practices. Opioid exposures should be preceded by an individualized risk assessment used to plan, accompany, and consult appropriate dosing and tools used to monitor patients.

2) Recommendations concerning choice of opioid, both molecule and finished dosage form, taking into account release profiles, available dosages, abuse deterrent features, and any available real-world evidence regarding a product's use, abuse, and diversion.

3) The review of the Morphine Milligram Equivalent (MME) Conversion Tables. Extended release tapentadol, which Collegium Pharmaceutical has marketed under the brand name NUCYNTA® ER since 2018, is subject to a suggested MME limit under the current guidelines that is well below the maximum daily dose in the product's FDA-approve label, and below the therapeutic dose range defined in the product insert for certain indications. Many payers have codified the CDC guideline's MME limits. We believe that this has discouraged use of a medication that is effective in relieving pain in many patients for whom opioid therapy is appropriate—surely not an outcome the CDC sought to achieve.

4) CDC must be attuned to the way in which the guidelines are likely to be interpreted and implemented by critical stakeholders, including physicians, payers, and state agencies.

We are heartened by the movement and the direction of formulating a comprehensive, responsible approach to opioid prescribing and we urge the CDC, in its evaluation of its prescribing guidelines, to lead the way in this effort. Thank you.

Lisa Kronus
Registered Nurse

My name is Lisa Kronus. I am a Registered Nurse of 20 years. I was once certified in hospice and palliative care. Now I'm a pain patient. The problem with too many prescriptions rightfully ended in 2012 with the closures of "pill mills." The addicts that were obtaining illegitimate prescriptions could no longer afford them. That was the end of the medical field's issues. In stepped heroin. So now, two completely different issues are happening. There is a heroin and illicit fentanyl crisis, and there is a crisis of inhumanity with misguided directives of the CDC and physicians being terrified to take on patients with chronic pain—terrified that treating a chronic pain patient legitimately may lead to insurmountable legal issues or loss of their license. It's not okay. It's not okay to leave any patient in pain—not a surgical patient and not a patient with intractable, incurable pain. I'm begging you to follow other leaders in the field for the proper care of chronic pain and acute pain. Read the research that they've done. The prescriptions have been down but the overdoses are up, so it doesn't add up that it's a doctor/patient issue now. Most people know the risk of dependence. That doesn't mean they will seek out illegal drugs if they're cut off. It means this life may be shortened due to the treatment, but most true chronic pain patients don't care. I ask this, what is life without quality? Why would it be up to anyone but a physician and a patient to determine their treatment? If every patient that takes narcotics is an "addict," which is kind of what I was hearing today, then I guess any person that drinks alcohol is an alcoholic. That's ludicrous thinking going on right now. Right? I mean, I think you'd all agree. Please deal with the addiction to heroin. I'm not asking you to allow people to be stuck on drugs as a form of recreation turned bad. But, also deal with the patients in pain. Two separate issues. Stop the inhumanity. I would like to be the first to volunteer for that workgroup, so I'll send my resume. Thank you for allowing me to speak.

Richard Lawhern, PhD
Co-Founder
Alliance for the Treatment of Intractable Pain

Thank you. This is Dr. Richard Lawhern, PhD. I am a Co-Founder of the Alliance for the Treatment of Intractable Pain (ATIP). I also have about 75 published papers in the field of public policy with regard to the prescription of opioids and the restriction of present opioid prescribing. I would offer a statistic that is important to understanding the dimensions of this problems. According to the data published by the CDC itself, patients above age 62 are prescribed opioids about 6 times more often than patients younger than age 19. But, opioid-related mortality in youth under age 19 is 6 times higher than in seniors. Likewise, the rate of opioid-related overdose deaths in seniors has been largely stable for 20 years while it has skyrocketed among youth. Those statistics, if properly examined, should demonstrate to you that prescribing is not the source of our opioid crisis, nor should prescribing be restricted solely on the basis of an assumption that it is. I echo Lisa Kronus's observation that drug-related deaths have continued to rise while prescriptions in the opioid class have dropped to levels we have not seen since 2005. This is a bogus crisis. It is truly bogus. I have talked to patients all over the US who are being denied treatment because of the reign of terror that has been established against doctors who dare to try to treat them with opioid prescriptions. This has to stop. This is madness. I refer you to a paper that I have submitted to the administrators of the conference. I hope it is seen by all of the members of the board. I thank you for allowing me to speak. Thank you.

Kristen Ogden
Co-Founder
Families for Intractable Pain

Ms. Ogden did not provide comments during this session.

At this point, Mr. Cabada indicated that all pre-registered commenters had spoken and that there were still 20 minutes of the Public Comment Session remaining. Therefore, he opened the floor for anyone in the room or on the phone to make public comments.

Richard Draut
CDC Contractor, Retired

I am Richard Draut. I spent 25 years working with CDC as a Contractor. I retired about a year and a half ago. It's really great to be back, and it's great to see some familiar faces. The reasons I retired though, one of the reasons, is my wife is a chronic pain patient and I wanted to spend more time helping her. Not long after that, she was subjected to a forced tapering regimen that has resulted in her having moved from a very manageable situation where she was able to do things regularly, and go out, and be physically active to some degree to where she spends most days in bed now because the pain level is not one that allows her to go out. I am encouraged very much by the presentations this afternoon and the discussions amongst the board that concerns from patient advocacy groups are going to be listened to very strongly and worked with in devising the revisions to guidelines. I do want to say though that it's important that something be done in the interim to negate the effects of the misuse of the guidelines across the board by so many governmental agencies in particular and payer groups. Something needs to be done to emphasize beyond what the *New England Journal* article did something to really get their attention, because 2 years is way too long to wait for this to get this fixed. Something really needs to be done quickly. At any rate, I'd be happy to discuss this further with any members of the group. Reach out to me. I'd love to be involved. Thank you so much.

Anne Fuqua, RN
Chronic Pain Patient
Patient Advocate

Hi. I'm Anne Fuqua. Prior to being in a wheelchair, I was a Registered Nurse. Earlier it was asked whether there had been any evaluation of the extent to which the guidelines have been implemented. The audio on the phone has been unclear at times, so I'm not sure if I misunderstood this or not, but I believe someone stated that decreases in prescribing followed the approval of the guidelines and were consistent with guidelines. From what I've seen with the patients because of the advocacy work I have done, I do not believe that the decreases in prescribing were consistent with the guidelines. Even Dr. Dowell addressed that fact that the guidelines were being applied to populations not intended and in ways not intended. I do appreciate the fact that CDC issued a clarification of the guidelines following receipt of the HP3 (Health Professionals for Patients in Pain) letter. Unfortunately, patients are still experiencing tapers that are both involuntary and drastic. The situation for patients is still dire. In 2014, I began tracking deaths and serious adverse outcomes of dose reductions. At present, the registry I started contains over 360 reports of suicide in pain patients. Just under 100 of these have been reviewed by Dr. Stefan Kertesz. There are over 100 reports of non-suicide deaths. These include myocardial infarction, vascular accidents, death by physical deterioration, and opioid refugee overdose deaths. We don't expect a miracle. We realize that no CDC workgroup can resurrect our dead. No one can give us back the lives we've missed out on while dealing with withdrawal due to tapering. We've missed out on weddings, anniversaries, and the just simple pleasures of ordinary life. Going forward, I would ask you to make policy decisions as if the decisions you make will have an immediate and lasting effect on the people in your lives you hold dear. I would be honored to serve on this workgroup.

Jeffrey Davis, MS
Director of Regulatory Affairs
American College of Emergency Physicians

Hello. My name is Jeffrey Davis. I am the Director of Regulatory Affairs at the American College of Emergency Physicians (ACEP). Just very briefly, we are extremely interested in this initiative to update or expand the guidelines and appreciate that you acknowledged earlier today that emergency management will be an important specialty to include in the workgroup. We believe as you consider updating the guidelines to possibly include acute pain, it is essential that you account for the nature of care that is provided in emergency departments across the country. Thank you again for hosting the meeting today, and for your leadership on this issue. Thank you.

Dara Lieberman, MPP
Director of Government Relations
Trust for America's Health

Thank you. My name is Dara Lieberman. I am the Director of Government Relations at Trust for America's Health, or TFAH. I am presenting this statement on behalf of our CEO, John Auerbach. We are a non-profit, non-partisan public health policy research and advocacy organization. We published a series of reports on the epidemics of alcohol, drugs, and suicide in the nation. We found that inappropriate prescribing remains a concern, especially as seen by the wide variation in the rates of prescriptions between the high- and the low-prescribing counties. That's why appropriate prescribing is a key component to ensuring fewer children and adults become addicted to opioids in the first place. After CDC issues its prescribing guidelines,

we've seen improvement in prescribing practices as indicated by the first decrease in opioid overdose deaths since 1990. There is an overall decrease in prescribing rates following the guideline's release, and a decrease in high risk prescribing. There's also been evidence that doctors are more intentional about consulting with their patients about non-opioid options for pain relief. The guideline has also had the intended outcome of raising awareness by prescribers, especially primary care provides who are often not taught appropriate prescribing practices in medical school. We acknowledge that some states, providers, and payers have used the guidelines in ways other than intended. We appreciate the work CDC has done to clarify that the recommendations should only be used as intended, including highlighting harmful ways the guidelines have been misused to deny medication or treatment of patients. Both the original guidelines and updated messaging have taken into account the circumstances of those with chronic pain, but policymakers and providers must use the guidelines in a way that is consistent with the recommendations. Even with progress, the opioid epidemic is far from over. CDC's focus on this issue needs to remain strong and clear: preventing inappropriate prescribing, protecting the needs of patients, and saving lives. Thank you.

Shaina Smith
Director, State Advocacy & Alliance Development
US Pain Foundation
Chronic Pain Patient

I'm Shaina Smith. I'm a Director for US Pain Foundation and I also live with chronic pain. We have received countless stories from individuals negatively impacted by the existing CDC guidelines. We are requesting that the guidelines be updated for the over 50 million Americans living with chronic pain. Since its release, the guidelines have crippled an already vulnerable and stigmatized population just due to the misinterpretation by policymakers and clinicians. The misapplication of the guidelines can be punitive, a disservice to patients, and has led to irreparable damage such as forced tapering, prescribing limits, negative health outcomes, the firing of patients, and even suicide. The US Food and Drug Administration has received accounts of serious harm in patients whose medications have been discontinued or dosages rapidly decreased. Its April 9th Safety Announcement did warn prescribers that no standard opioid tapering schedule exists that is suitable for all patients. The Pain Management Best Practices Inter-Agency Task Force report notes in its Section 2.2 titled "Medication" that there should not be specific dosage limits such as the 90 morphine milligram equivalent per day, especially since therapeutic needs vary from individual to individual. Also, in a Fox News series that was titled "Treating America's Pain: Unintended Victims of the Opioid Crackdown, Part 1 – The Suicides," reporters spoke with doctors who said they knew of patients who took their lives after losing access to opioid treatment. With CDC aware that those with chronic pain have died by suicide, as confirmed by Dr. Debbie Dowel, a lead author of the CDC guidelines, it is evidence that change does need to happen sooner rather than later. In the updating process of these guidelines, we ask that it be transparent and allows ample time for the public to digest and also comment on these proposed changes. Pain management doctors, as well as chronic pain patients and non-profit pain patient advocacy organizations, should be serving on the Opioid Working Group as well as the guidelines revision committee. Include language that clarifies individuals with chronic pain who have been medically stable on long-term doses of their opioid medication must not be forced off them, but be permitted to be on them if the patient wishes to be included in the updated revision. Thanks for the opportunity to speak to the planned updating of the *CDC Guideline for Prescribing Opioids for Chronic Pain*. The US Pain Foundation also welcomes the opportunity to serve on that working group.

Peter Pischke
Independent Reporter journalist
Chronic Pain Patient Advocate

Hello. My name is Peter Pischke. I'm an independent reporter and chronic pain patient advocate. I work frequently with the Chronic Illness Advocacy & Awareness Group (CIAAG). I am also a chronic pain patient myself who, one of the many hundreds of thousands if not millions, that have been forcefully tapered and abandoned by our once trusted doctors. I like giving this comment via audio because I would like not only that my comments be on the record, but to break through to the humans that are in that room that will be deciding these guidelines. I appreciate the honesty of Dr. Chou in particular in his comments he made today, and I've seen his stuff online as well, recognizing that even though he was one of the creators of the 2016 guideline, he has received letters himself about his patients being over-prescribed for opioids. You are all aware that there could be millions of people have had their lives destroyed, ruined, stymied, stopped. As a patient advocate, I am unfortunately dealing with people on a daily basis who are struggling with suicidal thoughts and abandonment not sure how much longer they can go on. The situation is a bad one. I would like to say that if you're planning to release the new guideline in, what did you say, 2 years in 2021, how much longer will it take for those to make an impact? Chronic pain patients may not be able to last that long. Many won't. I beg you guys, the humans on the other side, to keep this in mind—to know that you will have to make a big statement and that you will not just be able to equivocate and try to play on both sides. You will have to make it clear as day so that every politician, every bureaucrat and administrator, every law enforcement official knows that what you guys tried to do in the 2016 guidelines failed miserably when it came to patients with cancer, patients with chronic pain, and patients that needed to use opioids, because anything less, and they will use it as an excuse to continue to marginalize us, excuse us, and throw us to the side. I'm begging you guys. Please, be your best selves. Be brave and do what's right. You know what's right, so please do it. Thank you for letting me put out my comments and letting me contribute. Have a great day.

Todd [No last name stated]
Chronic Pain Patient

I'm sorry. I'm crying, one from pain and two from mostly from Peter's plea. A lot of harm has been done by the 2016 guideline. A lot of harm. In the interim, while you're working to—I guess you're not working to undo that harm. You're working to reduce future harm. I understand. That's bureaucracy. But in the interim, I would like to echo what he said that there are people who are suffering. There are people being not treated. You can't bring back the dead, but you can stop them from piling up. To the physician on the board who had the courage morally to ask, not to the parliamentary, but perhaps you should have, whether you are allowed to reopen the 2016 guidelines. I believe someone told you that this is your committee or our committee, so yes, I think your question about whether or not you should be able to reopen the 2016 guidelines for revisions ought to be taken perhaps as a call for a vote on the record. I think that's an excellent idea that could prevent a lot of harm and injury to patients and citizens of this country, which is your stated recondite as the CDC. Now, I will let you do what it is that you will do. Thank you.

Amber Bullington
Intractable Pain Patient

Hi. My name is Amber Bullington of Minnetonka, Minnesota. I'm an intractable pain patient. I was forcibly tapered in July of 2017 by my primary care physician. The rapid taper nearly killed me. I have ongoing health issues due to the taper and also untreated pain. The increase of my ibuprofen use has led to chronic kidney disease. I had no issues for over 15 years using opiates to manage my pain. I did nothing wrong and was forced to give up the medication regimen that had worked really well for me for many years. I don't understand how we continue to say that this is a prescription drug problem when we all know that it is an illicit fentanyl and street drug problem. I've looked at the death records in Minnesota from 2018. The deaths are overwhelming from street drug use. So, I do not know why we continue to pursue punishing people who need opioid pain medication. My mother is 81 years old and is in California dying in a hospital right now. I have had to beg for IV Tylenol® and have been told that there's not enough to go around. So, as you force people off of opiates on to Tylenol®, now there's not enough Tylenol® to go around. So, my mother who is dying lies in bed in pain. I have had to beg for 7 MME oxy for her. No one should have to die in pain. No one should have to live in pain. We need to rescind the CDC guidelines. Undo the harm you've done. You say you want to do well. You say do good. You want to save lives. You're not saving lives. Overdoses continue to escalate. Pain patients are dying and suffering. We need to do something and do something now. I've already been suffering for two and a half years. I've had friends who have died by suicide and friends who have died by heart attack because they've been forced off of their medication. We can't wait two years for you guys to decide to do something. Do the right thing. We need it now. We need help now. We need our voices heard. I have worked with the Minnesota Department of Human Services (DHS) Opioid Prescribing Work Group (OPWG), which in my opinion has been an unmitigated disaster. Doctors are being threatened. Doctors are quitting. When I was dismissed from my PCP, it took me 8 months to get an appointment at a pain clinic because there's just not enough doctors to go around. So, I am begging the CDC to get out of this business. Let the doctors and the patients determine the care, and something needs to be done now. We can't wait any longer. Thank you.

Lisa Kronus
Registered Nurse

It's Lisa Kronus again. I do have a question. Hopefully, this is an appropriate time. I missed a quarter of what was going on because of audio issues, but there was a Dr. Casey Chosewood, hopefully I said that correctly, that was talking about deaths in 2011 to 2015, which is like way outdated because the "pill mills" were closed, right, in 2012. My question is, are you guys doing studies on people that are under the age of 24? Because it seems like that's when the brain forms the risk versus reward, you know, the consequences. So, is that age group being studied at all? That seems to be the group that ends up in trouble. I think it's always been the group that has ended up with addiction problems. Either, you know, you play around a bit in college and then you get off of whatever you're playing around with or you end up addicted and that's the road you go down. So, anybody doing studies on that?

Dr. Frye remined everyone that at this point, they were taking comments and were not able to respond to questions, but that CDC would respond to questions after the public comment ended. She stressed that they wanted to hear from everyone, and that there would be another comment period the next day from 10:40 to 10:55 AM. She also reminded everyone that they could email their comments in as well to be included in the minutes. Dr. Greenspan added that

written comments would be accepted through close of business (COB) on Friday, December 6th to give people more time to respond.

Leah LoneBear
Advance Cardiac Life Support Medic
Chronic Pain Patient

Hi. My name is Leah LoneBear. I am an Advance Cardiac Life Support Medic. I am a chronic pain patient who is currently untreated. I buried my father because of untreated pain. He developed adult failure to thrive and died. I'm currently losing my life because of untreated pain. I hear you guys expressing empathy for addicts, empathy for the people at work who develop addiction . . . [briefly lost audio]. There are people who are cancer patients who are not getting pain relief; people in palliative care not getting pain relief; there are people killing themselves; there are people dying of heart attacks, stroke, and medical collapse. The 2016 guidelines went into effect and it had an absolute immediate effect across the board. You call them "guidelines." Providers calls them "law." Patients all over the nation got either forced tapered rapidly or, in my case, were completely cold cut off. It almost killed me. It has destroyed my life and it's killing my body. This is absolute insanity. 2020 and 2021 are too long. If you release the guidelines, then immediately what you need to do is stop the insanity in the interim. There are people out here dying, and you need to do something to stop the insanity that is happening to patients. It's not just people that are between 19 and 62. It's children. It's old people. It's people with cancer. It's sick people. There's people out here dying because of your actions. In case you didn't realize it, the 90 MME guideline that you wrote is the bar that the DEA uses on which to arrest doctors. So, there's people going to prison based on your 90 MME guideline. It is not prescription opioids that are killing people. The statistics that Dr. Richard Lawhern gave you were correct. What is killing people is illicit street drugs. It is fentanyl. It is heroin. It is tainted street drugs. It is not prescription opiates. If you really want to save people's lives, deal with illicit drugs and let doctors and patients decide what is best for them, and let people have their opiate medications and their quality of life back, because when you take medications away from people, you're destroying their lives. Thank you for your time.

Don Teater, MD, MPH
Teater Health Solutions

Hi. My name is Don Teater. I am a primary care doctor, a family physician, and I've practiced medicine for the past 30 years. For the past 5 years, my practice has focused on addiction treatment, OUD, and treating those people with chronic pain. I am also an educator and I educate prescribers on both pain treatment and addiction treatment. My wife is a behavioral health specialist who trains clinicians in the behavioral treatment of acute and chronic pain. Full disclosure, we have written a book together on behavioral treatment of chronic pain and also I was lead facilitator during the Expert Panel during development of the CDC guidelines. I do want to say that in my experience educating prescribers, I feel that prescribers have really learned a lot from the CDC guidelines. I think there are many fewer people being started on opioids for chronic pain because usually, that the benefits outweigh the risks for that. I think we are starting fewer people on opioids for chronic pain and providing other better non-opioid pain treatment. I do want to comment on what several callers said about this is no longer an opioid problem, but is a heroin and fentanyl problem. In my addiction treatment, I've probably treated 2000 people with opioid use disorder and I have yet to see somebody who started with heroin or fentanyl. They still start with prescription opioids, so this an issue that we need to be looking at. I commend the CDC for looking at acute pain treatment. Many of my patients got started on pills that were prescribed for acute pain. I hope as they look at this, they look at both medication and

non-medication treatments for acute pain. There are a number of behavioral therapies that should be used and a number of other treatments that can be very effective for acute pain. I also just want to make one more comment in that I do realize that there've been a lot of folks that have been on high-dose opioids whose treatment has been inadequate because it had stopped rapidly. The recent HHS guideline for tapering patients, that I think was written by Debbie Dowell and several others, talked about transitioning people to buprenorphine. I think that information needs to be put out more to prescribers. Buprenorphine as a transition from high-dose opioids can be very effective in both pain relief and as a safer alternative for the opioids. Thank you for this time. I appreciate you guys staying late to hear us. Thank you.

Others wishing to make a comment were reminded that an additional public comment session would be held on Thursday, December 5, 2019. Furthermore, it was announced that those wishing to submit written comments to be included with the minutes of this meeting, could do so by emailing their comment to ncipcbsc@cdc.gov before the close of business on Friday, December 6, 2019.

Discussion/Vote: Proposed BSC OWG

Victoria Frye, DrPh, MPH
Chairperson, NCIPC BSC
Associate Medical Professor
Department of Community Health and Social Medicine
City University of New York School of Medicine
City College of New York

Dr. Frye expressed gratitude to the members of the public who took the time to provide their comments and perspectives and share their experiences. She opened the floor for discussion among the BSC members regarding the public comments and/or the formation of the proposed BSC OWG.

Discussion Points

Dr. Cunningham said that hearing the public's comments and knowing how difficult and challenging it is to treat patients with pain, and hearing some of the unintended consequences of the 2016 guidelines, she reiterated that as this moves forward, part of the charter should be very careful dissemination—not just creation of a guideline. They must do as best they can to make sure the intensions are known.

Dr. Floyd emphasized that in terms of looking at research from the CDC standpoint, he would like to see research on patients who are put on tapers as he stated earlier. He reminded everyone that he mentioned 3 parameters when he first brought that up: pain level, quality of life, and function. The commenters raised other valid points, including that suicide rates should be incorporated in those types of studies as well.

Motion / Vote

Dr. Porucznik made a motion, which **Dr. Floyd** seconded, to establish a BSC Opioid Workgroup (OWG) to revisit the prescribing guidelines. The motion carried unanimously with no abstentions.

Adjournment for the Day

Victoria Frye, DrPh, MPH
Chairperson, NCIPC BSC
Associate Medical Professor
Department of Community Health and Social Medicine
City University of New York School of Medicine
City College of New York

Dr. Frye thanked everyone for their time, the incredibly comprehensive and cogent presentations, and the robust discussion. She also recognized and thanked the members of the public. The people who are living with chronic pain who spoke with them during the public comment period reminded them of the BSC's purpose. She expressed her hope that they would be able to live that purpose through their work, both on the BSC and through the OWG.

With no announcements made, further business raised, or questions/comments posed, **Dr. Frye** officially adjourned the thirty-second meeting of the NCIPC BSC at 4:22 PM.

Day 2: December 5, 2019

Call to Order / Welcome

Victoria Frye, DrPh, MPH
Chairperson, NCIPC BSC
Associate Medical Professor
Department of Community Health and Social Medicine
City University of New York School of Medicine
City College of New York

Dr. Frye called the second day of the thirtieth-second meeting of the NCIPC BSC to order at 9:06 AM Eastern Time. 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. Quorum was maintained throughout the day. A list of meeting attendees is appended to the end of this document as Attachment A.

The Importance of Contextual Factors in Addressing Health Inequities

Introduction

Thomas Simon, PhD
Associate Director for Science
Division of Violence Prevention
National Center for Injury Prevention and Control
Centers for Disease Control and Prevention

Dr. Simon provided a brief background for the first two presentations of this session on violence prevention. Health inequities is a particularly important issue for violence prevention. For example, looking at youth homicide rates by race, the homicide rates for African American youth are about 14 times higher than the homicide rate for non-Hispanic white youth. The homicide

rates for Hispanic youth and AI/AN youth are 3 times higher. These inequities are longstanding. It is known that important social conditions are contributing to homicide rates and are disproportionately experienced by minority youth, including concentrated poverty, residential segregation, and other forms of racism that limit educational, job, and other opportunities. To reduce these inequities and to have a sustained population-level impact on violence prevention, the larger social contextual issues that contribute to risk for violence must be addressed. Dr. Simon indicated that to kick off the discussion during this session, Dr. Rosalyn Lee would talk about some of the recent efforts of the DVP Race and Violence Workgroup to reflect on their work to describe disparities, contextual factors, and potential missed opportunities. Dr. Linda Dahlberg would then discuss some of the frameworks DVP uses to understand structural determinants of health inequities, and the opportunities for prevention that are reflected in DVP's suite of technical packages for violence prevention. He expressed their hope that these presentations would set the stage for a robust discussion about what else they could be doing to address health inequities.

DVP Race and Violence Workgroup Efforts

Rosalyn Lee, PhD, MPH, MA
Behavioral Scientist, Division of Violence Prevention
Co-Chair, Division of Violence Prevention Race and Violence Workgroup
National Center for Injury Prevention and Control
Centers for Disease Control and Prevention

Dr. Lee shared some information about the DVP Race and Violence Workgroup and some of the activities in which they have been engaged. The Race and Violence Workgroup was established after 9 African Americans were murdered during bible study in a church in Charleston, South Carolina in June 2015. Conversations about how DVP could address that tragedy resulted first in an informal group called together by the DVP Director, which pondered DVP's role in addressing such tragic events. This group also questioned how DVP could better address the many ways that racial/ethnic minorities experience inequities in the burden of violence, where addressing inequities was defined as addressing group differences caused by systemic differences in social conditions and processes that effectively determine health. In 2016, the informal group became a formal workgroup and funds were made available for health equity training. A significant number of staff, including leadership, have engaged in the training since then.

In 2017, the workgroup engaged in an exercise to assess how well DVP was doing with regard to racial/ethnic inequities. They asked the following questions:

- ❑ Are DVP efforts aligned with the distribution of the burden of violence?
- ❑ How well is DVP furthering the understanding of what drives racial/ethnic inequities?
- ❑ Are we approaching inequities in ways that help rather than hurt?
- ❑ Does our work move the field forward?

There are many possible indicators that they could have looked at to answer some of these questions. They decided to begin by looking at DVP publications from the prior year, 2016. These publications included government reports, technical packages, peer-reviewed articles, the products of collaboration between staff and cooperative agreement awardees, and peer-reviewed articles developed as the result of staff interest and subject matter expertise. They sought to identify the number of publications that mentioned race and ethnicity, reported

outcomes by race, identified racial/ethnic differences, and explored underlying reasons for identified differences.

The workgroup reviewed 95 publications reported in the 2016 yearly DVP-wide bibliography. Of those, 74 were included in the workgroup's analysis. Any papers that were not specifically about violence, that described a data system, or that provided guidance for using CDC documents were excluded. Of the 74 papers reviewed, 59 at least mentioned race/ethnicity (e.g., the word "race," the word "ethnicity," or any specific racial group). Of these 59 papers, 51 were empirical papers. Of the 51 empirical papers, 19 disaggregated outcomes by race. Only 5 of those 19 provided a possible explanation for why inequities were present. These findings illustrated to workgroup members that DVP needed to be more intentional about addressing health inequities.

This is important because DVP cannot achieve its public health goals if they are not focusing on populations at greatest risk that shoulder the greatest burden. When these populations are incorporated into DVP work, inequities cannot effectively be addressed if underlying reasons why gaps exist between groups are not addressed. Also, if the context about the systemic factors that underlie inequities is not provided, DVP may contribute to negative narratives such as the belief that certain groups are simply more violent. By putting racial/ethnic inequities into context, DVP can help frame the research agenda and influence what is done to eliminate inequities.

After briefing DVP on their publication review, the workgroup recommended that: 1) DVP move beyond only mentioning and reporting race/ethnicity; 2) do a better job of placing unequal burden and outcomes into context of systems that develop and maintain inequities; 3) begin shifting the narrative from individual risk to societal conditions; and 4) identify opportunities to eliminate racial/ethnic inequities.

They are in the process of developing a report that specifies recommendations that can be implemented throughout DVP. They have briefed leadership and have begun to prioritize recommendations that fall into three main categories, which are to: 1) foster dialogue to build understanding of the importance of doing this work; 2) build capacity; and 3) strengthen organizational policies and practices.

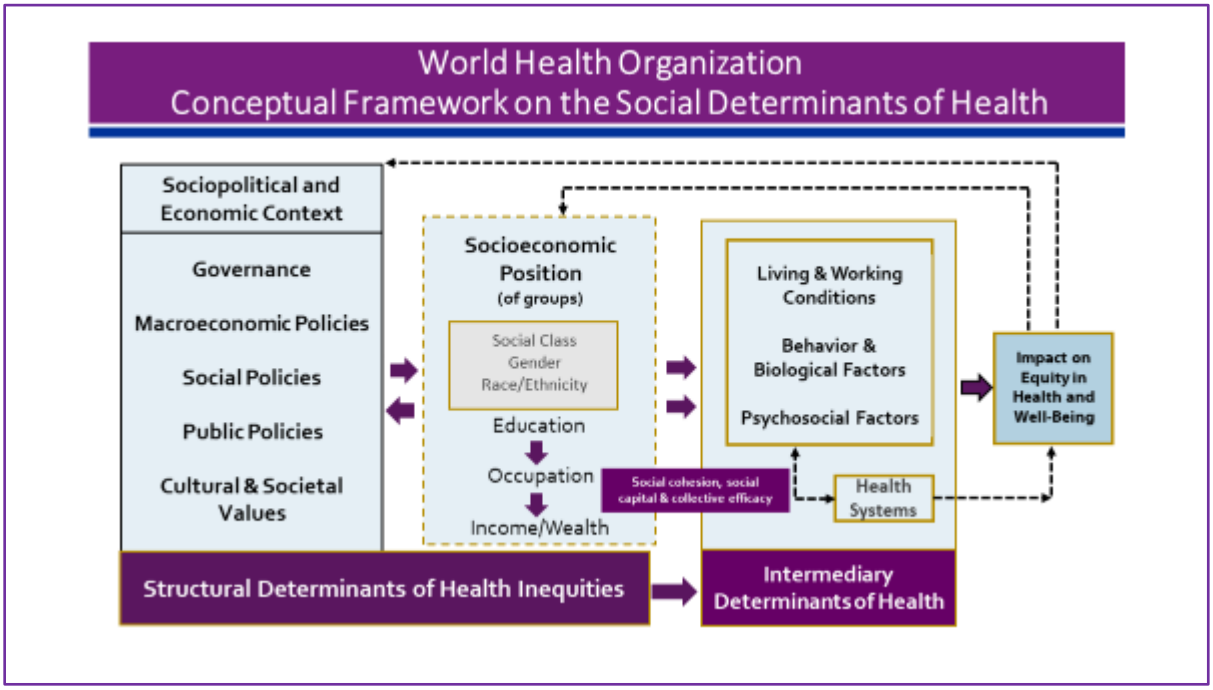
Dr. Lee shared a few items from the Policy and Practices category on which they already have begun working with leadership to implement. NCIPC is developing a new Project Initiation System. They have contributed to that initiative such that when their colleagues are conceptualizing new projects and submitting information into the system, they will be prompted to consider health equity if they have not done so already. They can have conversations with their supervisers with regard to how to consider health equity. At the end of the process when a product or publication has been developed and it needs to go through clearance, supervisors will be prompted to ensure that the document has considered health equity. They will be given a prompt on the Clearance Checklist. There are preliminary discussions underway regarding how to enhance the NOFO development process, and they have begun talking with leadership about standing up a DVP-wide training based on the World Health Organization (WHO) *Conceptual Framework for Action on the Social Determinants of Health* in order to build capacity in their colleagues to identify root causes of violence.

The Social Ecological Model

Linda L. Dahlberg, PhD
Senior Advisor to the Director
Division of Violence Prevention
National Center for Injury Prevention and Control
Centers for Disease Control and Prevention

Dr. Dahlberg described some of the frameworks DVP uses in its work to understand contextual factors, and then drew upon some examples from their technical packages to illustrate what they are doing in this space. CDC has been using the Social Ecological Model since the *World Report on Violence and Health* was published. This model is useful in conveying the point that violence is a product between context and person, not person alone or context alone, and that this interaction plays out across the different levels of the social ecology. This model can be used for prevention across the social ecology. The model can be used to understand levels of risk, because the different levels influence each other and shape behavior and outcomes. The model can be used as leverage points for prevention. Individual risk factors can be modified directly by influencing close proximal relationships (peers, partner, within the family environment). Individual risk factors also can be modified by influencing the characteristics of settings people move through. In addition, risk can be modified by addressing larger social determinants and other cultural and social factors. On balance, a lot more attention has been given to the individual and relationship level factors and far less at the outer levels of the social ecology.

As Dr. Lee mentioned, another framework DVP has started using in its work is the WHO Conceptual Framework on the Social Determinants of Health. The WHO framework is a useful model for conveying some of the interactions in the Social Ecological Model:



Beginning at the far right with outcomes, this is where differential impact on health and wellbeing is observed. The model first asks what might be influencing that differential impact and looking first at material circumstances like living and working conditions, behavioral and biological factors, psychological factors, and health systems and how they interact with those factors. In the model, those are referred to as "Intermediary Determinants of Health." It is known that access to material circumstances and these other factors vary widely and are not distributed evenly in the population. Indeed, they are influenced by socioeconomic position as determined by the intersection of social class, gender, and race/ethnicity and how those influence access to education, occupation, and income/wealth. Socioeconomic position exerts influence in both directions, by impacting the intermediary determinants of health and by shaping the larger sociopolitical and economic context. Sociopolitical and economic context refers to governance, macroeconomic policies, social policies, public policies, and cultural and social values. Together, the first two boxes are referred to as the "Structural Determinants of Health Inequities." There are some crosscutting factors such as social cohesion, social capital, and collective efficacy. The dotted lines on the framework are essentially the feedback loops. This model is useful in helping to flesh out and understand some of those connections.

As Dr. Simon mentioned, DVP released a suite of technical packages over the last few years addressing the different forms of interpersonal violence, suicide, and most recently the ACEs prevention resource that features a select group of strategies that are drawn from all of the technical packages. At the outset, each technical package talks about the differential burden and highlights the fact that racial/ethnic and sexual minorities disproportionally bear the burden of violence. Every technical package includes strategies that are intended to change the contextual factors and conditions that contribute to violence. Dr. Dahlberg started with a description of the outer levels of the social ecology, beginning with community-level prevention.

The community level is often misunderstood as referring to community-based efforts. This instead refers the settings that people move through (e.g., neighborhoods, schools, workplaces, campuses, organizational settings), particularly with regard to the characteristics of those settings that increase risk for or protect people from violence. Some of those characteristics include concentrated poverty, residential instability, high rates of crime and violence, socially disorganized neighborhoods contributing to a lack of shared trust amongst neighbors and lack of willingness to intervene, weak institutional support, availability of alcohol, lack of attention to safety and security in schools and organizational settings, and rules and policies that contribute to or protect people from violence. For example, there are certain policies in schools such as expulsion and suspension that remove a source of supervision from youth. In workplaces, the way hiring and firing is handled may contribute to risk.

One approach to community-level prevention that is included in multiple technical packages is to modify the physical and social environment. This would include enhancing the physical and social characteristics of settings that bring people together, increasing trust, and strengthening connective factors which is a protective factor across all forms of violence. Examples would be the application of crime prevention through environmental design (CPTED) principles, abandoned building/vacant lot remediation, greening, reducing suicide risk at hotspots such as bridges/balconies and isolated locations like railroad tracks, monitoring access to buildings/grounds and hallways in schools, and policies that promote healthy relationships and respectful boundaries and reduce tolerance for harassment and violence. Noted in the technical packages is that this particular approach is associated with reductions in some of the most serious and lethal forms of violence, including youth homicide, firearm-related assault, non-violent crimes and arrests, suicide, and SV perpetration and victimization within and outside of the context of a dating relationship.

Another approach is to focus on community-level risks that are associated with multiple forms of violence such as concentrated poverty, residential instability, and the lack of safe and affordable housing. Two approaches for addressing these risks are inclusionary zoning and low-income housing tax credits. Inclusionary zoning is gaining popularity across the country. This includes municipal and county planning ordinances that require that a certain part of new construction be affordable to low- and moderate-income residents. The idea is to increase social integration and address economic factors by giving people access to better schools and community supports and services. This has not been fully evaluated on violence outcomes, so this is an area that needs more evaluation. Low-income house tax credits are designed to increase the availability of safe and affordable rental housing in very highly distressed urban neighborhoods, where there tend to be very high rates of crime and violence. There is some evidence that low-income house tax credits can reduce the concentration of poverty and violent crime and aggravated assault without displacement effects, which is very important in terms of not merely shifting the problem 4 to 6 blocks away. This also is an area in which more evaluation is needed.

Excessive alcohol use is also a risk factor for multiple forms of violence. Alcohol does not cause people to be violent, but often interacts with individual and other community factors to increase the risk for perpetration and victimization. Relevant policies focus on beverage size, hours and days of sale, and location and density of outlets. Heavy concentration of alcohol tends to be in some of the poorest locations of a community. In terms of the evidence described in some of the technical packages, it is known that higher pricing and regulating hours and days of sale are associated with reductions in risk. Conversely, greater density and large beverage size are associated with increases in risk.

Societal-level interventions focus on macroeconomic policies; education and labor policies; social protection policies to buffer and help mitigate risk and exposure; and other reforms that would be considered at this level like incarceration, banking and lending practices, voting rights, and governance. One of the things noted in the technical packages is that studies show that racial/ethnic and gender inequality in education, occupation, and income increases the risk for victimization and perpetration. Some of the technical packages highlight policies and programs designed to improve education, occupational, and income outcomes as a way of reducing risk and buffering against negative influences. Every package except the suicide packages strongly emphasizes the importance of early childhood education, and how access to high-quality early childhood education can pave the way for lifelong health, wellbeing, and opportunity. People often talk about universal pre-K, which means pre-K made available to all children in a state regardless of family income, children's abilities, or other factors. Currently in the US, 39 states offer what might be considered voluntary pre-K. However, not every child is eligible. Only a few states offer universal pre-K. The technical packages do not call for universal pre-K, but they do highlight the importance of early childhood education and programs that specifically involve and engage parents. These are the programs from which long-term benefits are observed, some of which are summarized here in terms of some of the longitudinal, rigorous evaluations that show that these types of programs are associated with:

- ❑ Better math, language, and social skills
- ❑ Less likely to be held back a grade in school
- ❑ More likely to graduate and attend college
- ❑ More likely to be employed and have higher earnings as adults
- ❑ Lower rates of depression
- ❑ Lower rates of substance use
- ❑ Lower rates of substantiated child abuse and neglect

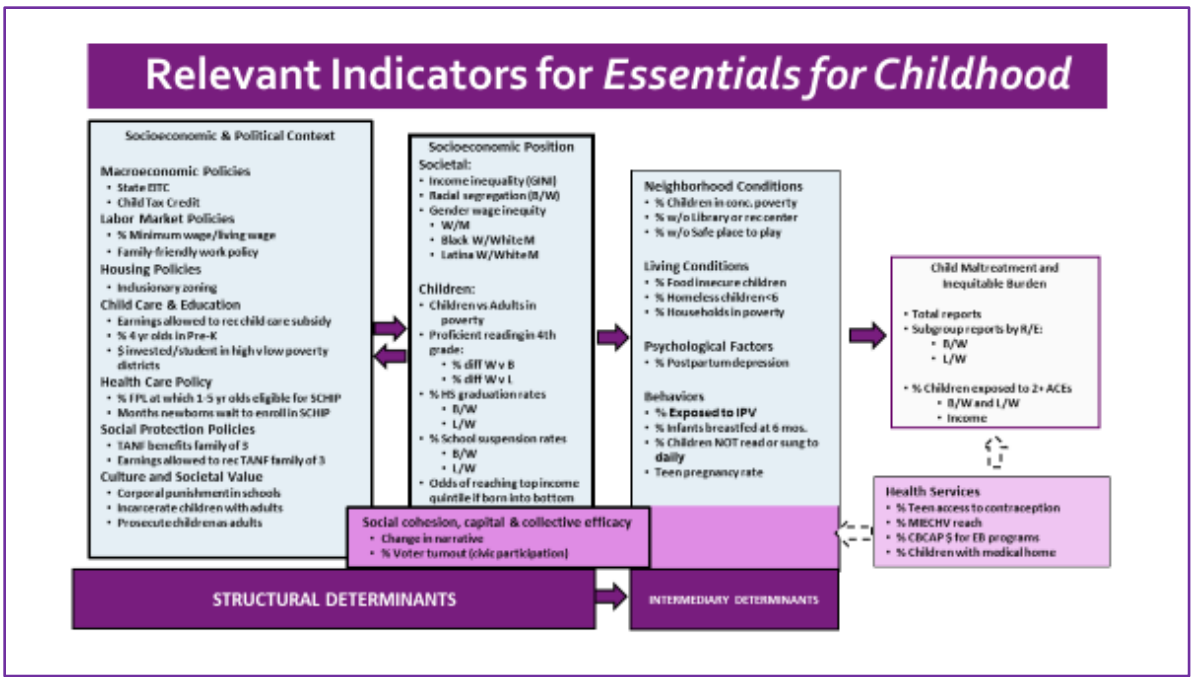
- ❑ Fewer out-of-home placements
- ❑ Lower rates of arrests for violent and nonviolent offenses
- ❑ Lower rates of convictions and incarceration well into adulthood

The technical packages also include some other examples, such as living wages that refers to the basic income required to meet basic expenses for housing, food, and healthcare and comparable worth policies that address the gender gap in pay. As noted in both the IPV and SV technical packages, studies show that a national comparable worth policy would reduce not only earnings in equality overall, but also earnings in equality between men and women and earnings in equality among women. There also is within-sex segregation of occupations. Such policies also reduce rates of poverty, controlling for human capital, labor supply, and other market characteristics. The technical packages also highlight a number of ways to strengthen household financial security, such as Earned Income Tax Credits (EITC), Child Tax Credits (CTC), and temporary forms of assistance such as childcare substances and family-friendly policies like paid leave. One thing that is known and is described in the technical packages is that adequate work supports are associated with labor force participation among women maintaining their employment, reductions in mental health symptoms, parental depression, and family stress and instability—all of the things that increase risk for the different forms of violence. Adequate work supports are potentially protective across multiple forms of violence.

DVP is trying to do more in terms of research. The following are some examples of extramural research studies that DVP currently has underway:

- ❑ Evaluation of family economic policies (e.g., TANF, minimum wage, EITC) to prevent family and youth violence
- ❑ Evaluating the impact of Low-Income Housing Credits on child abuse and neglect, IPV, and opioid overdose
- ❑ National evaluation of Medicaid expansion on child abuse and neglect, youth violence, and IPV
- ❑ Evaluation of state earned income tax credits to prevent multiple forms of violence
- ❑ Longitudinal evaluation of the efficacy and implementation of Anti-Bullying Laws on youth violence in the US

A number of staff within DVP also are conducting intramural research. One example is a study examining the impact of CTCs at the federal level on child wellbeing. Another is assessing the impact of state income tax credits in terms of reducing the number of children entering the foster system. DVP's major programmatic work in the Rape Prevention and Education Program (RPE), Domestic Violence Prevention Enhancement and Leadership Through Alliances (DELTA), and Essentials for Childhood are all implementing strategies from the technical packages, with a particular emphasis on strategies at the outer levels of the social ecology. In terms of monitoring and evaluation, there are a number of relevant indicators that are mapped across the WHO framework that DVP staff have been monitoring and tracking as a way of understanding the structural and intermediary determinants in producing inequities and risks for child abuse and neglect. This is illustrated in the Relevant Indicators for Essentials for Childhood shown in this graphic:



The staff have been tracking this internally trying to gather data on these indicators across all 50 states for a while.

Dr. Dahlberg concluded that the purpose of this presentation was just to offer a flavor of some of DVP's work and some of the more recent directions DVP has been taking in its work.

NCIPC Tribal Workgroup

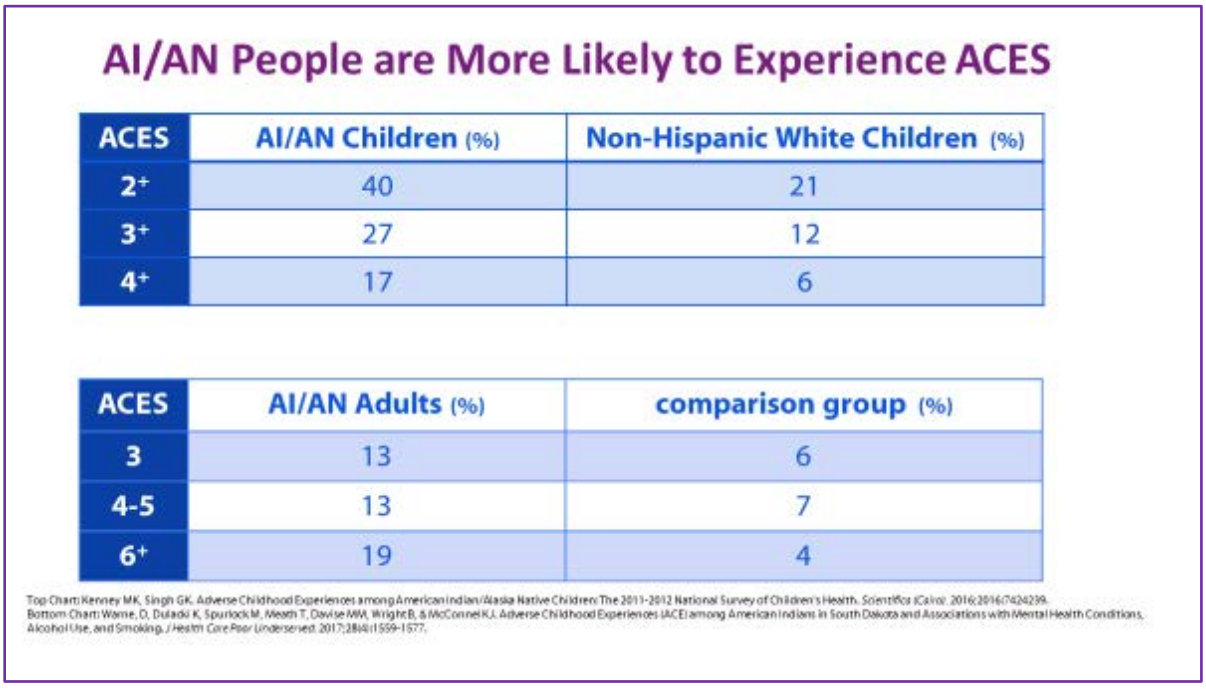
Jason Hymer, MPH, Indian Health Services Liaison
Stacey Willocks, MS, Evaluator
Co-Chairs, NCIPC AI/AN Workgroup
National Center for Injury Prevention and Control
Centers for Disease Control and Prevention

Mr. Hymer indicated that he and Stacey Willocks are two of the Co-Chairs of the NCIPC's AI/AN Workgroup. For AI/AN communities, injury and violence occur across the lifespan and generations. These effects can reverberate across generations and contribute to health inequity for AI/AN. During this presentation, Mr. Hymer discussed the injury and violence burden among AI/AN communities and some of the challenges these communities face in relation public health, while Ms. Willocks discussed AI/AN communities and public health solutions, NCIPC Tribal Workgroup efforts, and funded projects through the Injury Center that address AI/AN injury and violence.

Injury and violence are significant public health issues that affect AI/AN populations and are among the leading causes of death for all age groups. Fatal injury, homicide, and deaths by suicide are among the top leading causes of death for AI/AN ages 1 through 54 years and represent a significant number of deaths overall. For comparison, unintentional injury is the fourth leading cause of death for whites compared to third for AI/AN. Suicide drops to the 9th leading cause of death for whites compared to 8th for AI/AN[1]. Shifting to rates, AI/AN populations have higher rates of injury-related death compared with other races. Between 2013

and 2017, the overall injury mortality rate for AI/AN was 1.6 times the rate of non-Hispanic whites. In terms of injury rates for select injury mechanisms by race, AI/AN have higher rates of death related to drug poisoning and suicide, which are NCIPC priorities, and motor vehicle traffic crashes for which the rate for Native Americans is more than double that of other races[2] [[1]WISQARS. Leading Causes of Death, 1999-2017. Accessed on November 18, 2019; [2]WISQARS: Fatal Injury Reports, 1999-2017. Accessed November 13, 2019].

Another metric of interest is ACEs, which are a leading priority of the Injury Center and are also a common experience among AI/AN people. When they work in Tribal communities, they are frequently asked what to do when an ACE score is 9 or 10. Data from the National Survey of Children's Health (NSCH) and the South Dakota Health Survey are shown in the following tables:



AI/AN People are More Likely to Experience ACES

ACES	AI/AN Children (%)	Non-Hispanic White Children (%)
2+	40	21
3+	27	12
4+	17	6

ACES	AI/AN Adults (%)	comparison group (%)
3	13	6
4-5	13	7
6+	19	4

Top Chart: Kenney MK, Singh GK. Adverse Childhood Experiences among American Indian/Alaska Native Children: The 2011-2012 National Survey of Children's Health. Scientifica (Cairo). 2016;2016:7424239.
Bottom Chart: Warne, D, Dulacki K, Spurlock M, Meath T, Davise MM, Wright B, & McConnel K.J. Adverse Childhood Experiences (ACE) among American Indians in South Dakota and Associations with Mental Health Conditions, Alcohol Use, and Smoking. J Health Care Poor Underserved. 2017;28(4):1559-1577.

According to the 2011-2012 NSCH, AI/AN children were more likely to experience ACEs than non-Hispanic white children. The top table AI/AN children had much higher proportions of children who were reporting 2 (40.3% versus 21.0%), 3 ACEs (26.8% versus 11.5%), or 4 or more ACEs (16.8% versus 6.2%). The bottom table shows the results from the South Dakota Health Survey that was completed in 2014 that oversampled for AI/AN populations in the state. AI/AN adults reported a higher prevalence of abuse, neglect, and household challenges and had a higher number of ACEs compared with non-American Indians in South Dakota of 3 ACEs (13.0% versus 6.0%), 4-5 ACEs (13.1% versus 7.4%), or 6 or more ACEs (19.3% versus 3.9%).

Tribal communities also face some significant challenges when addressing important public health issues like injury and violence. Although it is known that AI/AN populations are impacted by injury and violence at higher rates than other races, it is likely that those rates do not tell the entire story of what is actually happening. Misclassification of race on death certificates and hospital discharge data results in under-reporting of AI/AN hospitalizations and deaths in state-level and national datasets. The incidence of misclassification varies widely among the different IHS service areas. For example, the incidence is much lower in Alaska than in places like the Eastern US, the Northern Plaines, and the Great Plains.

Another challenge that is important to acknowledge is historical trauma. The treatment of AI/AN populations since contact with Europeans through colonization, which also includes policy of the US government throughout history, has resulted in some significant historical traumas that continue to affect Tribal communities today. Forced removal and relocation from traditional lands; removal of native children from families who were then placed in residential boarding schools where they often were abused and forced to abandon their languages and cultural traditions; and federal assimilation policies that were in effect through the early 1970s are just a few examples of traumas that have been endured by tribal communities. Looking at these within the context of health equity, these historical and intergenerational traumas contribute to significant health inequities that AI/AN face still today.

Oftentimes when looking at data and statistics, it is really easy to focus on the disparities and inequities. However, tribal partners often remind them that despite the grim statistics, it is important to focus on some of the good things that are happening in tribal communities and that those communities have some unique protective factors. It often is said the culture is prevention. Many tribes practice cultural traditions such as ceremony, dance, music, traditional foods, and languages among others. Elders and extended family play an important role in the lives of native youth and young adults, and there is a strong connection to community. While these indigenous protective factors are not yet evidence-based by Western science, NCIPC hopes to learn more about how these protective factors can help to reduce injury and violence in tribal communities.

With that in mind, **Ms. Willocks** discussed some of the specific work that NCIPC is doing. She emphasized that they hear consistently from their partners about the strengths that exist within indigenous communities. The approach NCIPC is taking builds upon those community strengths and working with tribal partners to take a public health approach, and the perceive this as something very integrated that the Injury Center does. About 2 years ago, they had an interesting confluence of staff coming to the Injury Center with deep experience in working with tribal communities and a beautiful prioritization by leadership on addressing injury in native communities. What staff want to do and what leadership is prioritizing does not always align, but it did. They have gotten a lot of leverage over the last few years and were able to found the center-wide NCIPC Tribal Workgroup in 2017.

The mission of the NCIPC Tribal Workgroup is to “Foster collaboration and advancement in the field of Injury and Violence Prevention for AI/AN people in support of CDC’s commitment to promote health, prevent disease and injury, and improve quality of life.” It is very important to note that the workgroup staff membership and leadership represent all three divisions of the Injury Center and that this is a very collaborative workgroup. They have codified that in their bylaws so that there is leadership representation of two Co-Lead from each division, because they understand the interrelatedness of factors that influence injury topics and they know they need each other to address the burden. They share ideas and resources, support each other’s efforts, identify shared strategies for addressing respective topic areas, and pull together and strategize how to move the work internally. They are an ambitious group, so they have a lot of objectives, which are to:

1. Support ongoing AI/AN injury and violence work at CDC
2. Promote collaboration to eliminate, control, and prevent injury and violence in AI/AN communities
3. Support research and programmatic activities to reduce injury and violence among AI/AN people

4. Maximize synergies across NCIPC's activities and programs related to AI/AN people and communities
5. Foster cross-division sharing of ideas and information related to injury and violence among AI/AN people and communities
6. Inform NCIPC and division leadership on AI/AN issues and gaps in the field and propose solutions

Ms. Willocks emphasized the first objective to support ongoing AI/AN injury and violence work at CDC. This is very important because, upon founding the workgroup, their very first project was to do an internal scan to determine what was going on. They knew that across the Injury Center there were pockets of projects and people who had an interest in working with tribes and funding was being allocated to tribes, but they had not ever pulled all of that together to examine what they were doing as a center. They especially identified projects in violence prevention and motor vehicles that had been going on in a long-term way, but this was the first time that people from across the divisions came together around that work.

Though not an objective at the outset, one of the ways that the Tribal Workgroup is functioning is that they are somewhat of a capacity-building entity as well. There is a wide range of experience among the staff, some of whom have worked in tribal communities and with tribal governments for years. Others just have an interest. They pull together speakers, provide in-house training, consult with one another if someone is about to go out into Indian Country for the first time to conduct a site visit, and provide resource and support for those staff as well. While that is not on the list of objectives, it is a beautiful unintended consequence of this group coming together.

In terms of NCIPC's external work in Indian Country, there are funded projects across NCIPC topic areas that focus on tribal injury prevention. NCIPC is currently funding tribes and tribal organizations in the following topic areas: Opioids, Motor Vehicle Crashes, Older Adult Falls, Violence, and Cross Topic (ACEs and Tribal Listening Sessions). Ms. Willocks focused most of the remainder of her talk on two of NCIPC's priority areas, opioid overdose and ACEs work with tribal partners.

This is an exciting time at NCIPC because they now have $12 million dollars in the field to combat the opioid epidemic in tribal communities. NCIPC is using the following 3 funding vehicles to do that:

- Tribal Epidemiology Center Public Health Infrastructure (TECPHI) Opioid Supplement. The 11 recipients receiving funding under the TECPHI mechanism:
    - Provide technical support to tribes and key partners for data collection use and sharing
    - Improve racial classification, which is one of the major data challenge that folks in the field and NCIPC face
    - Expand data sharing to enhance non-fatal overdose data collection from EDs
    - Improve data extraction from death certificates to collect timeline data on opioid-related overdose deaths

- Tribal Public Health Capacity-Building and Quality Improvement Umbrella Cooperative Agreement. The 15 recipients receiving funding under this mechanism:
    - Focus on strategic planning or strategic planning relevant to opioid overdose
    - Have the option to focus on 1 of 3 other strategies:
        - Epidemiologic surveillance and public health data structure, one of the biggest challenges in doing public health work in Indian Country
        - Implementation of evidence-based health system interventions specific to interventions that are appropriate for implementation in tribal context in tribal health systems
        - Innovative community-based strategy, which feels like a win because it allows recipients or partners to leverage traditional practices in support of the fight against the opioid overdose epidemic
- The Strengthening Public Health Systems and Services Through National Partnerships to Improve and Protect the Nation's Health mechanism funds the National Network of Public Health Institutes (NNPHI) to create and convene an Opioid Technical Assistance Advisory Group for Tribes to provide enhanced technical assistance to tribes implementing overdose prevention activities and to create a Tribal Opioid Community of Practice.

NCIPC has a number of collaborative projects to address ACEs in native communities. Some of this work is in the DIP and some of it is elsewhere:

- Eagle Books is a children's book series that was developed in NCCDPHP at CDC. They develop children's books to influence youth health behaviors related to diabetes and engaging in services for diabetes. In their evaluation, they found this to be effective. Storytelling and sharing stories is a very powerful communication and learning mode in tribal communities, and they were able to show health behavior change using this approach. NCIPC is modeling that and has two children's books currently in development for kindergarten through 3rd grade. They are working with a native storyteller and a native illustrator to develop the books. NCIPC has been engaged with the field CDC's Tribal Advisory Committee and people at the community level to work on message development, get feedback on drafts, get feedback on illustrations and symbolism within the illustrations, and for usability testing. They are in the process of launching a pilot study of the first draft version of a book. These books are intended to promote tribal protective factors for violence. The first book focuses on bystander prevention activities and the second focuses on cultural protective factors.
- NCIPC has set up a partnership with the Association of American Indian Physicians (AAIP) to develop an ACEs toolkit for physicians. NCIPC colleagues worked with AI/AN physicians to learn more about their needs and opportunities for prevention, which resulted in a draft publication and the development of an ACEs webpage resource for American Indian Physicians.
- NCIPC has partnered with the National Indian Health Board (NIHB) to create an ACEs Resource Basket for native communities to address and prevent ACEs.
- NCIPC is also convening key stakeholders to better understand violence prevention and injury prevention needs among native people.

Another big win came about through a partnership with Holly Billie, NCIPC's colleague at IHS. It was her brainchild to create the first National Conference on AI/AN Injury and Violence Prevention (IVP). She reached out the NCIPC to ask if they would like to join, which they did in a big way and it went really well. NCIPC collaborated with the IHS Injury Prevention Program to co-host this first conference in July 2019. There were over 250 attendees representing researchers, practitioners, students, and federal partners from across Indian Country. This strengthened NCIPC partnerships with federal partners, especially IHS. The evaluations were overwhelmingly positive, with a strong interest in continuing the conference in future years.

Ms. Willocks closed with a brief description of NCIPC's Tribal Listening Sessions. DVP and VIP project were able to join together under a mechanisms to fund NIHB to convene 2 different sets of Tribal Listening Sessions during FY 2020 to gather input from tribes to inform future initiatives. They have been engaged with CDC's Tribal Advisory Committee (TAC), which is government representatives from tribes. This is a very high-level engagement in which TAC guides NICPC in its work, for which they are very grateful. They have had a very strong-felt need for connection with the field and the folks on the frontline, so this idea has been brewing for about 2 years and is finally coming to fruition. DVP will be conducting a set of Listening Sessions on establishing priorities for ACEs, SV/IPV, and other violence areas. DIP will be conducting a set of Listening Sessions focused on injury surveillance issues and priorities for tribes and tribal organizations. Community members will be invited as well to determine whether there are regional differences in community priorities for injury prevention.

Health Disparities Research / Activities at CDC

Ana Penman-Aguilar, PhD, MPH
Chief Science Officer and Associate Director for Science
Office of Minority Health and Health Equity
Centers for Disease Control and Prevention

Dr. Penman-Aguilar noted that during the years in which she has served as Associate Director for Science, she has come to understand the way that several programs within NCIPC stand out as shining stars for the rest of the agency in regard to health equity and has a deep respect for the work of the Injury Center. OMHHE envisions a world in which all people have the opportunity to obtain the best health possible. OMHHE's mission is to advance health equity and women's health issues across the nation through CDC's science and programs, and increase CDC's capacity to leverage its diverse workforce and engage stakeholders toward this end. OMHHE has three units: Minority Health and Health Equity Unit, Office of Women's Health, and Diversity Inclusion. Both the Minority Health and Health Equity Unit and the Office of Women's Health are outwardly and inwardly focused. Diversity Inclusion is more internally focused.

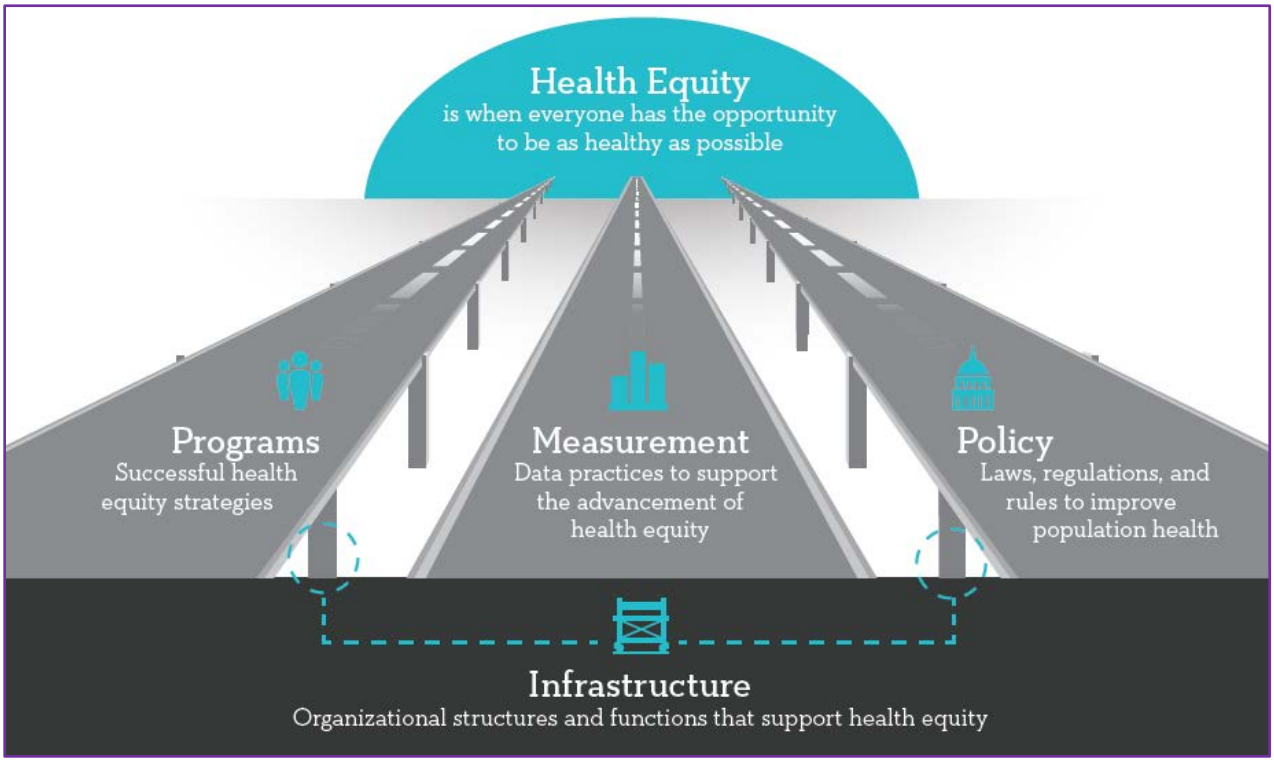
OMHHE plays several leadership roles, such as technical consultant, collaborator/partner, thought leader, catalyst, and convener. The areas in which OMHHE has technical expertise include, among others:

- ❑ Minority health
- ❑ Health equity
- ❑ Program planning and evaluation
- ❑ Workforce diversity pipeline/pathway programs
- ❑ Methods, including epidemiology and statistics
- ❑ Working with diverse domestic and global populations, cultures, and social environments

- ❑ Health communications/talking about health equity
- ❑ Policy analysis, issues management
- ❑ Social determinants of health
- ❑ Women's health
- ❑ Diversity and inclusion

OMHHE seeks to direct all of these capacities toward achieving the best health possible for the nation. OMHHE's priorities are to: 1) Focus on solutions for reducing health disparities, improving women's health, and ensuring a diverse and inclusive public health workforce; 2) Facilitate the implementation of policies and strategies across CDC that promote the elimination of health disparities in communities of highest risk; 3) Advance the science and practice of health equity; and 4) Collaborate with national and global partners to promote the reduction of health inequalities. All of these priorities are interrelated.

OMHHE has developed a set of Operating Principles for health equity which have added value to the work of the agency. These were introduced in a health equity supplement of the *Journal of Public Health Management and Practice (JPHMP)* in 2016. The domains are science, policy, and practice and their required infrastructure. The analogy, as depicted in the following graphic, is that, through undertaking work in each of the 3 lanes, we are on the road to health equity and infrastructure is undergirding the ability to reach our goal:



The operating principles are delineated below for the categories of Infrastructure, Measurement, Essential Program Elements, and Policy:

Operating Principles: Infrastructure
- ❑ Develop/maintain culturally and linguistically competent workforce
- ❑ Develop appropriate data systems
- ❑ Assure accountability at high levels of the organization
- ❑ Provide effective and consistent leadership at high levels of the organization.

Operating Principles: Measurement
- ❑ Identify characteristics of groups of people associated with more/less power and privilege or higher/lower social position
- ❑ Measure differences in health and its determinants associated with these characteristics and assess change over time
- ❑ Assess social and structural determinants of health
- ❑ The rationale for methodological choices made and measures chosen should be made explicit
- ❑ Groups to be compared should be simultaneously classified by multiple social statuses
- ❑ Consider stakeholder communication needs when selecting analytic methods

Operating Principles: Essential Program Elements
- ❑ Consider socio-demographic characteristics
- ❑ Understand evidence base for health disparities and inequities
- ❑ Leverage multi-sectoral collaboration
- ❑ Mobilize community engagement
- ❑ Use clustered interventions, engage with communities
- ❑ Plan and evaluate rigorously

Operating Principles: Policy
- ❑ Maximize existing national policy strategies
- ❑ Use a SDOH framework to analyze problems and generate policy options
- ❑ Develop a Health in All Policies (HiAP) framework
- ❑ Use Health Equity Impact Assessment as a tool to get to HiAP

Dr. Penman-Aguilar focused mostly on the measurement domain, given that this was a BSC meeting. Understanding which groups of people have lower social position in our society (which generally aligns with less power and privilege) is key. The health of these groups points to the health of the nation because the bottom line is that optimal health will never be achieved unless gaps are closed. Social and structural determinants of health are important to monitor, and often times the right level of geography is not considered. In health disparities and social determinants of health work, there are a lot of methodological complexities; one can come to very different conclusions by measuring something on the absolute level (e.g., differences in rates) versus the relative level (e.g., rate ratios). The field has come to understand that values are embedded in methodological choices, so it is very important to be explicit about why one is choosing one measure over another (see, for example, Harper S, King NB, Meersman SC, Reichman ME, Breen N, Lynch J. Implicit value judgments in the measurement of health inequalities. Milbank Q. 2010;88(1):4-29.). OMHHE has fostered an explicit focus on data disaggregation to “get under the hood” of what is going on with diseases and other conditions because not only do elevated health risks of smaller, distinct populations remain hidden when they are lumped into large categories (e.g., combining all Asians) but key subpopulations at the intersections of risk (e.g., Hispanics who have lived in the US longer) also become invisible. The

latter relates to the key concept in health equity and public health in general of "intersectionality". Stakeholder communications are also important to consider, even when selecting analytic methods.

Dr. Penman-Aguilar briefly summarized the other domains of the operating principles (program, policy and infrastructure).

With respect to some of the activities out of their office, OMHHE established the CDC Health Equity Leadership Network (HELN). Each CIO and several divisions have a representative serving on the HELN. The first activity of HELN, in collaboration with NCIPC, was to develop a proposal for a CDC Public Health Grand Rounds (PHGR) on preventing suicide among AI/AN populations. During the PHGR Dr. Alex Crosby presented data and described one of NCIPC's technical packages, which has health equity related aspects. OMHHE Co-leads the nationwide Healthy People 2020 and 2030 Social Determinants of Health Topic Areas. It leads CDC's Language Access Policy; language access is key not only to making programming accessible, but also to science. OMHHE co-leads CDC's cross-cutting Social Determinants of Health efforts. Specifically, a group of cross-cutting offices developed CDC's SDOH website, convenes a series of "Conversations with Authors" journal club style events, and has undertaken a number of activities. OMHHE also leads the Coordinating Council on Women's Health. Values to CIOs include:

- Trainings
  - Cultural humility for deployers
  - Health equity for supervisors
  - Lunch and learns on diversity and inclusion topics
- Workforce Diversity Strategy
  - CDC Undergraduate Public Health Scholars Program
- Leading science
  - CDC reports on Hispanic and African American Health (Vital Signs)
  - Rural health *MMWR* article
  - CDC reports on strategies for reducing health disparities (*MMWR* supplement)
- Technical assistance
  - Women's Health Research and Practice series

With respect to specific OMHHE-NCIPC collaborations, Dr. Penman-Aguilar said it was gratifying to look back over the years and see how the OMHHE and NCIPC have collaborated on a number of efforts, including the following:

- 2019 Public Health Ethics Forum on Ethical Dilemmas in Child and Adolescent Health
- 2019 Public Health Grand Rounds on Preventing Suicidal Behavior in American Indian and Alaska Native Communities: A Health Equity Issue (already mentioned)
- 2018 Congressional Black Caucus Foundation's Annual Legislative Conference panel on African American Health
- *Health Equity Matters* blog on Violence-Related Disparities Experienced by Black Youth and Young Adults: Opportunities for Prevention
- CDC Office of Women's Health Lecture Series: Reducing Sexual and Intimate Partner Violence Against Girls and Women
- CDC Inaugural Diversity and Inclusion Forum
- OMHHE Operating Principles: Policy Domain
- PolCon 2015: Health Equity Track

- ❑ Strategies for Reducing Health Disparities *MMWR* supplement 2016 (preventing violence among high-risk youth and communities)
- ❑ Strategies for Reducing Health Disparities *MMWR* supplement 2014 (tribal motor vehicle injury prevention)
- ❑ Summit to prepare for Strategies for Reducing Health Disparities *MMWR* supplements
- ❑ Articles in 2011 and 2013 CDC Health Disparities and Inequalities Reports (2013 report led by CSELS with technical support from OMHHE)

Discussion Points

Dr. Floyd said that his observation with this is that he has seen in healthcare systems and implementation that they are grappling with their role in this, what resources are available to deal with expensive things such as housing. He sees systems or organizations such as National Committee for Quality Assurance (NCQA) making SDOH and race/ethnicity increasingly key components of their programs. But then again, that adds to the confusion about disparity metrics. He inquired as to what research they are doing to look at best practices at community-levels and in specific populations, and getting those practices out to communities, healthcare systems, and community-based organizations (CBOs) all of which could implement those practices.

Dr. Penman-Aguilar stated that, regarding health care systems grappling with their role, OMHHE is engaged in conversations across the agency to consider how to integrate SDOH into healthcare systems. Regarding the confusion about the role of health disparity metrics, understanding of how SDOH and health disparities relate is absent from a lot of healthcare discussions (if health disparities are the problem and health equity is what we want to achieve, addressing SDOH will help get us there). It is also important to clarify terms, such as what constitutes a social need versus an SDOH. In terms of how this relates to the CDC workforce, OMHHE is trying to socialize these comments and how they interrelate.

In terms of workforce development, **Dr. Houry** indicated NCIPC tries to support and participate in a lot of fellowships and rotating and shadowing programs. Regarding health equity within the hospital systems is the Coordinating Care Plan that Dr. Losby spoke about on the first day. They are doing that in some of the IHS systems and clinics to try to make sure they are inclusive. Jason Hymer is actually an IHS employee who NCIPC is fortunate to have in-house as part of CDC. Holly Billie was previously at CDC and is now at IHS. NCIPC has a very synergistic relationship with IHS. There was a conference in the summer on AI/AN populations and what can be done in terms of injury and violence systematically, which is really helpful. Dr. Dahlberg highlighted some of the research NCIPC is trying to fund at the community-level and around policies to evaluate some of these disparities.

Dr. Cunningham said that one of the things she would ask CDC to think about, which she is asked a lot, regards the histories of inequities and disparities and how they relate to the opioid epidemic, how policies have shaped prescription opioids, lack of treatment of OUD, where treatment occurs, how treatment occurs, and the different types of treatments that are available for different populations so that they can learn and prevent this from happening with the next epidemic. There is a long history of inequity in terms of opioids and OUD.

Dr. Houry said that NCIPC agrees. One of their Grand Round speakers with an anthropology background talked about all of the policies, racial inequities, and how even now there are inequities.

Dr. Crawford said that it occurred to him that they were talking about 2019 and almost 2020. He loves the leadership that is carrying them in that way, but there is a lot of time, content, and funding to make up for. He acknowledged that this is at least a start. The synthesis of literature that was done, which Dr. Lee described, is great but he recommended considering a systematic review. There is a lot more out there. When he has participated in systematic reviews, they did not just review those that made the journals. They acquired dissertations, data that almost reached statistical significance, information from unpublished sources, and many other sources. That was really helpful in terms of informing the heuristic of what they are trying to do. If they could figure it out, it would already have happened. Therefore, he recommended a broader systematic review for the background information. He loved Dr. Dahlberg's presentation, but did not hear much on policing practices, access to health services health care or behavioral healthcare, dentistry, OB/GYN, etcetera. Those are all protective factors in terms of bigger picture and how that impacts violence. This is often not looked at because there is not a direct line effect. Dr. Penman-Aguilar mentioned the notion of historical trauma. His area terms this as epigenetic transgenerational transmission of trauma. A lot of research was done on holocaust survivors and what happened in subsequent generations. A lot of it was thought to be related to heredity, but a lot of that happens within the generation so there is a shift in the DNA as a result of different generations having gone through what they did. That is an important aspect to consider in terms of violence and how to address the structural aspects in society around violence. He was glad she said "racism." A lot of folks do not like to call it out or talk about race, but the reality is that it is an important aspect to consider in terms of balance and how to address the structural aspects of racism. While he did not believe that many of the people he has met in his lifetime would be called "racists," unless something is done to change the structures that are associated, then many if not all of them are participating in it. With structural racism, one is either part of the problem or part of the solution. There is no neutral area in that.

Dr. Dahlberg shared that she had highlighted some examples from their technical packages, but that was by no means all of the work they are doing. They have published papers on policing using NVDRS data looking at legal intervention on deaths and police use of force. They have published papers that have examined behavioral healthcare and continuity of care in terms of health systems. Some of that work is reflected in the suicide technical package. She encouraged everyone to look through those more deeply, because she just provided a brief snapshot. She observed that Dr. Crawford's points were well-taken and expressed gratitude for them.

Dr. Penman-Aguilar expressed appreciation to Dr. Crawford for the calling out of the time element in terms of historical trauma and the progression that occurs biologically as gene expression is transformed over time. Health disparities have likely been around for centuries and the government called them out in 1985 with the *Heckler Report.* The energy and creativity of all needs to be brought to bear to remedy the situation. As public health expands its understanding of how disparities come into being (e.g., through considering SDOH and epigenetics), it will have new opportunities for success.

Dr. Whitaker noted that he has been the Editor for the *Journal of Child Maltreatment* for the past several years could think of only a handful of studies that have looked at these broad societal factors. He observed that CDC is finding nice things and efforts that take broad political support, so he wondered what the agency's role is in moving these kinds of things more downstream given CDC's position in the Executive Branch. He encouraged NCIPC also to think about implementation science and how policies are implemented. There certainly have been a number of great large policy efforts over the last many years, such as the Maternal, Infant, and Early Childhood Home Visiting (MIECHV) program. There were 2 randomized controlled trials

(RCTs) of these hundreds of millions of dollars that went to these home visiting programs that depending upon how the findings are spun, not many positive findings were found. Implementation issues certainly could be causing a lack of findings, and those need to be attended to. He also inquired as to how the BSC can help in that regard.

Dr. Dahlberg noted that some of these policies do have more bipartisan support across many states, which hopefully will continue. One role of public health is not so much to advocate for a particular law or policy, but to educate on the long- and short-term benefits. NCIPC has looked at all of these in relation to violence, but they have implications across all health outcomes, including opioid overdose. She agreed about implementation science. Over the last several years, she has been energized by the fact that they have built up a strong Programmatic Implementation Branch with a lot of great skill sets who are doing more of that work on the ground. They are building that into NCIPC's programmatic efforts with the RPE, DELTA, and other work. This is on the radar and they are doing more in that space. VetoViolence® is a separate website that has capacity and tools to help communities do that work on the ground.

Dr. Kaplan pointed out that when they talk about violence, they are throwing in a lot of things. For a long time, he has thought that there is gun violence and then there is violence. Gun violence can be addressed with a harm reduction approach. The gun violence problem can be tamped down. Many states have passed very restrictive gun laws and as a result have lowered the rate of gun violence. What guns basically do is lethalize violence. There is a tendency to disaggregate the problem and introduce some complexity into analyses. He thought they could first deal with the issue of gun violence, which is pretty straightforward if the political will is there/ It is not there now. There are many barriers (constitutional, cultural, et cetera). This issue could probably be dealt with in two steps: 1) approach gun violence from a harm reduction perspective; and 2) address the propensity toward violent behavior as a human nature problem. He did not think they could really deal with this unless they address the gun issue, which is the "elephant in the room." He also expressed concern about the overmedicalization of the SDOH. He just finished teaching a graduate course in health policy where he started out the course with a pie chart showing that healthcare services may account for, at best, 30% of population health. The largest share is social and economic, which is where he thinks they need to be spending money in terms of prevention. He had the pleasure of being invited to the University of Oslo this past summer. He lectured there and spent time routing Norway and Oslo and still thinks there are many examples from abroad the US can adopt, particularly those focused on early childhood. He really appreciated the long reach of childhood. More resources need to be spent on early childhood intervention. The Scandinavians, the Nordic Mystique, have done wonders in that regard. They need to spend more time talking to them and learning from them about what they have done that has worked so well.

Dr. Frye emphasized that there is non-historical trauma that is known to be occurring. They often frame things in terms of historical trauma, but there are current violation of treaties, oil spills, contamination of water, et cetera. That is current historical trauma that is happening right now to AI/AN and people dying because of it, either in defense of their rights or as a result of these things. It is known that these flow from the general prioritization of profit over people, which is what unites the opioid epidemic as well as some of the structural determinants of ill health among Native American populations.

Dr. Liller agreed with the comment about the systemic review made by Dr. Crawford. If there is enough evidence, even a meta-analysis might be a good way to go. Regarding Dr. Dahlberg's response to a question about policing about using NVDRS data, she thought they needed to expand beyond that. Dr. Liller is the PI for the State of Florida for NVDRS. The issue with legal

intervention that she has heard from law enforcement, is that those data will not be available for quite a long time. When there is an incident, there are a lot of legal battles. When dealing with law enforcement, they will not release any data in an open case. As a case is being litigated, they get nothing. For legal intervention for policing, NCIPC should not count on data from NVDRS. In Florida, she does not think they will have that for years in some cases.

Dr. Hedegaard indicated that data is an area of major interest for her. There was discussion regarding misclassification, particularly among the AI/AN population. She knows that CDC and NCIPC are doing a tremendous amount of work in building infrastructure around data collection and improving the quality of data that gets collected. She pointed out that if information from any efforts that are done to improve data collection and identification of minority populations does not get transferred to the national Vital Statistics system, it might be great locally but does not help how data are used at the national level. She emphasized the importance of making an effort to get this information into the Vital Statistics registry as well, because that is where change will happen in terms of better race/ethnicity information.

Dr. Hedlund pointed out that the things cited for alcohol in terms of community risks (beverage size, pricing, hours and days of sale, location, density) are precisely what the impaired driving area has been involved in for the past 30 plus years. So, there is a great connection NCIPC could make to pull those two communities together.

Dr. Franklin noticed Dr. Penman-Aguilar's slide 11 talks about Operating Principles specific to measurement. The first bullet reads, "Identify characteristics of groups of people associated with more or less power and privilege and higher or lower social position." He wondered whether any consideration had been given to how to measure that or indicators of that and, if so, whether they plan to make recommendations that they should be permanent or ongoing. He also wondered whether, if they do make recommendations on these indicators, they will give consideration to different ways to intervene.

Dr. Penman-Aguilar replied that in terms of how it is assessed, what they have written in their publications is that credible historical and news documents can be analyzed to understand which groups are experiencing more or less power and privilege and higher or lower social position. There is a set of demographic categorizations that they consider extremely important for this: race and ethnicity, sex, sexual orientation and gender identity, disability status, nativity, among others. Whether these categorizations are fixed is an important question because there is often an implicit assumption that the groups that experience health disparities are somehow fixed. But, history continues to unfold and so this is not static. Also, the recognition of what groups are experiencing is always changing.

Dr. Franklin asked how OMHHE would parse out the idea of population composition versus composition context to try to measure and establish associations for, in this case, violent outcomes. That is what he thinks about in terms of aggregating race, gender, sexual orientation and how to pull apart the context in which those populations exist.

Dr. Penman-Aguilar indicated that OMHHE is doing a lot of thinking and writing on the concept of place. In fact, the Healthy People 2020 framework is a place-based framework. They understand that demographics do not confer risk in and of themselves. Actually, they do not drive risk. The problem is how structures have responded to different demographic categories. Demographic categories are never the cause. It is always this interaction between place, whether it is place at an entire societal level and how people are treated differently as a society,

or in a small geography. Right now, geography is the best tool, but it is still limited because someone can be operating in the same place and have different dynamics happening.

Dr. Dahlberg added that they also are looking at income and equality, racial segregation, gender, race, wage inequality. There are some research Think Tanks that gather local and state data that they find useful that look at other things such as graduation rates. There are other contextual things that are not just group, but within group gaps and disparities and how to close that.

Dr. Franklin asked whether any consideration had been given to the Index of Concentration at the Extremes (ICE) Indicators, which get at poverty.

Public Comment Session

Dr. William (Bill) Keaton
Keaton Educational Services, LLC

Thank you. I'm Bill Keaton. I'm a retired physician, anesthesiologist, and pain management specialist. Once we started using opioids on patients who failed all other treatment options, it was very gratifying to witness the significant pain relief as well as much improved quality of life in many of these patients. It has also been very heartbreaking for me to see how these compliant patients have had to turn to a life of constant, uncontrolled pain because of the guidelines written by a committee that has never actually seen them that has decided they needed to be treated with a one-size-fits-all maximum dosage of their pain medications. I don't think any of us would treat Twiggy and Andre the Giant with the same maximum dose of any medication. While 90 milligrams of morphine equivalent would most likely put me and a lot of people in this room in a coma, for many patients in constant uncontrolled pain, that dose is totally inadequate. They claim it is like taking baby aspirin. I want to applaud you on all of the efforts that I have heard you discuss today and yesterday. It's just incredible what you are doing and I very much appreciate all of the effort that has gone into this, especially with regard to better treatment options, better prevention options, and so forth. But, I implore you to please let the patients' physicians treat them according to their needs rather than be compelled to follow some guidelines that may be totally inappropriate to the patient. I appreciate you letting me share my viewpoints. I would also like to point out that I think one problem that anybody that treats patients with opioids has is that patients and their families need to be better educated about these potentially very dangerous medications. I have developed a video program that addresses this need. It's comprehensive, it's easy to understand for the person, it's very inexpensive, and it does not require any of the physician office staffs' time. I'll be glad to share this with any of you that are interested at no charge to you.

Concerned Former Nurse
Chronic Pain Patient

Hi. I'm a concerned nurse. I would like to say everyone appreciates the CDC letter this past April in the *JAMA* paper, which both covers tapering and misinterpretation of the guidelines. As a former RN and concerned chronic pain patient myself, yes slow tapering is very important to those receiving chronic opioid therapy. But what is missing in the current guideline language and in the update discussion is that stable and functioning patients should not be tapered—period. Forcefully removing these patients' quality of life negatively affects not only them, but their children, their family, and their community as a whole. This is causing a national pain care crisis, leaving most of us suffering with pain sicker and less healthy, not more, and dying all for

only a 1% to 8% chance of addiction. These are our veterans and our cancer patients who are suffering from diseases and injuries, and chronic pain patients. These are not the population taking the illegally manufactured fentanyl, heroin, and street drugs that are fueling the overdose opioid crisis, yet they continue to be targeted. There really isn't a big difference between untreated and poorly, undertreated pain. This has been my personal and professional experience. Both cause a severe decrease in functioning, causing once stable and independent patients to become non-functioning and dependent and possibly unstable to the degree of suicide. This is due to severe debilitating pain. I think the suicides are being blamed more on the tapering process than the actual pain. The forced taper, whether slow or fast, still has the same result—no or fewer pain medication, which leads to the agonizing tortuous pain that leads to suicidal ideation and actual death. Again, I stress, stable and functioning patients should not be force-tapered. Also, we need pain management, pain advocates, and actual pain patients on opioid pain medications on the next working group and included in the current CDC group. Thank you very much for this time to comment.

Dale [No last name stated]
Chronic Pain Patient

I wanted to comment that the 2016 guidelines have had an adverse impact on chronic pain patients. I am a chronic pain patient. I was functioning. I was working. I lived a normal life. I participated in community and many volunteer efforts. I am reaching the point where I cannot work. My doctor is scared to treat. I just want you guys to know that there are real people out here. We are just like you. We didn't ask for these issues. I didn't ask for scoliosis. I didn't ask for the herniated disks. It's happening. It's real. I just want to be able to participate like everyone else with some quality of life. I don't expect to be pain free. I just want to be functional at life. Just remember, we're real people. We're just like you. Thank you.

Tom Hayashi
Wife's Caregiver

I'm a caregiver for my better half who has been taking opioid pain medication since the late 70s. At this time, this environment is the worse it's ever been. She is pretty much mostly bed-ridden all of the time now and she gets extremely fatigued just getting up to go to the kitchen. Really, the quality of life is very low. She was tapered very severely starting last October. We're in California. It seems like this is a problem with government, the legislature, and their reaction or non-reaction to the DEA and the state medical board. I would just wonder if it would be helpful for the CDC and other agencies to really stress to the state legislators and people in charge of the health of whatever state that they really need to do something. They seem to have a very casual approach to a situation that requires more of a triage mentality like this is a 10-alarm fire and should be all hands on deck. There's far too many people suffering, but I think the real sticking point is the state legislatures. They certainly don't listen to people like me, but if you guys said something to them to make a public statement to somehow come up against the tampering that the DEA is doing that is scaring all of the doctors out of their practices and from prescribing, perhaps maybe some public awareness would help the states and medical boards to get the DEA off the doctors' backs. But something has to be done a year ago—not next year or two years from now, but now, immediately. Thank you.

Sara Ann Joehnk
Disability Integration Specialist
Arizona Statewide Independent Living Counsel

Hello. This is Sara Ann Joehnk. I'm with the Arizona Statewide Independent Living Council (AZSILC). I just wanted to comment that I work on classes that teach individuals who have disabilities about emergency preparedness. An ongoing problem that we've encountered is that people on opioid pain medication are unable to stockpile 7 days' worth of supplies. Due to restrictions, they can't transfer medications. They are also unable to have doctors call in their prescriptions. I'm very concerned that if there is an emergency that doesn't require a federal declaration of emergency, like when Arizona has wildfires and snowstorms, many things would cause you to reach your local pharmacy and get your prescriptions as usual. You would then be unable to treat your chronic pain and in addition, would have severe withdrawal. I just wanted to encourage CDC and the federal government to address the ability to stockpile a small amount of medication to handle emergency situations. Thank you.

Others wishing to submit written comments to be included with the minutes of this meeting were reminded to do so before close of business on Friday, December 6, 2019 to ncipcbsc@cdc.gov.

Announcements from BSC Members and *Ex Officios*

Dr. Hedlund announced that a paper was published 2 week ago on belt use in the rear seats, which is still 15 percentage points lower than front seats. A total of 803 unrestrained rear seat adult occupants were killed in 2018. At least half of them would be alive if they had their belts on. In addition, 20 states still have no belt laws.

Dr. Neeraj Gandotra, the new Chief Medical Officer at SAMHSA, thanked NICPC for the invitation. He commended the work and research directions. SAMHA is very much interested in specific areas in terms of the tools that will be available with regard to the workforce. It is known that $1.6 trillion are lost due to the opioid epidemic. A couple of questions arose when he was listening to the patients because he is an addiction psychiatrist by training. He worked at Johns Hopkins for over a decade treating individuals with OUD, and in particular running the Center for Addiction and Pregnancy, so he has seen a lot of the impact of the opioid epidemic and healthcare disparities. They all felt the pain from those individuals who called in. Certainly, they can endorse the human connection. In their charge as providers, they are supposed to make lives better. What they highlighted was an important subgroup, which was an obvious group, that those with chronic pain who developed opioid dependence do not necessarily develop SUD. The approaches to these guidelines need to be mindful and nuanced, but there are going to be concrete interpretations that need to be considered when these guidelines are developed. SAMHSA is eager and willing to contribute in that regard. Certainly, it is going to take collaboration with the payers, health systems, experts, and the primary care providers who are actually going to be delivering the care. Dr. Gandotra highlighted that of all of the individuals with OUD, only about 13% actually receive care in specialty care clinics. Thus, their primary care colleagues are going to be bearing the brunt of this. Specifically, as far as the tapering guidelines being interpreted as regulations, they already heard from a few individuals that these are guidelines. They are not regulations. But, they do carry weight and the weight has to be counterbalanced with the patient approach. Thoughtful, mindful tapers take time. They also can think of their CMS colleagues and perhaps even a recommendation for CPT codes specifically for tapers to allocate more time for those visits. Asking a primary care doctor to do screening and an intervention that may take 40 minutes, even if they are getting paid something, probably is going to disrupt their daily schedule and lead to all sorts of patient dissatisfaction downstream. SAMHSA endorses expanding resources for consultation and experts with increased training, and would be happy to provide assistance and collaboration with regard to

that. Polypharmacy and overdose medication resources were mentioned. It is not just going to be the answer of naloxone, safe storage, and PDMPs. Their anesthesiologist colleague commented about patient education, contracts with family members, and collaboration with community. All of those individuals need to be at the table as well. He was glad to hear toward the end about the alcohol use disorder. That is the invisible "elephant in the room." Prior to his job with SAMHSA, he was Chief Medical Officer for the Addiction Treatment Network. Over 50% of their admissions were due to alcohol detox, so it is important to understand not just policies for social protection but innovative ways to influence behavior. Psychiatrists are in the business of changing behavior, but Dr. Gandotra said he realized a long time ago that he cannot make anybody do anything. He cannot make his children pick things up off of the floor, and he certainly cannot help anyone unless they are willing at least to acknowledge that there is an issue. Programs have to engage stakeholders, the patients in particular. If he had to personify SUD, if he had to personify it, SUD lives in the dark. No one says, "I'm going to lose my home, my social standing, my freedom, my financial security." It starts with, "I want to feel better. I'll lose a little sleep tonight. I'll tighten my budget." However, lines get crossed and people make decisions that are contrary to their best interests and contrary to their overall survival. Understanding that philosophically may be another way to approach this. They have to change this behavior, and they have to understand what is motivating and driving that decision-making. That is where research within healthcare disparities is probably going to have the bulk of the work.

Agenda-Setting / Topics of Interest

- Consider creation of a workgroup on structural violence, which would look at upstream structural factors in federal, state, and local policies specifically that are giving rise to these outcomes and actually create ACEs, injury, and trauma:
  - Three areas need to be addressed: Suicide, Opioids, ACEs. Perhaps there need to be 3 workgroups.
  - Discuss the recent piece in *JAMA* by Wolf on the decrease in life expectancy, which is a major problem with major SDOH (income inequality, wealth inequality, rise in poverty, etcetera).
  - Perhaps a primer should be developed by NCIPC to explain the merits, strengths, pros, and cons of establishing a formal workgroup versus perhaps having another type of forum for this type of discussion. When NCIPC enters into a formal workgroup, a host of rules accompany that.
- Related to the opioid guideline specifically, further address health equity:
  - There is not a lot of data, but there are frameworks for thinking about equity in guideline development that the OWG should think about.
  - Think about trying to measure what has happened. It is known that disparities occur in pain care. Knowing more about what inequities have occurred as a result of the 2016 guideline would be helpful.
  - Work an equity lens specifically into the OWG guideline revision/development process.

- Provide the descriptive manuscript and a presentation of what transpired with the previous research priorities, which will help inform some of the updates in the revised guideline.

- Discuss ideas pertaining to review of research and other projects:

  - The BSC or another qualified cultural/structural competence group could do an analysis of NOFOs to assess whether they are going to elicit structurally competent scientists to enact this work and make sure that there is implicit and explicit bias training for all reviewers.

  - There is an accumulating body of empirical evidence that there is implicit bias occurring in reviews of manuscripts and scientific reviews that contributes to some extent to the "leaky pipeline" for scientists of color at the highest level.

  - Analyze funding at the Injury Center that is related specifically to Dr. Lee's workgroup. Those data are there. What has happened to them?

  - Write NOFOs that will make it clear what they want to happen in a project. It needs to be structurally competent, and then they will get the people who are qualified to do it, and those are going to be scientists of color and scientists from less powerful groups and that is going to guarantee that it will be higher quality.

- Provide a presentation on CDC's updated graduated response framework that delineates the program-, to center-, to agency-level response criteria and what resources go into play for that. Include information about:

  - The data that drive that decision-making process

  - The population-level impacts of gun violence versus lung injury due to vaping, which would be relevant to that conversation

- Engage in a discussion about the balance of funding for the ICRCs:

  - Consider how to restructure the ICRCs so that the country is better represented. If CDC cannot do this by regions, at least have applicants collaborate with one or more other states that are not funded.

  - Assess the quality of existing ICRCs in terms of their impact in their geographic areas and whether partnerships with an area elsewhere in the country may be practical and also have impact.

  - Discuss the potential to bring back funding for Development ICRCs.

- Provide a more detailed presentation from the Program Implementation Branch mentioned by Dr. Dahlberg in terms of their activities.

- Provide in the Director's Update or some other way, even if they are not motions, a laundry list of recommendations and some way for the BSC to know what the follow-up was.

Motion / Vote

Dr. Porucznik made a motion that based on the discussions of the BSC and the public comments, CDC should consider a public outreach campaign regarding the appropriate use of the current guidelines, the plan for the guidelines, and the new OWG to be undertaken as soon as practical. **Dr. Hedlund** seconded the motion. The motion carried unanimously with no abstentions.

Closing Remarks / Adjourn

Dr. Greenspan indicated that NICPC is planning a BSC teleconference in the spring, probably in April or early May, and Mrs. Lindley will be reaching out to BSC members about that. Potential topics planned for that call include: An update on the progress and process in terms of the OWG, continuation on the conversation on health equity, an update on the analyses of the extramural data, and agenda-setting for future meetings. She emphasized that a number of other topics were identified in previous meeting, some of which NCIPC has taken up and some that are pending. Therefore, she would like to revisit those and spend some time discussing how to prioritize all of the topics of interest. It is possible that two separate calls will be needed, given the amount of information to be addressed, one would focus specifically on following up on the OWG and the second could focus other topics of interest. Dr. Greenspan thanked the members for their participant and all of the NCIPC staff members for their efforts in bringing this meeting to fruition.

Dr. Frye said that Dr. Gandotra's comments reminded her of the Warsan Shire poem, "No one leaves home unless home is the mouth of a shark." She thanked him for his comments, which were beautifully put. On the other end is focusing on the "mouth of the shark," which is the environment. She thanked everyone for their incredible participation, emphasizing that it was an honor and a pleasure. She also thanked everyone from NICPC for their fantastic work. She thought everyone would agree that the Injury Center is doing amazing things. It was wonderful to hear about all NCIPC's leadership in the areas of health equity, diversity equity, and inclusion. She stressed how proud she was to be there and to be part of this.

With no additional announcements, further business raised, or questions/comments posed, **Dr. Frye** officially adjourned the thirty-second meeting of the NCIPC BSC at 11:40 AM.

Certification

I hereby certify that to the best of my knowledge, the foregoing minutes of the December 4-5, 2019 NCIPC BSC meeting are accurate and complete.

01/15/2020

Date

Victoria Frye, DrPh, MPH
Chairperson, NCIPC BSC
Associate Medical Professor
Department of Community Health and Social Medicine
City University of New York School of Medicine
City College of New York

Public Comment Session Received by December 6, 2019

Appendix A: Meeting Attendance

Donna H. Barnes, Ph.D.
Associate Professor
Department of Psychiatry and Behavior Sciences
Howard University

Roger Chou, M.D.
Professor of Medicine
Oregon Health and Science University
Departments of Medicine, Medical Informatics and Clinical Epidemiology

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

Chinazo Cunningham, M.D., M.S.
Division of General Internal Medicine
Albert Einstein College of Medicine
Montefiore Medical Center

Frank Floyd, M.D., F.A.C.P.
Medical Director
United Health Service Medical Group

Frank A. Franklin, II, Ph.D., J.D., M.P.H.
Principal Epidemiologist and Director
Community Epidemiology Services
Multnomah County Health Department

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

Elizabeth Habermann, Ph..D
Professor
Department of Health Services Research
Mayo Clinic College of Medicine and Science

James Hedlund, Ph.D.
Principal
Highway Safety North

Todd Herrenkohl, Ph.D.
Professor and Co-Director 3DL Partnership
School of Social Work
University of Washington

Mark S. Kaplan, Dr.P.H.
Professor of Social Welfare
Department of Social Welfare
Luskin School of Public Affairs

Karen D. Liller, Ph.D.
Professor
Department of Community and Family Health
University of South Florida,
College of Public Health

Christina A. Porucznik, Ph.D., MSPH
Associate Professor
Department of Family and Preventive Medicine
University of Utah

David C. Schwebel, Ph.D.
Associate Dean for Research in the Sciences
University of Alabama at Birmingham

Daniel J. Whitaker, Ph.D.
Professor, Director
Health Promotion & Behavior
Georgia State University

Ex-Officio

Melissa Brodowski, Ph.D., M.S.W., M.P.H.
Senior Policy Analyst
Administration for Children and Families

Lore Jackson Lee, M.P.H.
Associate Director for Policy, Planning & Evaluation
National Institute for Occupational Safety and Health
Centers for Disease Control and Prevention

Mindy Chai, J.D., Ph.D.
Health Science Policy Analyst
Science Policy and Evaluation Branch
National Institutes of Health
National Institute of Mental Health

Wilson Compton, M.D., M.P.H.
Deputy Director
National Institute on Drug Abuse
National Institutes of Health

Holly Hedegaard, M.D., M.S.P.H.
Senior Service Fellow
National Center for Health Statistics
Centers for Disease Control and Prevention

Lyndon Joseph, Ph.D.
Health Scientist Administrator
National Institute on Aging
National Institutes of Health

Valerie Maholmes, Ph.D., CAS
Chief, Pediatric Trauma and Critical Illness Branch
National Institutes on Health
Eunice Kennedy Shiver National Institute of Child Health and Human Development

Constantinos Miskis, J.D.
Bi-Regional Administrator
Administration on Community Living,
Administration on Aging

RADM Kelly Taylor, M.P.H.
Director, Environmental Health and Injury Prevention
Indian Health Service

Captain Josefine Haynes-Battle, MSV, BSN, RN
CAPT, United State Public Heath Service
Director, SAMHSA/CSAP/Division of System Development

CDC Attendees

Mick Ballesteros Ph.D.
Brad Bartholow, Ph.D.
Grant Baldwin, Ph.D.
Matt Breiding, Ph.D.
Victor Cabada, M.P.H.
Casey Chosewood, Ph.D.
Jieru Chen, Ph.D.
Melvin Crum, Ph.D.
Linda Dahlberg, Ph.D.
Captain Robin Curtis, Ph.D.
Rosalyn Lee, Ph.D.
Lara DePadilla, Ph.D.
Deborah Dowell, M.D., M.P.H.
Leroy Frazier, M.S.P.H.
Arlene Greenspan, Dr.P.H., M.P.H.
Jeffery Gordon, Ph.D.
Jeffrey Herbst, B.A., Ph.D.

Dan Holcomb, B.S.
Debra Houry, M.D., M.P.H
Jason Hymer, M.P.H.
Chris Jones, Ph.D.
Tonia Lindley
Moises (Chris) Langub, Ph.D.
Sue Neurath, Ph.D.
Ana Penman-Aguilar, Ph.D.
Erin Parker, Ph.D.
Amy Peeples, M.P.H.
Erin Sauber-Schatz, M.P.H., Ph.D.
Tom Simon, Ph.D.
Deb Stone, Ph.D.
Duane Stone, C.P.A., C.G.F.M.
Mildred Williams-Johnson, Ph.D., D.A.B.T.

Public Attendees
Carl Beck
On- Par Productions

Samual Botta
Ashlyn Management

Neeraj Gandotra, MD
Chief Medical Officer
SAMHSA

Natlaie Green
On-Par Productions

Antwan Jones
On-Par Productions

Kathryn Oliver

Sheri Owen
C.O.R.E. Change Opiate Regulations Emergency TM

Amy Partridge
National Patient Advocate

Bradley Percell
Patient

Chelsea Perez
Disabled Veteran

Shirley Pina
Alliance for Intractable Pain

Duane Pool

Pain Advocacy Coalition

Lori Ravelli

Carrie Richmond
DPPR

Dana Runge
C50 State Pain Advocacy

Trina Saice
Chronic Pain Patient

Fay Salby
Emory

John Sandherr
Pain Patient

Sam Shahid
American College of Emergency Physicians

Rebecca Sidden
Alliance for the Treatment of Intractable Pain

Leah Sies
Advocate

Shaina Smith
U.S. Pain Foundation

Don Teater
Teater Health Solutions

Howard Techau

Theresa Toigo
FDA

Jenna Ventresca
American Pharmacists Association

Daisy Vonderheide
Don't' Push Pain

Nancy Wheeler
Don't Punish Pain

Walter Walters
Volunteers4Humanity

Stephanie Wallace
Cambridge Communications

Mary Wille
Chronic physical pain due to medical errors group

Deloris Wilson Chronic Pain

Henry Yennie

Appendix B: Acronyms Used in this Document

Acronym	Expansion
AAIP	Association of American Indian Physicians
ACEs	Adverse Childhood Experiences
ACEP	American College of Emergency Physicians
ADA	Americans with Disabilities Act
ADS	Associate Director for Science
AHRQ	Agency for Healthcare Research and Quality
AI	Artificial Intelligence
AI/AN	American Indians and Alaska Natives
ASCO	American Society of Clinical Oncology
ASH	American Society of Hematology
ASTHO	Association of State and Territorial Health Officials
ATIP	Alliance for the Treatment of Intractable Pain
ATSDR	Agency for Toxic Substances and Disease Registry
AZSILC	Arizona Statewide Independent Living Council
BAL	Bronchoalveolar Lavage
BHCC	Behavioral Health Coordinating Committee
BLS	Bureau of Labor Statistics
BSC	Board of Scientific Counselors
CAN	Child Abuse and Neglect
CBO	Community-Based Organization
CDC	Centers for Disease Control and Prevention
CIAAG	Chronic Illness Advocacy & Awareness Group
CIOs	Centers, Institutes, and Offices
CM	Child Maltreatment
CMC	Carolinas Medical Center
CMS	Centers for Medicare & Medicaid Services
COCA	Clinician Outreach and Communication Activity
COD	Cause of Death
CoP	Communities of Practice
Core SVIPP	Core State Violence and Injury Prevention Program
CPTED	Crime Prevention Through Environmental Design
CPWR	Center to Protect Workers' Rights
CR	Continuing Resolution
CSTE	Council for State and Territorial Epidemiologists
CTC	Child Tax Credits
CTE	Chronic Traumatic Encephalopathy
CTS	Carpal Tunnel Syndrome
DC	District of Columbia
DEA	Drug Enforcement Agency
DELTA	Domestic Violence Prevention Enhancement and Leadership Through Alliances
DFO	Designated Federal Official
DIP	Division of Injury Prevention
DOP	Division of Overdose Prevention
DPT	Doctorate of Physical Therapy

Acronym	Expansion
DVP	Division of Violence Prevention
ED	Emergency Department
EHR	Electronic Health Records
EIC or EITC	Earned Income Tax Credits
EMS	Emergency Medical Services
EOC	Emergency Operations Center
ERCs	Education and Research Centers
ERPO	Extramural Research Program Office
EtR	Evidence to Recommendations
EVALI	E-cigarette, or Vaping, Product Use-Associated Lung Injury
FACA	Federal Advisory Committee Act
FDA	Food and Drug Administration
FFFIPP	Fire Fighter Fatality Investigation and Prevention Program
FY	Fiscal Year
Georgia Tech	Georgia Institute of Technology
GI	Gastrointestinal
GRADE	Grading of Recommendation Assessment, Development and Evaluation
HP3	Health Professionals for Patients in Pain
HCP	Healthcare Providers
HELN	Health Equity Leadership Network
HHE	Health Hazard Evaluation
HHS	(United States Department of) Health and Human Services
HiAP	Health in All Policies
HIDTA	High Intensity Drug Trafficking Areas
HR	Human Resources
HRSA	Health Resources and Services Administration
ICD	International Classification of Diseases
ICRC	Injury Control Research Center
ICS	Incident Command System
IDPB	Infectious Disease Pathology Branch
IHS	Indian Health Service
IPV	Intimate Partner Violence
IRGB	Information Resources Governance Board
IT	Information Technology
ITDG	Information Technology and Data Governance
IVP	Injury and Violence Prevention
JPHMP	Journal of Public Health Management and Practice
LRN	Laboratory Response Network
MAT	Medication-Assisted Treatment
MDPA	Massachusetts Department of Public Health
ME	Medical Examiner
MIECHV	The Maternal, Infant, and Early Childhood Home Visiting Program
ML	Machine Learning
MME	Morphine Milligram Equivalent
MMWR	*Morbidity and Mortality Weekly Report*
NACCHO	National Association of County and City Health Officials
NIHB	National Indian Health Board
NAM	National Academy of Medicine

Acronym	Expansion
NCCDPHP	National Center for Chronic Disease Prevention and Health Promotion
NCCN®	National Comprehensive Cancer Network®
NCEH	National Center for Environmental Health
NCHS	National Center for Health Statistic
NCIPC	National Center for Injury Prevention and Control
NCQA	National Committee for Quality Assurance
NCSL	National Conference of State Legislators
NDEWS	National Drug Early Warning System
NEJM	*New England Journal of Medicine*
NHTSA	National Highway Traffic Safety Administration
NIDA	National Institute on Drug Abuse
NIH	National Institutes for Health
NIOSH	National Institute for Occupational Safety and Health
NLP	Natural Language Processing
NNPHI	National Network of Public Health Institutes
NOFO	Notice of Funding Opportunities
NSC	National Safety Council
NSCH	National Survey of Children's Health
NSDUH	National Survey on Drug Use and Health
NVDRS	National Violent Death Reporting System
OD2A	Overdose Data to Action
OFR	Office of Financial Resources
OGS	Office of Grant Services
OI	Office of Informatics
OMB	Office of Management and Budget
OMMHE	Office of Minority Health and Health Equity
ONC	Office of the National Coordinator for Health Information Technology
OPWG	Opioid Prescribing Work Group
ORCU	Opioid Response Coordinating Unit
OS	Office of Science
OSH	Office on Smoking and Health
OSHA	Occupational Safety and Health Administration
OSI	Office of Strategy and Innovation
Opioid STR	State Targeted Response to the Opioid Crisis Grants
OUD	Opioid Use Disorder
OWG	Opioid Workgroup
PDMP	Prescription Drug Monitoring Program
PHDMI	Public Health Data Modernization Initiative
PI	Principal Investigators
PPE	Personal Protective Equipment
PR	Puerto Rico
RCT	Randomized Controlled Trial
RFA	Request for Applications
RPE	Rape Prevention and Education Program
RWJF	Robert Wood Johnson Foundation
SAMHSA	Substance Abuse and Mental Health Services Administration
SAVD-SS	School-Associated Violent Death Surveillance System
SBI	Strategic Business Initiatives Unit

Acronym	Expansion
SBIR	Small Business Innovation Research
SCCAHS	Southeastern Coastal Center for Agricultural Health and Safety
SPH	Schools of Public Health
SDOH	Social Determinant of Health
SME	Subject Matter Expert
SOPs	Standard Operating Procedures
SOR	State Opioid Response
SRO	Scientific Review Official
SUD	Substance Use Disorder
SUDORS	State Unintentional Drug Overdose Reporting System
SV	Sexual Violence
TA	Technical Assistance
TBI	Traumatic Brain Injury
TCHD	Tri-County Health Department
TEC	Tribal Epidemiology Centers
TECPHI	Tribal Epidemiology Center Public Health Infrastructure
TFAH	Trust for America's Health
TDV	Teen Dating Violence
THC	Tetrahydrocannabinol
UK	United Kingdom
US	United States
USPHS	United States Public Health Service
VACS	Violence Against Children Surveys
VADM	Vice Admiral
VSOs	Veteran-Serving Organizations
WCRI	Workers' Compensation Research Institute
WG	Working Group
WHO	World Health Organization
WISQARS™	Web-based Injury Statistics Query and Reporting System
WTCHP	World Trade Center Health Program
YV	Youth Violence
YVPC	Youth Violence Prevention Centers