

**NCIPC Board of Scientific Counselors
Open to the Public
April 11, 2022**

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

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

Thirty-Eighth Meeting
April 11, 2022

Virtual / Zoom Meeting
Open to the Public

Summary Proceedings

The Thirty-Eighth meeting of the National Center for Injury Prevention and Control (NCIPC; Injury Center) Board of Scientific Counselors (BSC) was convened on Monday, April 11, 2022 via Zoom and teleconference. The BSC met in open session in accordance with the Privacy Act and the Federal Advisory Committee Act (FACA). NCIPC BSC Co-Chair, Dr. Amy Bonomi, presided.

Call to Order / Roll Call / Meeting Process / Welcome & Introductions

Call to Order

**Amy Bonomi, PhD, MPH
Co-Chair, NCIPC BSC
Faculty Affiliate,
Harborview Injury Prevention and Research Center, University of Washington
Founder, Social Justice Associates
Broomfield, Colorado**

Dr. Bonomi officially called to order the Thirty-Eighth meeting of the NCIPC BSC at 10:00 AM Eastern Time (ET) on Monday, April 11, 2022.

Roll Call / Meeting Process

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

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 meeting. No conflicts of interest (COI) were declared. An official list of BSC member attendees is appended to the end of this document as Attachment A. Mrs. Lindley introduced Stephanie Wallace, the Writer/Editor from Cambridge Communications and Training Institute (CCTI), who she explained would record the minutes of the meeting. To make it easier for her to capture the comments, Mrs. Lindley requested that everyone state their names prior to any comments for the record. She indicated that the CDC and On Par Production (OPP) Technicians would audio record the meeting for archival purposes to ensure accurate transcripts of the meeting notes. The meeting minutes will become part of the official record and will be posted on the CDC website at

www.CDC.gov/injury/bsc/meetings.html. All NCIPC BSC and *Ex Officio* members were requested to send an email to Mrs. Lindley at ncipcbsc@cdc.gov at the conclusion of the meeting stating that they participated in this meeting. In addition, Mrs. Lindley explained the public comment process.

Welcome / Introductions

Amy Bonomi, PhD, MPH
Co-Chair, NCIPC BSC
Professor, Department of Human Development and Family Studies
Michigan State University

Dr. Bonomi thanked everyone for their commitment to injury and violence prevention and expressed appreciation to them for taking time out of their busy schedules to participate in this important committee, which provides advice to the leadership of CDC and NCIPC on its injury and violence prevention activities. She also thanked and welcomed members of the public, pointing out that there would be a Public Comment session from 3:45 PM to 4:15 PM. At that time, Mr. Victor Cabada would be providing instructions for anyone wishing to make a public comment. Dr. Bonomi referred those joining by phone without access to the slides through Zoom to www.cdc.gov/injury/BSC where the slides could be downloaded.

Approval of the July 21, 2021 NCIPC BSC Meeting Minutes

Amy Bonomi, PhD, MPH
Co-Chair, NCIPC BSC
Professor, Department of Human Development and Family Studies
Michigan State University

Dr. Bonomi referred BSC members to the copy of the minutes provided to them with their meeting materials from the July 21, 2021 NCIPC BSC meeting. With no questions or edits noted, Dr. Bonomi called for an official vote.

Motion / Vote

Dr. Floyd made a motion, which **Dr. Pacula** seconded, to approve the July 21, 2021 NCIPC BSC meeting minutes. The motion carried unanimously with no abstentions.

Director's Update

Overview

Christopher Jones, PharmD, DrPH, MPH
CAPT, US Public Health Service
Acting Director, National Center for Injury Prevention and Control
Centers for Disease Control and Prevention

CAPT Jones thanked everyone for joining the meeting. He provided a few updates on activities within the Injury Center. NCIPC recently received its Fiscal Year 2022 (FY22) appropriation as part of the Omnibus Bill that was passed. Under the Omnibus Bill, the Injury Center received an

increase of about \$32 million compared to its FY21 enacted funding level. This brings NCIPC's total appropriation to nearly \$715 million. Although this is a smaller increase than anticipated, it is an important endorsement of the Injury Center's work in what turned out to be a tough appropriation year. Importantly, there were no decreases in any of NCIPC's funding lines and several lines received increases. Compared to the FY21 funding level, the Injury Center received a \$500,000 increase for its traumatic brain injury (TBI) prevention work; a \$500,000 increase for child sexual abuse (CSA) prevention; an increase of \$5 million for rape prevention work; a \$2 million increase for adverse childhood experiences (ACEs) prevention efforts; an \$8 million increase in the suicide prevention line; \$15 million in the overdose prevention and surveillance line; and a new funding line of \$1 million for drowning prevention. NCIPC is pleased with these increases, which signals continued support for the importance of the work being done within the Injury Center at CDC.

The FY22 budget also included a directive from Congress for the Injury Center to establish a program that leverages existing CDC activities dedicated to adolescent mental health to develop and implement national goals and a national strategy to improve adolescent mental wellbeing and advance equity, with a focus on culturally responsive prevention and early intervention. NCIPC believes that it is an important area even though it did not include funding, given the declining rates of mental health and wellbeing among adolescents over the past decade. This certainly has been exacerbated more recently by the COVID-19 pandemic. NCIPC is just beginning this work and is looking across CDC to determine how to coordinate efforts within the Injury Center and other Centers, Institutes, and Offices (CIOs) within CDC that are engaged adolescent mental health work. It makes perfect sense for this to be placed within the Injury Center, given the strong links between mental health and NCIPC's ACEs, suicide, overdose, and violence prevention work. The Injury Center certainly has a long history of doing this type of coordination work across CDC due to the work by NCIPC's Overdose Response Coordination Unit (ORCU), which over the last 5 years has been coordinating key messages, strategies, and a one-voice approach for CDC through its overdose prevention efforts while also enabling other CIOs to have autonomy in their specific work around overdose and drug-related harms.

The President's FY23 Budget Request was released to Congress on March 28, 2022, which includes \$1.28 billion in discretionary spending for NCIPC. That is an increase of \$568 million over the FY21 budget. This again underscores the importance of the work of the Injury Center. Some specific highlights from the President's FY23 Budget Request include a \$4.5 million increase for domestic violence and sexual violence, which will be used to develop and implement a surveillance strategy to estimate the burden of intimate partner violence (IPV) among older adults. Funding also will be used to help inform updates to *Preventing Intimate Partner Violence Across the Lifespan: A Technical Package of Programs, Policies, and Practices: Technical Package on Preventing Intimate Partner Violence*.¹ This funding also will be used to prevent dating violence among youth with disabilities by developing targeted recommendations, messaging, and resources based on the successful frameworks that NCIPC has used in other teen dating violence (TDV) prevention initiatives.

The Budget Request also includes a \$5 million increase for NCIPC's domestic violence community projects, which will be used to expand the Domestic Violence Prevention Enhancement and Leadership Through Alliances (DELTA) Impact² program by funding additional recipients to build capacity to implement and evaluate IPV prevention strategies in their states. There is a \$45 million increase for NCIPC's rape prevention line, as well as a \$2

¹ <https://www.cdc.gov/violenceprevention/pdf/ipv-technicalpackages.pdf>

² <https://www.cdc.gov/violenceprevention/intimatepartnerviolence/delta/impact/index.html>

million increase for the National Violent Death Reporting System (NVDRS) that will be used to expand collection of SOGI variables to better understand violence deaths among disproportionately affected groups and inform efforts toward decreasing the number of deaths across groups. The Budget Request also includes a \$22.5 million increase for NCIPC's firearm injury and mortality prevention research. This will be used to build upon the funding of the Injury Center's current funded firearm research projects and begin implementation of evidence-informed strategies through a new grant program focused on preventing firearm injuries and deaths in high-risk urban and rural communities. The Budget Request includes a \$2 million increase for the Injury Center's suicide prevention work within the suicide strategic priority, as well as an \$8 million increase for NCIPC's ACEs prevention work.

One of the largest areas of increase in the President's FY23 Budget is a \$250 million increase for community and youth violence prevention that will be used to increase the reach of community violence work to help stem the rise of violence in cities across the country. There was a call for community violence funding in the FY22 budget, which is funding that NCIPC anticipated receiving in the FY22 appropriation that was not received. However, strong groundwork has been laid to quickly advance efforts in communities should funding from the President's FY23 Budget come through an appropriation. The President's Budget also includes a \$220 million increase for NCIPC's overdose prevention and surveillance work, which the Injury Center would use for local investments in innovation to reach the nation's largest cities, counties, and smaller communities that are heavily impacted by the overdose crisis and for continued support of states, territories, and local jurisdictions that already have been funded by CDC to track and prevent overdose deaths. The funding also will be used to support collection and reporting of real-time robust mortality data, investments in prevention for people at highest risk, and upstream prevention programs. The President's Budget is a signal of the priorities of the administration, but certainly Congress has its own priorities. However, NCIPC is certainly encouraged by the focus on injury and violence prevention programs and the large potential increases that the Injury Center might receive.

Now turning to programmatic updates. In the extramural research area, NCIPC recently released its *Adverse Childhood Experiences Research Priorities for Equitable Prevention, Intervention, Identification, and Response*³ that was reviewed during a prior meeting. CAPT Jones expressed gratitude to the BSC members for their thoughtful feed back on the draft priorities, which directly influenced the final product. NCIPC has 10 extramural research Notices of Funding Opportunity (NOFOs) for FY22; including the following:

Division of Violence Prevention

- Continuing Research Grants to Prevent Firearm-Related Violence and Injuries (R01)
- Prevent Community Violence and Eliminate Racial and Ethnic Inequities and Risks for Community Violence (R01)
- New Investigators in Conducting Research Related to Preventing Interpersonal Violence Impacting Children and Youth (K01)
- Rigorously Evaluate Programs and Policies to Prevention Child Sexual Abuse (U01)

Division of Overdose Prevention

- Understanding Polydrug Use Risk and Protective Factors, Patterns, and Trajectories to Prevent Drug Overdose (R01)
- Rigorous Evaluation of Strategies to Prevent Overdose through Linking People with Illicit Substance Use Disorder to Recovery Support Services (R01)

³ https://www.cdc.gov/injury/pdfs/researchpriorities/research-priorities_aces.pdf

- ❑ Rigorous Evaluation of Community-Level Substance Use and Overdose Prevention Frameworks that Incorporate ACEs-Related Prevention Strategies (U01)

Division of Injury Prevention

- ❑ Research Grants to Evaluate the Effectiveness of Physical Therapy-based Exercises and Movements Used to Reduce Older Adult Falls (U01)
- ❑ Reduce Health Disparities and Improve Traumatic Brain Injury (TBI) Related Outcomes Through the Implementation of CDC's *Pediatric Mild TBI Guideline* (U01)
- ❑ Using Data Linkage to Understand Suicide Attempts, Self-Harm, and Unintentional Drowning Deaths (U01)

April 11, 2022 marked the final day for public comments on the draft *Clinical Practice Guideline for Opioid Prescribing* that will finalize the 60-day public comment period in the *Federal Register*. NCIPC received thousands of comments and looks forward to reviewing those as well as comments from peer reviewers as the Injury Center works toward a final release of the guideline planned for late 2022. CAPT Jones took this opportunity to thank the BSC members, including the BSC members who contributed to the Opioid Workgroup (OWG) and the discussion last summer in reaction to the initial draft guideline. Substantial changes were made to the draft that was published in the Federal Register based on feedback from the BSC and the OWG report. This feedback pushed NCIPC to be very thoughtful about the potential for misapplication and ensuring that patient-centered care and shared decision-making was front and center in the recommendations. Changes were made structurally and in how the recommendations are framed.

NCIPC's Division of Overdose Prevention (DOP) is also working on a *Vitalsigns*[™] that will be released in July 2022 that will focus on increases in overdose deaths between 2019 and 2020 through an equity lens, recognizing the large increases that have occurred among communities of color in recent years. NCIPC also looking forward to a busy week actively engaging in and presenting at the National Rx Summit to be convened in Atlanta on April 18-21, 2022. The Division of Violence Prevention (DVP) also has a *Vitalsigns*[™] that will be released in May 2022 focused on changes in firearm, homicide, and suicide rates between 2019 and 2020, again taking a very intentional look at the connection between equity and increases in these outcomes. As mentioned earlier, NCIPC has spent much of the last year building the foundation for its community violence prevention work in coordination with the White House, Department of Justice (DOJ), and external partners and is primed to continue that work should resources become available.

The NCIPC Division of Injury Prevention (DIP) recently released a NOFO for its Comprehensive Suicide Prevention Program that will fund up to 6 additional jurisdictions based on the increases received in the FY22 budget, which is very exciting. This program has continued to grow each year as NCIPC marches toward a national program for comprehensive suicide prevention. The Injury Center also funded 23 applicants for its Core State Injury Prevention Program (Core SIPP), which builds state capacity to effectively identify, evaluate, and disseminate injury and violence prevention strategies. This particular round of Core SIPP funding builds on infrastructure established through previous iterations of this program and is focusing on ACEs, TBI, and transportation-related injuries. DIP also has been quite busy around data and surveillance, and helping to advance NCIPC's data science work. They are looking to continue to advance machine learning (ML) applications leveraging syndromic data and improving other data systems to help better predict and forecast what is occurring in injury and violence prevention, being on the leading edge of data science work, and incorporating that into the Injury Center's programmatic and scientific efforts.

In terms of the Injury Center's Diversity, Equity, Belonging, Inclusion, and Accessibility (DEBIA) efforts, over the last 1.5 years, NCIPC has embarked on an introspective journey related to DEBIA in the center. This has included a center-wide assessment of DEBIA activities in the Injury Center workforce, workplace, and scientific and programmatic work. CAPT Jones emphasized that from a personal perspective, this has been very inspiring work that underscores how important it is for the future of the Injury Center to fully embrace DEBIA in all that they do in terms of how they interact as an organization, how they interact with partners, and how they advance their scientific and programmatic work. The introspective process has pushed NCIPC to look critically at themselves as individuals and collectively as an organization to challenge assumptions, identify biases and determine where they have failed their colleagues and the communities they have served in the past, and commit to changing the processes and policies that advantage some while disadvantaging others. It has been inspiring to see the commitment and openness of the staff and leadership across the Injury Center to tackle this head on. CAPT Jones publicly acknowledged all of the work that NCIPC staff have undertaken to reach this point, and the BSC members for their feedback during the discussions about various equity issues over the last couple of years. He believes there is now a strong foundation to move the Injury Center and the injury prevention field forward in a more equitable and just way.

Discussion Points

Dr. Compton acknowledged that it would take a major effort to analyze the thousands of comments received on the draft *Clinical Practice Guideline for Opioid Prescribing*, but wondered whether there were any initial thoughts on how such a large number of comments could be reconciled and balanced as NCIPC is moving toward publishing the guideline.

CAPT Jones stressed that fortunately, they have experience in receiving thousands of comments previously. Before the draft guideline was released, a process was established in the Injury Center to classify, code, and thematically analyze the various comments being submitted. He has continued to receive hard copies as well that are added to the docket. From among those he has received, many are from individual patients articulating the challenges they continue to face in gaining access to pain care. There have been some positive comments pertaining to the changes that have been made, as well as additional suggestions for further revisions of recommendations. A team and support are in place to go through the comments to ensure that NCIPC is doing its due diligence to weigh what is shared by the public. An intentional effort has been made to cast as wide a net as possible in collecting feedback by engaging with various partners and advocacy organizations to spread the word as much as possible, because the Injury Center wants to hear perspectives from a diverse set of stakeholders for how this can be a useful clinical tool.

Dr. Michael asked whether NCIPC has considered its role in motor vehicle (MV) safety and thinking about any additional work in that area, given the recent sharp increase in MV fatalities across the US.

CAPT Jones indicated that MV is an active area in which the Injury Center has been engaging with the DIP where that work sits, subject matter experts (SMEs), and leadership to assess transportation safety and MV crash deaths due to the rise seen in recent years. NCIPC has reengaged in their longstanding partnership with National Highway Traffic Safety Administration

(NHTSA) and others in the Department of Transportation (DOT) because under the Transportation Bill, there are elements of work that specifically call out for DOT and CDC to work together. After multiple years of declines and now a resurgence in mortality, there is an effort to raise the visibility of this issue. NCIPC is somewhat constrained from a resource standpoint in that increases from Congressional appropriations have not been allocated to the Injury Center in the same way that has occurred for other areas such as overdose. The hope is that by raising the visibility and the fact that there are public health strategies that can be brought to bare, NCIPC can garner additional support from advocacy, partner organizations, and people on The Hill recognizing that there is an important role for state and local public health to address rising mortality from transportation safety issues.

Traumatic Brain Injury (TBI) Research Priorities Update

CAPT Matthew Breiding, Team Lead
Traumatic Brain Injury Division of Injury Prevention (DIP)
National Center for Injury Prevention and Control
Centers for Disease Control and Prevention

CAPT Breiding indicated that the goal of this effort was to assess NCIPC TBI research efforts and update the Injury Center's TBI research priorities based on the evaluation of what has been done previously. To put this into context, the previous priorities included the following:

1. Evaluate the effectiveness of strategies for preventing all forms of TBI and enhance the recognition and management of mild TBI in clinical and community settings.
2. Identify effective strategies for the primary prevention of sports concussion.
3. Evaluate the effectiveness and economic efficiency of existing surveillance systems to capture TBI, especially mild TBI related to youth sports participation.
4. Quantify short- and long-term outcomes resulting from TBI and identify modifiable risk and protective factors predicting these outcomes.

The priorities related to prevention of sports concussion and mild TBI (mTBI) related to youth sports participation followed a 2014 Institute of Medicine (IOM) recommendation that CDC develop a more comprehensive system to capture the incidence of sports concussion among youth.

The Injury Center's Associate Director for Science (ADS) Office identified a process including some guiding principles and a scope that was to be followed by the WG. The first step was to gather and review materials to evaluate progress on the 2015 priorities and identify gaps in the field that can be addressed by the new TBI Research Priorities. This was accomplished largely through a landscape review that included a comprehensive NCIPC intramural and extramural research inventory. Interviews were conducted with external and internal TBI experts, and a literature review of the larger TBI research field was conducted. The WG then synthesized the findings and drafted new priorities. The final product is a new set of priorities with a set of more specific research questions that the Injury Center hopes to address in the next 3-5 years. It is important to note that this effort covers only TBI research and does not cover many of the other activities that the TBI Team undertakes, such as public health surveillance. A focus was placed on priorities where there is likely to be an opportunity to demonstrate progress. A major part of the process was to review the 2015 research priorities to determine what has been done since that time to address those priorities.

One of the first steps of the WG was to establish a logic model for the process that included inputs, activities, outputs, short-term outcomes, intermediate outcomes, and long-term

outcomes. Some examples of inputs included the 2015 Research Priorities, some surveillance data consulted on TBI-related disparities, and the DIP's Strategic Plan. Some of the activities included the inventory of Injury Center TBI research from the past 5 years and the landscape review of non-Injury Center TBI research conducted over same time period. Outputs included some findings from the inventory and landscape scan and the final priorities and research questions within those. An example of a short-term outcome is a better understanding of gaps in TBI research and the Injury Center's role in addressing those gaps. An example of an intermediate outcome is a larger body of research devoted to addressing TBI-related health disparities. An example of a long-term outcome is uptake and use of best available evidence by the public health field and practitioners.

The WG established a set of questions that they identified early on and used as a touch point throughout the process, which included the following:

- How has TBI public health research evolved in the last 5 years?
- What progress has been made toward the 2015 priorities?
- What is CDC's role within the TBI public health research landscape?
- How do new and emerging TBI program priorities inform research priorities for TBI?
- What should the updated TBI research priorities be?

The WG gathered and reviewed materials on extramural research that had been conducted since the 2015 Priorities. NCIPC has a number of internal tracking systems at the Center, Division, and Team levels. There is a considerable amount of overlap among these. In reviewing all of them, the WG was able to obtain a comprehensive picture of what has been done in TBI-related research since 2015. Similarly, the WG gathered and reviewed materials on intramural research that had been conducted since the 2015 Priorities. Again, the Injury Center has a number of internal tracking systems that the WG was able to review and compile to ensure that there was a comprehensive list of all that has been done internally related to TBI research.

The WG conducted a landscape review with a variety of inputs. This included website reviews, such as the CDC TBI website that describes NCIPC's work and is where a number of its publications are located. The review included TBI-related publications that were emanating from CDC and a number of internal tracking systems were consulted that described the research publications that were published in the past 5-6 years. The review also included discussions with internal and external SMEs. A larger literature search was conducted and reviewed that focused on articles that examined larger issues in TBI and were more likely to identify gaps in research. In terms of the internal NCIPC research review, the WG identified 141 potential research activities. Among these, 71 publications were excluded because these were book chapters, surveillance reports, commentaries, or sets of recommendations. In other words, they were not original research articles. The WG included 70 publications from this time period by CDC authors that were focused on original research, including 53 intramural and 17 extramural publications.

The review of the research inventory was broken down by whether it was focused on one of the 4 priorities that were laid out in 2015. These were categorized as follows:

- ❑ Priority 1 (**32 publications**): Evaluate the effectiveness of strategies for preventing all forms of TBI and enhance the recognition and management of mild TBI in clinical and community settings.
- ❑ Priority 2 (**28 publications**): Identify effective strategies for the primary prevention of sports concussion.
- ❑ Priority 3 (**6 publications**): Evaluate the effectiveness and economic efficiency of existing surveillance systems to capture TBI, especially mild TBI related to youth sports participations.
- ❑ Priority 4 (**14 publications**): Quantify short- and long-term outcomes resulting from TBI and identify modifiable risk and protective factors predicting these outcomes.

The stakeholder interviews were conducted with a wide variety of TBI experts from within CDC and with other external agencies and organizations. The goals of these interviews were to understand how the TBI field has changed in the past 5 years; reflect on whether adequate progress has been made toward NCIPC's current research priorities; provide insight into which TBI research questions should be the focus of NCIPC research; and describe potential gaps present in the current NCIPC research agenda and field. Stakeholder interviews were conducted with representatives from a number of other federal agencies that have a role in TBI research. These included the Department of Defense (DoD), Veterans Affairs (VA), National Institutes of Health (NIH), Administration for Community Living (ACL) and its National Institute on Disability, Independent Living, and Rehabilitation Research (NIDILRR), and Patient Centered Outcomes Research Institute (PCORI). The WG also reached out to a number of advocates that have some role in either funding research directly or in providing advocacy for TBI research. These included the Brain Trauma Foundation (BTF), Brain Injury Association of America (BIAA), National Association of State Health Injury Administrators (NASHIA), and United States Brain Injury Association (USBIA). Interviews with internal CDC stakeholders focused on CDC's unique federal role moving forward. These interviews identified the following as priorities for CDC's TBI work: primary prevention, identification of risk and protective factors, health disparities, and children who experience TBI across the lifespan.

The WG synthesized the stakeholder interviews and identified a recommended set of areas of focus, including identifying and evaluating effective strategies for primary prevention across all mechanisms of injury; enhancing and expanding diagnosis of TBI; improving the understanding of TBI as a chronic disease, including long-term outcomes and comorbidities; improving longitudinal surveillance and data harmonization; and advancing implementation science for TBI guidelines and interventions.

The WG also conducted a larger literature review with a particular focus on review articles or articles that spoke to gaps in TBI research. These were not limited to articles published by CDC authors. A total of 21 publications were reviewed. This included 15 systematic literature review and research summary articles, 2 TBI-focused journal supplement prefaces, 2 commentaries, CDC's *Report to Congress on the Management of TBI in Children*, and CDC's *Guideline on the Diagnosis and Treatment of mTBI Among Children*. This literature review highlighted a variety of populations disproportionately affected by TBI, including children and teens, older adults, athletes, individuals with mental health conditions, victims of IPV, homeless and incarcerated populations, and workers in high-risk occupations. Based on this larger literature review, the WG identified a number of areas where CDC is well-positioned to advance the science, including enhancing surveillance and data collection to understand the true burden of TBI;

identifying strategies to prevent and mitigate the physical, psychological, economic, and social impacts of TBI; and the rigorous evaluation of clinical guidelines in order to inform future revisions of recommendations and implementation materials. In addition, the WG indicated that more research is needed related to risk and protective factors, strategies for disproportionately affected groups, and implementation science.

The WG then identified the following set of 4 proposed priorities, including specific questions within each priority:

1. *Improve methods to measure, collect, and analyze data to inform monitoring of TBI burden trends and evaluating prevention strategies.*

- a) How can the methods to obtain national and state-level estimates of TBI incidence and prevalence, including underserved populations at disproportionate risk for TBI be improved?
- b) What is the validity and reliability of using self-reported TBI as a method for estimating TBI prevalence?
- c) How can the methods to estimate the economic burden of TBI, including long term costs, Quality Adjusted Life Years (QALYs), Disability Adjusted Life Years (DALYs) be improved?

2. *Develop and evaluate the effectiveness of strategies for primary prevention of TBI.*

- a) Which strategies effectively prevent sport- and recreation-related TBIs?
- b) Which strategies effectively prevent TBIs in non-sports injury mechanisms (e.g., motor vehicle crashes, firearms, falls)?
- c) How can evidence-based prevention strategies be effectively adapted by groups disproportionately affected by TBI?
- d) What are the unique risk and protective factors (e.g., adverse childhood experiences, economic factors, access to care) for populations at higher risk for TBI such as people from racial and ethnic minority groups, people in lower socioeconomic statuses, LGBTQ+ persons, people experiencing homelessness, veterans and current servicemembers, and people in correctional or detention facilities?

3. *Improve the recognition and identification of concussion/TBI in healthcare and community settings.*

- a) What are the most predictive strategies for screening and identifying TBI in the emergency department (ED) to support clinical care?
- b) What are the inequities in recognition and identification following TBI in populations at disproportionate risk, such as people from racial and ethnic minority groups, people in lower socioeconomic statuses, individuals with mental health conditions, victims of intimate partner violence, people experiencing homelessness, people in correctional or detention facilities? How can these inequities be reduced?
- c) How can recognition of TBIs be improved in multiple contexts such as clinicians evaluating patients with suspected TBI, athletes or coaches reporting symptoms, teachers observing symptoms at school, and parents observing changes in their child's behavior?
- d) To what extent are healthcare providers incorporating best available evidence regarding diagnosing TBI? What are the barriers to broader implementation?
- e) How can best practices related to TBI diagnosis be implemented more broadly?

4. Identify modifiable risk and protective factors for negative post-TBI impacts and leverage these to improve short- and long-term outcomes.

- a) How do near-term diagnostic and management practices impact TBI-related outcomes?
- b) What practices related to injury education and the provision of discharge instructions at the time of diagnosis are effective in improving TBI management and preventing adverse effects?
- c) What are the long-term effects of TBI sustained during childhood) and how are they best managed (e.g., TBI as a chronic condition)? What are risk and protective factors contributing to long term effects?
- d) What strategies implemented in the days and weeks following a TBI can reduce the negative impacts of TBI among disproportionately affected populations?
- e) How can return to school strategies be improved to reduce short- and long-term outcomes after TBI diagnosis?

Discussion Points

Dr. Kaplan observed that males' vulnerability to TBI is portrayed in popular culture and popular media. The priorities do not seem to focus enough on sex/gender-specific approaches or understanding and the need to do a better job of assessing males separately. In his area of suicide, suicide research, and suicide prevention he has called for a serious effort to separate males from females. He wondered whether this had been a topic of conversation, including why are men are at higher risk for TBI.

CAPT Breiding responded that this was discussed by the WG and probably is the most well-established longstanding finding in terms of risk factors among population groups. It is a priority to document this in CDC's surveillance estimates and it is called out regularly. There is a fairly long list of groups who are at high-risk for TBI, so this is certainly called out and mentioned in the research priorities as one of the examples. While it is called out to the degree of other risks, there is not a specific focus on this or other subpopulations in the research priorities. Given that there is such a wide variety of disparities, the ultimate decision was to list the full range. This certainly will continue to be a topic of conversation.

Ms. Castillo said it was great to see high-risk occupations and industries listed and she noted that the National Institute of Occupational Safety and Health (NIOSH) stands ready and welcomes the opportunity to work with the Injury Center to chip away at this issue. One of the opportunities in terms of the need for expansion of surveillance is to do a better job of incorporating industry and occupation in surveillance systems, on which NIOSH would be happy to work with CDC. NIOSH has an automated coding system that can reduce some of the burden for that and a great history of working with the Injury Center on the National Violent Death Reporting System (NVDRS) to get those codes in.

CAPT Breiding indicated that CDC would welcome that opportunity as well.

Dr. Pacula noted that as a Health Economist, she was intrigued by a couple of the research priorities related to investigating the health disparities and disproportionately affected groups, in particular the issues concerning the economic impacts. Identifying the data generating process that allows measurement of these cases is very important when going on later to consider the economic implications. In some instances, TBIs are a function of a choice to engage in a sport knowing the risks versus being a victim of domestic violence. While the healthcare costs and

potential long-term effects on the child will be important for both of those examples, the decision made by individuals to engage versus TBI happening to them is important in considering the economic impacts/consequences. In measuring incidence, it will be very important to think about the data generating process and the extent to which TBIs occurred because of a choice the parents made to permit their child to play a sport to improve their possibilities of going to a great college versus being a victim in an unsafe home.

CAPT Breiding noted that the Injury Center has been engaging in many discussions lately about how to produce better and more complete estimates of the cost of TBI, recognizing that the most recent estimates were some time ago. He suggested that it would be valuable to connect further with Ms. Castillo about this to hear additional thoughts about how to measure that, noting that he could bring CDC Health Economists to that discussion.

Referring to Priority 4 and near-term management practices, **Dr. Mundkur** indicated that the Food and Drug Administration (FDA) certainly would be interested in better research surrounding off-label use of therapeutics such as stimulants, particularly for mTBI in the pediatric population. Trials and observational data should be considered as the Injury Center delves into this further.

CAPT Breiding responded that a choice was made to focus more on near-term actions to determine what can be done in the hours and days after a TBI rather than in the months and years following a TBI. Given that CDC is a public health agency, the tendency is to focus more on primary prevention and initial recognition and management. It would be helpful to have feedback on additional practices to consider.

In terms of the ED setting, **Dr. Rich** called out the overlap between TBI symptoms and other post-traumatic stress disorders (PTSD), particularly as it affects young people who have been victims of violence in urban settings. In thinking about screening and guidelines for treatment, he expressed hope that counseling individuals about what to expect and establishing connections to further care would be addressed, particularly for those who lack access to healthcare.

CAPT Breiding noted that one of the questions with one of the priorities regards the mental health effects of a TBI. Ongoing mental health issues certainly would need to be examined, particularly related to the incident that led to the TBI. This is a definite area of focus that the Injury Center has been discussing increasingly lately, and they will keep this aspect in mind moving forward.

Dr. Lumba-Brown noted the strong focus on mTBI and TBI in general and requested additional information about prevention efforts that focus on more severe forms of TBI, including those sustained from MV collisions, and whether there are plans to update data on the prevalence of severe TBI specifically.

CAPT Breiding indicated that there was a pointed discussion among the WG about what the team's role is related to primary prevention of TBI. TBI is quite different from a lot of the other topics within the Injury Center, which are focused on particular mechanisms of injury. Much of the primary prevention work for those mechanisms takes place among other teams or divisions. There is a team focused on older adult falls, a team focused MV crash prevention, an entire division focused on violence prevention, et cetera. The TBI Team within DIP has carved out a special niche related to primary prevention of sports concussion, given that there is not another group at CDC that is focused on that. The priorities do call that out specifically as an area of

focus. He thinks that much of this work related to other leading causes of TBI will be done in collaboration with the other teams and divisions that are focused on those areas. For the most part, the work related to primary prevention of the leading causes of more severe TBI will be led by other teams. Nevertheless, it remains a priority for the Injury Center to focus on TBI as an outcome. As it relates to TBI surveillance, there are good estimates of more severe TBI in terms of diagnosed TBI using administrative healthcare datasets. Estimates of TBI-related hospitalizations and deaths are reported each year based on International Classification of Diseases-10-Clinical Modification (ICD-10-CM) coding. The gap in TBI surveillance is related to mTBI, given that the only estimates available are sports-related or those seen in the hospital setting. However, it is known that many seek care outside of the hospital setting and many do not seek care at all. Therefore, an effort has been made to focus more on capturing a broader and more comprehensive set of mTBIs.

Dr. Liller reported that the University of South Florida College of Public Health (USF COPH) has done some work on school-related concussions, especially in sports, and has used a variety of assessment tools. She wondered whether there are plans to consider how schools can better assess concussions immediately on-site where it occurs, regardless of whether it is sports-related. She did not see anything about whether there are efforts in chronic traumatic encephalopathy (CTE).

CAPT Breiding pointed out that one of the larger priorities includes improving the process of not only youth returning to school following a TBI regardless of whether it occurred in the school setting, but also particularly related to TBIs that are experienced in school settings in terms of how to improve the recognition, management, and practices of school personnel. The Injury Center is currently funding several research studies that are examining the effectiveness of return-to-school programs that are thought to be promising in terms of identifying more TBIs. There also has been a focus on improving the training of school professionals. For instance, a new training was developed that was released last year that provides school professionals with the tools thought to be needed to better recognize and manage TBIs. This also is called out as a research priority. There has been discussion about the degree to which the Injury Center should be involved in CTE research. The Congressional language is fairly specific in that NCIPC is directed to focus on TBI itself. While a component of CTE is TBI, it also is thought to be largely sub-concussive impacts. That probably is a factor in helping to decide that CTE probably is not an area of focus for NCIPC. In addition, those types of studies are expensive to conduct and may not fit within the current Injury Center budget. Recognizing that NCIPC has a role in providing education about CTE to the public and healthcare professions, a set of documents was developed that focus on briefing the public and healthcare professionals about what is currently known about CTE. Those will be updated as more research is conducted.

Dr. Greenspan noted that the afternoon would be focused on health disparities. NCIPC has engaged in considerable discussion about how to better fuse health disparities into all of its research priorities. In terms of the TBI priorities and other topic areas, she requested that the BSC consider whether the Injury Center is achieving the right balance in terms of incorporating health disparities in its various portfolios. She also asked them to consider the TBI Team's role in overall prevention when there are other areas working on that such as falls prevention and MV, which do not necessarily focus on TBI. That is, are there some TBI-specific questions that they should be thinking about and doing a better job in collaboration?

Dr. Pacula noted that in thinking about health disparities, it is natural to identify the extent to which a patient already identified with a TBI might be treated, in what healthcare system, what access to healthcare they have, et cetera and how those might differentially influence their long-term impacts. It also is important to think about health disparities in terms of incidence and prevalence driven by the need to participate in a physically potentially risky sport being greater for a young student if that is the means to get a college education, versus a young student who has access to capital or opportunities to get into a college if they do not play sports. It is important to examine the incidence and causes for the TBI in the first place to better understand the extent to which this might be driven by economic needs, as well as differential home experiences that have important health disparity implications.

Dr. Greenspan responded that this does beg them to think about some of the social determinants of health (SDOH) that may lead people in different directions and may result in more risky behaviors. Having done some visiting around the country on sports concussion, that really does come to mind, in addition to IPV and other areas in which they want to think about more broadly in terms of prevention.

Dr. Kaplan pointed out that he did not hear much about brain injuries among the incarcerated population. Multiple studies and meta-analyses have been conducted to examine the prevalence of head injuries among incarcerated persons. With the current mass incarceration, he wondered whether NCIPC has had any interest in that context and what can be done. This is related to all sorts of other SDOH, class, race, and gender as well.

CAPT Breiding indicated that there have been considerable discussions about incarcerated populations and whether something can be done to impact the trajectory of persons who are incarcerated. Better surveillance would be beneficial, and surveillance efforts overall is a major focus. An issue for CDC as a public health agency is that a very high level of lifetime TBI has been identified amongst incarcerated populations. Oftentimes what is being measured is a TBI that occurred long ago in childhood, potentially including multiple TBIs and other trauma (ACEs, psychological issues, et cetera). Where they are stuck pertains to what can be done to impact that population in a positive way, oftentimes many years after the TBI. As noted earlier, NCIPC has chosen to invest its resources in identifying and managing TBIs and trying to respond in the days and weeks after the TBI because that is where they think they can perhaps impact the most people. The focus is on trying to reduce the effects of a TBI amongst those who have a new TBI, with one of the goals being to reduce incarceration. Having a TBI or multiple TBIs and brain damage from that certainly may be a precipitating factor for many who end up incarcerated.

Dr. Bonomi emphasized that Dr. Greenspan's 2-part question to the BSC in terms of thinking about the intersection between equity research and TBI research would be very important to consider in the context of the upcoming DEBIA presentations with respect to: 1) the gaps/priority areas that the Injury Center should be considering; and 2) balancing that with the CDC's larger portfolio of injury prevention research and whether there are TBI-related questions that the BSC should be thinking about.

Older Adult Falls Research Priority Update

**Dr. Gwendolyn Bergen, Acting Team Lead
Safety Promotion Team Division of Injury Prevention
National Center for Injury Prevention and Control
Centers for Disease Control and Prevention**

Dr. Bergen explained that the goal of this effort was to assess and update the Injury Center's 2015 older adult (65 years and older) research priorities. To put this into context, the previous priorities included the following:

1. Measure provider and health system implementation of clinical fall prevention activities and use existing data systems to support routine reporting and evaluation.
2. Improve clinical fall prevention implementation in the primary care setting, including ensuring linkages with pharmacies and community-based prevention programs.
3. Evaluate the health benefits of conducting specific clinical fall prevention strategies like Stopping Elderly Accidents, Deaths, and Injuries (STEADI) in healthcare settings.
4. Estimate the cost of fall-related injuries and deaths and the economic efficiency of conducting clinical fall prevention strategies.
5. Explain the critical factors that influence changing trends in falls and fall-related injury rates among older adults.

The overall process was very similar to that for TBI. The team first set guiding principles and the scope. They then established 2 WGs and roles, an Implementation WG to oversee the whole process and an Advisory WG. Materials were gathered and reviewed. The contractor conducted an inventory of NCIPC projects and a landscape review. The WGs then synthesized the findings and drafted new priorities.

In terms of the guiding principles and scope, they began with the existing research priorities and then developed research questions under each priority. They wanted each priority to direct the older adult falls work for the next 3-5 years and to be focused on intramural and extramural projects. Research priorities were selected with the need to demonstrate progress in achieving the priorities in the next 3-5 years. To do this, a review was done of research conducted inside and outside of CDC since the establishment of the 2015 priorities. The following guiding evaluation questions were developed:

- Has CDC done enough to address the current priorities? If not, what carries over?
- How has the older adult falls landscape changed in the past 5 years? Within NCIPC? With partner organizations?
- What is public health's unique contribution to older adult falls research and programs? What is CDC's role?
- Have emerging research issues related to older adult falls surfaced? What, if anything, does CDC need to change?
- What are the current needs of the public health practice field for older adult falls activities?
- How do older adult falls' programmatic activities inform research priorities and activities? Vice-versa?

The methodology was first to have the contractor compile an inventory of NCIPC's intramural and extramural older adult falls' research publications, which were then analyzed; conduct and summarize key findings from a series of interviews with older adult falls research experts, internal and external to CDC; and synthesize findings across the inventory, interviews, and landscape review inputs and documenting insights for updated older adult falls research priorities. The compilation and analysis of the inventory of NCIPC projects from 2015-2021 included an assessment of the Division of Unintentional Injury Prevention (DUIP) and the new DIP bibliographies for publications, review of the Injury Control Research Centers (ICRC) research projects, review of all of the projects in the NCIPC Research Priorities Tracking System (RPTS), and review of all of the publications and reports listed on the CDC Older Adult Falls webpage that contains a comprehensive listing of all of the work that the Older Adult Falls Team has done.

The findings were then synthesized. The inventory assessment initially identified 147 projects and papers, of which 73 were left after removing duplicates and non-research. These were categorized by which 2015 research priority they addressed and whether they were extramural or intramural research as shown in this table:

Research Priority*	Extramural (N-53)	Intramural (N-36)
P1: Measure Implementation	5	4
P2: Improve Implementation	23	3
P3: Evaluate	10	11
P4: Estimate Cost	1	4
P5: Changing Trends	14	14

*Research activities may address more than one research priority.

Based on age-adjusted fall death rate by sex for adults ≥ 65 years of age from 2011-2020 in the National Vital Statistics System (NVSS), rates had increased by 30% since 2011. Looking specifically at 2015-2020, there was a 15% increase. Unfortunately, the older falls burden continues to increase.

The key findings after synthesizing all of the data were that there has been limited intramural research on improving implementation (2015 Priority 2), more efficacy (2015 Priority 3) and cost-effectiveness (2015 Priority 4) would benefit the field, and there has been limited research on disproportionately affected persons across all priorities.

The contractor conducted interviews with key internal and external SMEs. External SMEs included the American Geriatric Society (AGS), National Council on Aging (NCA), National Association of State Emergency Medical Services Officials (NASEMSO), John A. Hartford Foundation (JAHF), American College of Emergency Physicians (ACEP), one of the ICRC Directors, a Pharmacist, a Geriatrician, and a Physical Therapist. Within HHS, the contractor spoke to SMEs who had been at the CDC Unintentional Injury Center for a long time working with older adult falls, a representative from CDC's National Center for Chronic Disease Prevention and Health Promotion (NCCDPHP) Healthy Aging Branch (HAB), Indian Health Services (IHS), and Centers for Medicare & Medicaid Services (CMS).

The findings from the interviews with these key SMEs were that CDC should identify and evaluate effective prevention strategies outside the clinical setting; improve the understanding of older adult falls as a chronic condition; apply health equity lens to older adult falls research; enhance the research infrastructure and data; and improve falls assessment and identification in high-risk populations.

The contractor also performed a landscape review to determine what other federal agencies work in older adult fall prevention and what CDC's unique role is. This review found that other federal agencies focus on inpatient/nursing home fall prevention research, biological causes of falls research, health system delivered interventions, and targeted populations such as the IHS that focuses on older adult fall prevention and American Indian/Alaskan Native (AI/AN) populations. CDC's unique federal role is to look at the clinical role in fall prevention, fall prevention in community-dwelling adults, and opportunities for dissemination and implementation.

The WG then identified the following set of 4 proposed priorities, including specific questions within each priority:

1. Describe the risk and protective factors associated with changing trends in falls and fall-related injury rates among older adults with an emphasis on groups which may be disproportionately affected.

- a) What risk and protective factors explain the differences in fall and fall injury rates, and injury severity among different groups of older adults?
- b) How does type of injury (e.g., TBI), and injury severity from a fall differ among groups of older adults?
- c) What risk and protective factors are associated with specific types of fall injuries (e.g. traumatic brain injuries, hip fractures)?
- d) What are the unique risk and protective factors (e.g., alcohol use, access to care) for populations at higher risk for falls and fall injury (e.g., AI/AN persons, people residing in rural areas)?

2. Improve the likelihood that older adults receive clinical fall prevention care (e.g., screening, assessment and intervention) at least once a year.

- a) What are the most effective clinical strategies for preventing falls and fall risk?
- b) What are the most cost-effective methods of implementing STEADI in healthcare settings?
- c) How can STEADI (i.e., falls screening, assessment and intervention) be more broadly adopted in different healthcare settings (outpatient, inpatient, pharmacies, physical therapy)?
- d) What are the best strategies for increasing clinical fall prevention efforts with emphases on older adults who are disproportionately affected by falls (e.g., AI/AN elders, rural older adults)?

3. Implement and evaluate effective strategies for linking clinical and community-based fall prevention.

- a) How can community organizations best partner with health systems to implement the core components of STEADI (e.g., screening, assessment, and intervention) in a cost-effective manner?
- b) What are the most effective methods to motivate community organizations to link with clinical systems for older adult fall prevention?
- c) How can clinical and community linkages for fall prevention be tailored to best serve the needs of disproportionately affected older adults?
- d) What payment models (e.g., CMS Alternative Payment Models) motivate the integration of clinical and community-based fall prevention?

4. Understand the knowledge, attitudes, and behaviors that motivate older adults to adopt clinically-recommended fall prevention strategies.

- a) What individual, relationship, community, and societal factors serve as barriers and facilitators to older adults, especially disproportionately affected ones, willingness to adopt their healthcare provider's recommended fall prevention plan of care?
- b) How can community-clinical linkages for fall prevention best be structured to reduce older adults' barriers to participating in prevention strategies?
- c) What are the most effective science- and theory-based tools (including promotional messages) for educating and encouraging older adults, especially disproportionately affected persons, and caregivers to prevent fall injuries as they age?

Discussion Points

Dr. Pacula suggested that this is an area in which improved data collection on how falls happen would make tremendous progress toward achieving some of the other priorities. Some of this information is available within electronic medical records (EMRs), although in varying degrees. She was struck that one of the first priorities was ways to increase reporting of information around falls. Older persons are willing to talk and take time to complete surveys, so it seems like there might be some behavioral measures within clinical settings that would allow for research to be done to obtain more detailed information in a more systematic way. She recommended a revision to at least the first priority to emphasize methods for obtaining this information, which seems like an obvious necessary first step for a lot of the other objectives.

Dr. Bergen reported that they have implemented several clinical studies over the last 5 years that have involved obtaining information from the EMR. In each case, they also survey older adults because there is information they cannot get from the EMR, such as whether they are using the strategies being recommended to them. Another area for which they would like more data are the circumstances at the time the injury occurs. The EMR has some information on that, and they have worked with the NCIPC Data Analytics Branch (DAB) to use ML to analyze some of those text fields, and they also are exploring other ways of getting data on everything that happened at the time of the fall (e.g., type of activity the older adult was engaged in).

Dr. Miskis encouraged NCIPC to engage with groups providing services across the country to get a sense of what is already being done in the social services arena to address this issue and to gain increased insight to the exposures that older adults have with these various services that could head off some of these injuries before they occur. The ACL would be happy to facilitate this.

Dr. Bergen indicated that the Injury Center does meet with the ACL and the NCA every 2 months and are always looking to expand that network to learn who else is working in falls in order to understand what is occurring in the community.

Dr. Lumba-Brown expressed an interest in learning more about current work. She inquired as to whether there is an effort to describe what types of injuries are sustained in geriatric populations sustaining falls, and if there is any classification of what area of the body is injured and in which setting that injury occurred. Perhaps using information about the type of injury sustained could help target prevention and educational strategies in the future.

Dr. Bergen replied that they have done some work to examine the type of injury and the body part that has been injured using the National Electronic Injury Surveillance System (NEISS). Additional work is being done with the DAB to try to automate some of the search techniques to better understand more about that, and they would like to do more in the future. Currently, most of the work has consisted of assessing the NEISS data and looking for more data that could provide information on the circumstance of injury. However, they have not found a lot which speaks to the experts identifying the lack of data to examine falls. Consideration is being given to ways to acquire more data on the circumstances surrounding falls and link back to the EMR to determine how that aligns with what body part might be injured and the severity of the injury.

Dr. Kaplan noted that he was calling in from Madrid, Spain where proportionally more of the population was over 65 years of age at 17% to 18% higher than in the US. As he walks the streets in Madrid, he is seeing very safe streets and sidewalks. With that in mind, he asked whether the Injury Center has engaged urban planners in their conversations about prevention of injuries in late life. Many cities in the US are poorly designed and are not healthy cities for older people. Perhaps it is time to move beyond the focus on the individual and individual mobility risk factors and instead look at the macro context of how cities are designed, the city of the future, and making that city safer for older adults.

Due to limited resources and not wanting to creep over into other federal agencies' scopes of work, **Dr. Bergen** pointed out that the Injury Center has been focused on clinical falls prevention. They are working with the ACL and NCA, which does a lot of home modification work to try to address environmental factors around older adult falls. They have received feedback from older adults that there is too much focus on inside the home and that there needs to be a focus on environmental factors outside the home. They also work with the NCIPC Transportation Safety Team on older adult mobility to try to take a more holistic view of the rise in falls, and developed a plan to look at environmental factors outside of the home.

Dr. Floyd emphasized that obtaining data from EMRs is problematic because they are not configured for it. It has been beneficial to build building screening into the EMR, which makes it easier to detect when screenings have been done for fall risk. It is much harder to find whether screening was actually acted on because there are so many different pathways one could go down when someone is screened as being at increased fall risk by referring them to physical therapy, an outpatient program, a neurologist, an orthopedist, et cetera. There is no question that environmental factors pose issues. This also is an area where there is a socioeconomic impact as well. It is much easier to work with patients who can make it into the office and are able to get to physical therapy, specialists, tai-chi programs, et cetera. It is more difficult to impact patients who are housebound, have Alzheimer's, et cetera. He asked if the Injury Center has found ways to look at implementation of measures to an EMR elsewhere to determine whether fall risk is being acted upon and ways to work with other populations.

Dr. Bergen responded that they are conducting a study currently with the Emory Healthcare System and one with the University of California at San Francisco (UCSF) where the screening results are within the EMR. They also have been able to modify the EMR to keep a good record of the assessment results. NCIPC is surveying the patients to collect data on what they have actually done, such as going to the physical therapist, altering their medication, and any other action the healthcare provider (HCP) may have recommended. The two studies are still collecting data, so the response rate remains to be seen with those surveys and she is hoping that it is not too biased to just the people who followed through being the ones who answer the survey. The hope is that this will help get an idea to some extent of who actually did something to prevent falls. Not much has been done to assess groups such as people who have

Alzheimer's or homebound individuals, which is one reason they wanted to incorporate disproportionately affected populations throughout the research priorities to try to start having a focus on those groups also. Sometimes studies enroll people who are easier to get.

Regarding the mention of messaging and figuring out what the older population knows and believes, **Dr. Liller** suggested that it also would be important to speak with the caregivers of these individuals. She asked whether any thought had been given to using social marketing campaigns for messaging, and whether they had connected with the Prevention Research Centers (PRCs) that CDC also funds. While a lot of this is related to the environment and accessibility, much also is about messaging.

Dr. Bergen responded that in the past year, their team along with other teams and the Injury Center launched the *Still Going Strong* campaign, which takes a positive approach to communicating to older adults that they can remain active as they age while preventing injuries. The injuries this campaign focuses on are falls, transportation safety, and TBI. The hope is to expand that to other injuries in the next year. Because of limited funding, 4 states were targeted to begin with, so the campaign has not been disseminated as widely as they would like. However, it seems to have been very successful in reaching people. While Dr. Bergen was not sure whether the contractor is specifically taking a social marketing approach, there is an upcoming communication campaign and the Injury Center is in a good position to point out that theory-based approaches should be used.

Dr. Greenspan recalled that earlier someone mentioned the cost-effectiveness of some of the interventions and she wondered whether the Injury Center needs to be taking some broader approaches. Is tai-chi acceptable to all under-served populations? A lot of times there is a cost associated with tai-chi. Is that problematic for some populations? The same thing with physical therapy. Is it always covered in Medicare/Medicaid and how does that translate into long-term effects? It would be beneficial to have BSC thoughts about NCIPC's community-based approaches to prevention and how they should be thinking about them, given issues of health disparities.

In terms of performing economic evaluations, **Dr. Pacula** asked whether the goal was to see the economic benefit of how a program is working in the current structure or the way it could be operating. Some community centers offer free classes to adults when they benefit health. That does not mean that the resources are free. It is just an alternative way of funding this through healthcare systems and community interventions. What is the economic gain of using these alternative ways to accomplish the same goals? Fundamentally at the heart of most economic evaluations is trying to understand the best way to allocate resources. Doing this in a manner that allows for understanding of equity and impact given different funding mechanisms is important.

Dr. Floyd indicated that they relied heavily on tai-chi as a pillar of their program locally, which has been highly successful with great results. In terms of access, they relied on a diversity of programs such as the local YMCA, where there was a cost. Local health departments and two other organizations built other programs that were available as well. In terms of the diversity of those programs and helping reduce the costs, he never once heard about cost being an issue. What was an issue with tai-chi and an area that needs to be considered in under-served populations that has not been getting a lot of press is rural areas. The area they expanded this to was 6 or 7 counties in South Central New York, with considerable rural areas. It was a lot harder to get Tai-chi underway in rural areas due to distance and less resources. That is

another area that needs further consideration in terms of expanding the scope of these programs.

Dr. Bonomi asked whether there is any research around disparities and the way social media outreach works with older populations.

Dr. Floyd responded that social media access does have an impact in terms of this. For instance, there are still considerable rural areas in New York State that do not have adequate connectivity yet. That does limit the use of everything from telemedicine to recommendations to stream tai-chi classes when they were not operating in-person during COVID-19.

Dr. Pacula added that the need for interventions like tai-chi in rural areas differs from urban areas depending upon the extent to which people are engaged in more walking or other activities that will compensate for some of the risks. Of course, these are all age-dependent factors. As Dr. Kaplan was raising, the general community environment that is set up to enable natural prevention through other activities differs in urban and rural settings. Consideration must be given to unique communities.

Dr. Kaplan said he was uncomfortable with the conversation about tai-chi. While it is essential and has its place, he thought they were losing sight of the fact that there are far too many urban areas in the US where there are no sidewalks, older adults have to walk blocks to cross the street, et cetera. There are his references and the references to the context in which injuries happen. Anything that smacks of individual deficit concerns him. Many things that are more upstream can be done that need to be addressed. Supposed they will simply look at the downstream and focus almost exclusively on individual deficits. In this case, they will be missing something pretty big in terms of long-term prevention and doing something to mitigate the structural problems many older citizens face today.

Dr. Bonomi asked Dr. Kaplan, as they contemplate equity issues, to share his thoughts on what the Injury Center could consider in terms of upstream approaches that move away from individual more structural approaches.

Dr. Kaplan said that perhaps because he had been in Madrid for a couple of weeks, his thinking had changed. He spends a lot of time walking throughout the city and seeing older couples move around freely and safely. He also has been concerned throughout his career about medicalizing or individualizing a social problem. Late life injuries are inherently a social problem and need to be treated as such, which will have an impact on the issue of equity. In his opinion, they need to be pushing things upstream. That needs to be part of the strategic approach to health equity.

Dr. Ondersma observed that in other areas there is a huge disparity between the proportions of people who take advantage of available services and the need for that—even when they are free, handy, accessible, and easy. Programs like that are fantastic for those who participate in them, but do not necessarily penetrate a high proportion of those in need. Echoing Dr. Kaplan's comments to some extent, the reengineering of social accessibility and social norms could be an important way to think about going forward. He said that he did not mean this to be prescriptive, recognizing that it is not simple to take ideas from elsewhere and bring them here. In terms of the European context, traveling through Scandinavia where there is a norm of hiking—everybody hikes, everybody goes out, and they use ski poles a lot. It is normal to have a hiking stick. Drove of older adults are walking around downtown areas in Sweden and Norway with a couple of ski poles and it is fantastic. They are out, they are safe, and it does not

feel like they are an old, slow person with a walker and the associated stigma. Those sorts of norms and accessibility make a big difference. A lot of things can be done from a public health perspective that individual programs cannot achieve. Even though he absolutely supports the existence and availability of those kinds of programs, their penetration is often limited.

Dr. Bonomi asked Drs. Bergen and Greenspan to speak to whether some of the social norms and structural elements are being considered within the Injury Center, what ways they perceive things to be pivoted as they think about the greater focus on equity.

Dr. Bergen replied that currently, they are focused on understanding older adult and caregiver attitudes toward falls. They have found that one common belief is that these falls are just part of aging and cannot be prevented, so they are trying to focus on the things people can do to their environment and to build their strength and balance, and give them messages that these falls are preventable and do not have to happen. They are making a start with that message first, but are hoping as they do more in that area, they will be able to identify which populations of older adults they might not be reaching with their messages and then tailor them to reach those audiences.

Dr. Bonomi noted that having recently moved to Colorado from the Midwest and having spent 12 years in Seattle, there are different norms around exercise and what is expected as people age. Being close to Boulder, Colorado, there is more of the mentality of what Drs. Ondersma and Kaplan described, but not necessarily uniformly. They have to determine where the pockets are within society where an impact can be made.

Dr. Kaplan said that during the years that he has been on the BSC, he recalled a couple of times that there had been some type of collaboration with their European counterparts. Public health agencies need to start collaborating on issues such as what constitutes a healthy city, what type of city would be best for an aging population, et cetera. US transportation systems are awful compared to transportation systems in Europe. There is probably more that can be learned from or done in collaboration with European colleagues.

Dr. Bonomi asked Drs. Greenspan and Bergen whether NCIPC could interface with European colleagues and if this could be a point of potential intersection in the coming months or years.

Dr. Bergen recalled that there had been some engagement in the past with European colleagues on older adult falls. They have not engaged as much recently, but that is an idea to pursue. They are trying to stay apprised of the World Health Organization's (WHO's) work on older adult falls.

Dr. Compton said that the idea of learning from international research and public health examples is part-and-parcel of NIH-supported research when they do not have good examples in the US. That is a key reason for conducting international studies. He cautioned them with their zeal to focus on Europe, partly because of their esteemed colleague's temporary residence in Spain, he hoped that they also would consider examples from Japan, the Far East, and other parts of the globe that have aging populations and may have some interesting and important examples.

Dr. Greenspan thanked everyone for these great thoughts and agreed that it behooved them to look more upstream. There is certainly a rationale to continue with existing interventions as people lose their balance and start declining, but the more that can be done environmentally, the better and the fewer falls that will likely occur. Another area for collaboration is with partners in the disability arena. They have taken up the mantle for more universal environmental-friendly areas. This is something that NCIPC can do even internally within CDC.

Dr. Rich found the conversation to be very rich in terms of structural issues and norms. The way he thinks about it is that the structure is shaped in some ways. One can try to change the norms through social media and other ways, but the realities of the structural issues must change as well because they are very much related and intertwined. It is important to continue to conduct research that addresses the complexity of intersectionality in terms of race, place, and socioeconomic status (SES) at the same time. This is critical because thinking about race alone often will lead to the creation of somewhat monolithic categories. For instance, faith-based efforts in communities of color may be an over-generalization in terms of how to make impacts. More consideration must be given to how specifically those relate to place.

Dr. Liller emphasized we must not forget about access and how that interacts with reimbursement. From her personal experience with her mother who had Medicare and other resources, it was still extremely difficult to get her supplies as she aged that would have been helpful for fall prevention. Her mother actually did have a fall in the home and even though she tried to get assistance through Medicare and other sources, tried, she ended up getting most of what she needed from hospice. While it may be out of the purview of the Injury Center, access is critical.

Diversity, Equity, Belonging, Inclusion, and Accessibility (DEBIA) Activities

Overview

Derrick Gervin, PhD, MSW
Acting Deputy Director
National Center for Injury Prevention and Control
Centers for Disease Control and Prevention

Dr. Gervin reminded everyone that during the last BSC meeting he was acting as the Extramural Research Program Operations (ERPO) Director and chairing the Diversity, Equity, and Inclusion WG. He emphasized that they were excited to share updates and progress made in these areas to advance the Injury Center's commitment to DEBIA. From the beginning, they felt that it was of critical importance that NCIPC leadership be involved in all aspects of this work, but that it also was important that this not be a top-down process such that staff would have an opportunity to provide input throughout the process and lead phases of this work. They feel like they struck a good balance of involvement across all staffing levels at this point. Over the next few hours, a nice cross-section of staff would be presenting on the strategy development process and the scientific and extramural research across the center.

Before delving into those presentations, Dr. Gervin briefly mentioned some of the related activities being done in the Injury Center such as the development of guidance to ensure diverse hiring panels, as well as the ongoing discussions with agency officials to include diversity elements in their annual performance plans. Most recently, the current cohort of the Rising Leaders Program began exploring how to improve workplace meetings on DEBIA. There have been a number of trainings and course offerings on implicit biases, addressing inequities

in the workplace, accessibility, and empathy. All of these activities support NCIPC's focus on workplace, workforce, and the scientific and programmatic work of the Injury Center. While the past 2 years have been particularly busy, they wanted to begin the day's discussion with a high-level recap of where they have been as it relates to DEBIA activities. Well before 2020, NCIPC's Domestic Violence Prevention Enhancement and Leadership Through Alliances (DELTA), Rape Prevention and Education (RPE), and Essentials recipients were discussing and addressing equity issues. As a reminder, the DELTA and RPE programs were funded in the mid-1990s. Additionally, the Committee on Diversity (COD) was established in 2013 to address inequities and facilitate long-term change in the Injury Center. In terms of the defining milestones for DEBIA over the past 20 months, the DEI WG was established in September 2020 as a short-term group composed of staff from across the Injury Center charged with jump-starting the Injury Center's Climate Assessment. Following the Climate Assessment, NCIPC began efforts put more permanent structures in place, such as dedicated health equity positions and development of a center-wide strategic plan.

To anchor the conversation about looking ahead, Dr. Gervin provided more details about the DEBIA Climate Assessment. The goal of the Climate Assessment was to ensure that they heard directly and expansively from the Injury Center about its strengths, challenges, and opportunities. In addition to feedback received during all-hands, telework talks, and other engagements, NCIPC engaged Path Forward Consulting to conduct a 3-month assessment to inform steps moving forward. All NCIPC FTEs were eligible to participate in this 79-question survey and focus groups, while individual interviews focused on obtaining specific stakeholder perspectives from across the Injury Center and agency. These groups were used to guide elements of the assessment and recommendations development. Participation in the survey was very strong, with a response rate of approximately 75%.

In terms of strategy development, it took center-wide effort to get to this point. This included significant leadership and staff engagement. A strategy was needed that could be embraced by everyone across the Injury Center. Dr. Gervin offered special gratitude to Dr. Natasha Underwood, Dr. Loretta Jackson-Brown, Ms. Candace Girod, Ms. Elizabeth Solhtalab, and COD members and leaders past and present. The Injury Center challenged this group to meet the goal of developing a strategic plan before the end of the year, but the larger challenge was that they only had the months of November and December to complete their work. Not only did they meet the challenge, but also they exceeded all expectations and they worked through the holidays to get this work done.

The DEBIA Strategic Plan is now finalized and NCIPC is moving forward with implementing the plan. There are a number of communication materials in development to assist with dissemination of the plan, including but not limited to a webpage, PowerPoint slides, and summary documents. In terms of what is ahead, the plan is to move from detail positions to permanent Injury Center-level positions and to hire positions for all 3 NCIPC divisions. NCIPC will continue to work with the COD and other WGs across the Injury Center to ensure that broad feedback and guidance is obtained from across NCIPC and to hold themselves accountable to the goals that have been established. Sharing these plans with NCIPC's partners and the BSC will help in that regard. Dr. Gervin then called upon Dr. Jackson-Brown and Ms. Girod to provide more details about NCIPC's DEBIA Strategic Plan.

DEBIA Strategic Plan Intent, Vision, Mission, & Guiding Principles

Candace Girod, MPH

**Program Evaluation and Translation Branch Division of Violence Prevention
National Center for Injury Prevention and Control
Centers for Disease Control and Prevention**

Ms. Girod indicated that she is an evaluator in the DVP's Program Branch and the Co-Chair of the DEBIA Strategic Plan Sub-Committee. The Sub-Committee's parent committee is the Injury Center's COD and was formed specifically for drafting the strategic plan. In November 2020, the DEBIA Strategy Sub-Committee was tasked with using the information from the DEBIA assessment to develop the DEBIA Strategic Plan for the Injury Center. The intent of this plan was to describe the goals and objectives needed to achieve progress; guide action-oriented steps, processes, and pathways for implementation; and inform a new set of measures to monitor and evaluate progress. Ms. Girod said she was very humbled to have worked with an amazing group of people from across all functions and levels of the Injury Center. She expressed gratitude to those who contributed an inordinate amount of time and dedication to ensuring that the plan is solid and representative of many perspectives.

Embarking on this work, the DEBIA Strategic Plan Sub-Committee wanted to consider what could be done to change policies and organizational culture to reflect the vision of a diverse workforce, an inclusive workplace, and health equity in all they do to prevent injury and violence in every community. They wanted to root the goals in an understanding of who they want to be, what they want to do, and how they want to do it. They want an NCIPC that is committed to cultivating an inclusive, accessible workplace, where a diverse injury and violence prevention workforce will eliminate health inequities by: 1) addressing the conditions within which people live, learn, work, and play and ensuring safe, stable, nurturing environments so that the default is thriving; 2) building a diverse workforce, inclusive of leadership and staff who are from all genders, sexual orientations, racial and ethnic groups, and abilities because collectively, they can do their best work when there is full participation and a range of life experiences; and 3) creating a workplace where individuals feel safe, that they belong, and that they can be their authentic selves.

In addition to the mission and visions, there were high-level ideas they wanted to convey. First, it was important to highlight the intersectionality of 3 focus areas of the plan. Each section needs the others to be implemented for it to be successful. Second, they wanted to ensure that they are leading with DEBIA-centered principles in every aspect of their operations as well as in engagements with partners and colleagues. Third, they wanted to ensure that the strategic plan is a living document and part of keeping it alive is to regularly evaluate and assess their efforts to ensure that they are moving forward. Fourth, when they say that they want to integrate health equity principles throughout Injury Center activities, they mean that equity is not just one of the strategies that simply can be implemented. Instead, it is about creating a news lens through which to conduct every aspect of NCIPC's work. Fifth, they promote accountability for all staff because they want to hold themselves and each other responsible for accomplishing these goals.

The DEBIA Strategic Plan built upon the accomplishments of the Injury Center WGs, including the COD, the DEI WG, the Race and Violence WG, the Tribal WG, the DOP SDOH WG, and the Diversity WG. Qualitative and quantitative findings were used from the center-wide DEBIA Climate Assessment and recommendations made by Path Forward Consulting. In addition, the DEBIA Strategic Plan Sub-Committee used the recently released *Government-Wide Strategic Plan to Advance Diversity, Equity, Inclusion, and Accessibility in the Federal Workforce*⁴ released in November 2021.

Elements of the DEBIA Strategic Plan

Loretta Jackson-Brown, PhD, RN
Acting Principal Advisor for DEBIA
National Center for Injury Prevention and Control
Centers for Disease Control and Prevention

Dr. Jackson-Brown discussed the goals of the 3 focus areas of the DEBIA Strategic Plan: Workforce, Workplace, Work.

1. For the *workforce element*, the intent is to build a workforce comprised of leadership and staff who are from diverse racial/ethnic groups, and inclusive of multigenerational individuals, LGBTQIA+ persons, and persons with disabilities. The associated goals are to:
 - a) Attract and hire a workforce reflecting the full diversity of the nation that includes assessing and disseminating findings on the diversity within NCIPC's workforce across GS levels. Assess current recruitment practices in addressing barriers to accessibility and equitable entry to the NCIPC workforce, including non-FTE staff. Ensure that recruitment and hiring materials are inclusive, accessible, and convey NCIPC's commitment to equitable hiring practices.
 - b) Mentor, develop, retain, and engage the full talent of a diverse workforce through the expansion of the Injury Center's existing professional mentorship programs to better accommodate new hires and encompass the varied experience of under-represented groups, develop and implement DEBIA center retention strategies, and processes throughout the center that is informed by workforce turnover and continuous improvement data and conduct comprehensive off-boarding and succession planning aimed at sustaining diversity.
 - c) Provide equitable access for professional development, which will be supported by integrating and assessable first and equity approach into career advancement and development opportunities to support a diverse workforce.
2. For the *workplace element*, the intent is to create an inclusive and accessible workplace where individuals feel safe, that they belong, and that they can be their authentic selves. The associated goals are to:
 - a) Ensure leaders and staff at all levels participate in, and promote an equitable and accessible workplace that is emotionally, physically, and psychologically safe for all who work in the Center.
 - b) Foster a workplace culture of trustworthiness and accountability to increase collaboration, inclusion, and belonging.

⁴ <https://www.whitehouse.gov/wp-content/uploads/2021/11/Strategic-Plan-to-Advance-Diversity-Equity-Inclusion-and-Accessibility-in-the-Federal-Workforce-11.23.21.pdf>

- c) Empower staff to bring their authentic selves to work so that each person can openly share diverse perspectives and ideas to strengthen the Center's work, workforce, and workplace. The workplace objectives that support these goals will include implementing a center-wide climate assessment, DEBIA training and hands-on learning opportunities for all staff, workplace culture agreement and civility policy, creating an innovation incubator where staff can bring forward new ideas, and innovative solutions related to workforce, workplace, and work in the Injury Center, and developing and reinforcing multiple reporting mechanisms for employees to report unsafe behaviors, disrespectful language, harassment, discrimination, and other unwanted behaviors.
3. For the *work element*, the intent is to embed health equity and a focus on the conditions of communities and spaces where we live, play, work, and learn into all of the Center's scientific and programmatic work. The associated goals are to:
 - a) Establish and strengthen internal mechanisms for implementing and evaluating how health equity is incorporated into NCIPC's work. One of the goals under this objective is the need to develop an action plan in conjunction with external partners to charter the path forward for the Injury Center's work. Additional goals emphasize the needs to assess current policies and practices and also increase staff knowledge and skills around health equity.
 - b) Prioritize health equity as part of NCIPC's funding opportunities. This work is ongoing and can be strengthened by including language emphasizing community-led strategies to address structural racism and other root causes of health inequities. Additionally, there is a need to incorporate accessibility practices into all of NCIPC's funding opportunities.
 - c) Build and disseminate the evidence-base to advance health equity. This goal is where all of NCIPC's functional areas can really contribute to advancing health equity. Some objectives involve engaging communities disproportionately impacted by inequities, expanding surveillance systems to include new SDOH measures, developing and implementing evaluation strategies with a focus on intersection approaches and focusing on communication, and ensuring that NCIPC products internally and externally are unbiased and avoid perpetuated systemic, social, and health inequities.
 - d) Cultivate and strengthen reciprocal partnerships to achieve health equity. Objectives to achieve this goal include developing principles for equity-focused partnerships, evaluating current partnerships to make sure they address SDOH and building new partnerships as needed.

In terms of the communication element, efforts to increase awareness of the DEBIA Strategic Plan among Injury Center staff have included standing up an internal intranet site to house the plan, showcase the staff and their lived experiences, and provide staff with DEBIA and health equity resources. A PowerPoint slide set was developed that managers and supervisors can use to share the plan with their staff. As part of NCIPC's onboarding process, new staff will be introduced to the NCIPC DEBIA Strategic Plan during orientation. NCIPC continues to host Zoom meetings and disseminate email updates to keep staff informed of progress.

For implementation, in alignment with CDC's DEIA Coordinating Council, every CIO will establish a DEIA Council. NCIPC has established 2 councils: 1) DEBIA Council, which is responsible for the workforce and workplace goals and objectives and which will be chaired by the Injury Center's Acting DEBIA Advisor; and 2) Health Equity Council, which is responsible for goals and objectives related to the Injury Center's programmatic and scientific work and will be chaired by the Injury Center's Health Equity Officer. Each Council will be comprised of Injury

Center staff who have DEBIA and Health Equity responsibilities in their functional roles, as well as staff from throughout the Injury Center from diverse and varied backgrounds.

With regard to next steps, the Health Equity Council convened its first meeting in March 2022 and will be developing a workplan to guide implementation of the Strategic Plan related to work goals and objectives. As the Acting DEBIA Advisor, Dr. Jackson-Brown is working with the Center's COD to transition it to the new DEBIA Council in accordance with CDC guidance. The goal is to identify officers and members identified by the end of April.

In closing, Dr. Jackson-Brown presented the following questions for consideration and welcomed the NCIPC BSC's feedback to help the Injury Center think through its efforts to strengthen diversity, equity, belonging, inclusion, and accessibility in its workforce and workplace and health equity in its work:

- Are there aspects of DEBIA that the Strategic Plan has overlooked?
- What should we consider as we move into the implementation phase of this work?
- How do you see DEBIA and health equity work evolving over time?

Discussion Points

Dr. Pacula applauded the compressive process and consideration of the issues. As she was listening she was trying to think about what might be missing in this plan, and the only concern she had was with respect to access to some of this information. For example, a lot of the information in terms of communication and implementation is being made available on the internet, so some people may not have access to that information due to technology issues and/or hearing/sight issues. She emphasized the importance of ensuring that certain groups who might not be represented would still be able to find out that they have an opportunity.

Dr. Jackson-Brown pointed out that much of the communication at this point is internal on the intranet site. There are plans to build out some public-facing information related to this. Given that a core piece of the DEBIA plan is accessibility, there are several goals and objectives related to accessibility first within the WG. They also have members who represent that particular topic area and there will be core individuals on the team to help ensure that such accommodations are being provided.

Dr. Greenspan indicated that within the extramural research program, NCIPC has begun an exciting research initiative to increase the representation in academics and young researchers and are beginning to work toward providing other mentorship opportunities, such as connecting researchers in Minority Serving Institutions (MSIs) with other majority institutions and/or more seasoned researchers.

Dr. Chou expressed his excitement about this plan. Related to the BSC's role in vetting research, there was discussion during previous meetings about whether there would be efforts to ensure that researchers who may not come from one of the traditional high-power institutions and/or may represent traditionally under-represented populations may be prioritized for funding. He did not recall seeing that mentioned in the description of the Strategic Plan. In addition, he did not think the BSC had explicitly assessed/graded proposals on equity aspects and wondered whether the BSC would be moving toward doing so.

Dr. Gervin responded that this probably falls within the Injury Center's programmatic and scientific work, and that the BSC would hear more about those efforts later in the day from Dr. Wright who would be sharing what NCIPC has been doing in that space.

Dr. Bonomi added that in terms of the issues of granting and ensuring a pipeline of diverse intersectional scholars and sitting on some of the Injury Center peer review panels, she emphasized the importance of recruiting and cultivating diverse post-docs and doctoral researchers and ensuring that those institutions recruiting diverse scholars to study with them have the mentoring systems in place to ensure a culture of inclusion and equity processes for the success of diverse scholars. This is a high priority that should be a part of Injury Center applications.

Dr. Liller inquired about what the protocol would be if someone feels that there has been a violation of the plan.

Dr. Jackson-Brown responded that they will incorporate the BSC's thoughts as they work through the implementation component. They have developed the goals and objectives, and the next steps involve implementation of the plan and working through the full continuous quality improvement (CQI) circle.

Dr. Maholmes said she was delighted to see "belonging" as part of this plan. She asked how this would be evaluated in terms of how they would operationalize that goal and how they would know when they have achieved it.

Dr. Jackson-Brown explained that based on their discussion for developing the Strategic Plan, they realized that much of that will be captured in the annual Climate Assessment upon which NCIPC will be building from the previous assessment and in alignment with CDC's Strategic Plan as well. Dr. Gervin spoke of rising leaders and currently working on ways to conduct listening sessions in forums, and as she mentioned, innovative incubators so that staff will be able to bring forth ideas. These are some of the ways they believe they will be able to assess how well staff feel connected and that they are bringing their authentic selves to the workplace.

Dr. Floyd expressed his hope that there will be a strong emphasis on public education as NCIPC continues to develop the DEBIA Strategic Plan. There is a lack of understanding of the impact of healthcare inequity on the performance of the healthcare system and the health of the population as a whole. That needs to be publicized in a way that it reaches the general public as to the impact that this is having. In addition, there are many structural issues behind health equity. For instance, how do you get PCPs to relocate to Northeastern Montana where there are large areas of under-served populations? Consideration must be given to how to address the structural barriers and imbalances that the healthcare system is creating as well.

Dr. Gervin indicated that addressing some of the structural conditions is a key focus of NCIPC's work, which is reflected in many of the strategies.

Ms. Girod added that the third section of the plan pertaining to work seeks to address structural issues and ensure that the Injury Center's work continues to evolve terms of addressing structural issues. One element of the plan is to create an Equity Action Plan that will elucidate all of the places where the Injury Center can address structural issues to a greater extent.

Dr. Bonomi commended the comprehensive work that has been done on this so far. She loves the idea of leading with intersectionality as one of the guiding principles, which is an area that

often tends to be missing from DEI plans she has seen in other organizations. As it intersects with the workforce, workplace, and work, she asked how the Injury Center is envisioning the intersectionality component in terms of hiring a diverse workforce. For persons with intersectional identities, the sense of belonging is very important. She also loved the idea about providing ongoing skills-building opportunities for members of the organization around unconscious bias, intersectionality, et cetera. Knowing that this is a lifetime practice for those who are in the space of equity and inclusion, to continue to develop capacity and skills in the area, to be proficient in interfacing with individuals across a range of intersectional identities, and how this is integrated into their research, she wondered how NCIPC will ensure ongoing exposure to training, what that will look like, and whether it will be required of members of the organization.

Dr. Jackson-Brown said that one key thing they are doing is working with employee resource groups that represent particular populations. NCIPC has expanded some of their work in outreach to Latinx and Hispanic groups, the agency has done some outreach with Historically Black Colleges and Universities (HBCUs), and they also are working internally with their LGBTQ+ groups. Also, an effort is being made to ensure a diverse make-up of NCIPC's own internal DEBIA Council membership. The DEBIA Council will help inform what is developed; what will be used for outreach; and to ensure internal accountability. In terms of how NCIPC will ensure ongoing exposure to training, they are guided by the federal and CDC DEIA strategic plans. Within each of those plans are some of the key elements Dr. Bonomi mentioned. There will be some required trainings, such as CDC's required training for managers and supervisors over the last year. There also will be some required trainings particular to DEBIA for those who will serve on the Councils. Within the strategic plan, they will have to create some trainings for those who are in unique roles. Someone reviewing curricula vitae (CVs) and hiring may need different training from someone who is reviewing funding opportunity applications or compared to someone who is onboarding. They also want people to build upon mandatory trainings. CDC has brought on and collaborated with other outside entities. For instance, there is a CDC-Cornell DEI course that Dr. Jackson-Brown was able to take. The courses vary in how they are delivered, given that people take in and receive information in different ways.

Dr. Baldwin added that there is an ecosystem of the DEBIA work occurring at the agency, center, and division levels. There are active training opportunities being built out in the context of the division and office infrastructure to complement what the Injury Center and the agency are doing. Specific examples within the DOP are the establishment of a book club, development of a media resource board where DEBIA information can be shared with one another across a wide variety of media channels, and creation of unconscious bias training that is forthcoming.

In terms of some of the NCIPC priorities and the way grants are reviewed, **Dr. Bonomi** pointed out that exposing grant reviewers to some of the trainings would be extremely helpful, especially in thinking about how to further elevate the priorities of health equity in research.

Health Equity

Health Equity at CDC and NCIPC

Natasha Underwood, PhD, MPH
Acting Health Equity Officer, Division of Overdose Prevention
National Center for Injury Prevention and Control
Centers for Disease Control and Prevention

Dr. Underwood shared some of the updates on the advancements of health equity science at the agency-level and within the Injury Center. In Fall 2021, CDC launched its first agency-wide health equity science and intervention strategy to address longstanding health disparities and inequities across a wide range of population groups and medically-underserved social environments. This strategy is framed around 4 pillars: 1) Science; 2) Interventions, including programs, policies, systems change, environmental justice; 3) Partnerships; and 4) Public Health Infrastructure. The strategy is titled CORE, an acronym that stands for:

C = Cultivate comprehensive health equity science
O = Optimize interventions
R = Reinforce and expand robust partnerships
E = Enhance capacity and workforce diversity and inclusion

When fully implemented, this bold and transformative approach will contribute to greater investments in under-served communities; enhancements to data collection; and a more diverse, equitable, inclusive, and accessible public health workforce. In addition, CORE will examine drivers of health inequities, build collaborations with multifactorial partners to test if scaled interventions and policies address those drivers, and reinforce the essential role of community engagement. Across CDC, there are a total of 159 catalytic goals for CORE. NCIPC represents 10 of those goals, with 43 milestones that contribute to achieving the goals.

Dr. Underwood shared an image to illustrate how the many related pieces of CDC's current work, including the work on the COVID-19 pandemic response effort, data modernization effort, SDOH, and DEIA, all come together within the CORE Framework. Thus far, CORE has worked on several programmatic products to help advance health equity across the agency. Briefly, the first is guidance on how to embed health equity into non-research Notices of Funding Opportunity (NOFOs) through changes in the actual template that programs must complete. This guidance document also will provide sample language that programs can use when drafting NOFOs that help them embed health equity into their programs. There is a newly released health equity glossary for the agency that establishes definitions for health equity terms and recommendations for non-stigmatizing language. This glossary is currently being used widely across the agency.

Returning to the 4 CORE pillars, Dr. Underwood explained how the 43 NCIPC milestones align with the 4 CORE health pillars. A majority of the milestones address the O in CORE, which is optimizing programs. Additionally, in NCIPC, there are no goals related to the R in CORE, which is reinforcing and expanding partnerships. In March, NCIPC provided a status update on its progress on the CORE milestones to agency leadership. More than 60% of the milestones are on track, 27% are completed, and 10% have no progress or are not started. Looking toward the future of advancing health equity within NCIPC, efforts continue to advance NCIPC's CORE goals and milestones to make transformative progress and change. Additionally, NCIPC's divisions continue to reassess and evaluate their research priorities. As they do this, it is important to have health equity as a central component that is embedded in driving the future

direction of the Injury Center's research. Increasing staff knowledge and skills around health equity is critically important as well. It is a key part of the NCIPC DEBIA Strategic Plan that was described earlier, and the Injury Center is looking forward to growth in this area for all of its staff. NCIPC is continuing to give life to the DEBIA Strategic Plan by moving into the implementation planning phase. One of the important parts of the DEBIA Strategic Plan is the need for an action plan that can be developed in combination with the Injury Center's partners to guide future work and address upstream factors.

In closing, Dr. Underwood noted that the remaining presentations for this session would provide more information on the CORE health equity goals and specific activities in the Office of Science (OS) and in the divisions. For each of the upcoming speakers, there are a number of health equity initiatives that are occurring throughout the divisions and within the OS for which the presenters would be sharing high-level overviews. NCIPC wants to ensure that health equity continues to be a focus during the BSC meetings, so she invited BSC members to provide input on topics about which they would like to hear more details during future meetings. A large amount of health equity work is underway within the Injury Center and they want to make sure that they continue to centralize these discussions and conversations.

Health Equity Strategy: Division of Overdose Prevention

Lara (Lace) DePadilla, PhD
Senior Health Scientist, Division of Overdose Prevention
National Center for Injury Prevention and Control
Centers for Disease Control and Prevention

Dr. DePadilla presented a snapshot of some of DOP's key health equity goals and activities. She described DOP's core health equity strategy goals and milestones; efforts to more explicitly infuse health equity into DOP's research priorities, including examples from their current draft of those updates; and discussed other DOP health equity-focused accomplishments and activities. DOP's research goals to be completed by September 2024 are to: 1) invest at least \$30 million in extramural research that incorporates a health equity lens; and 2) develop a plan to systematically integrate health equity into all extramural research funding opportunities. DOP's non-research goals by September 2027 are to: 1) collect, or improve efforts to collect, data on SDOH and data on populations disproportionately affected by substance use and overdose; and 2) implement overdose prevention strategy(ies) that address key drivers of health inequities and social determinants of health.

In 2021, DOP developed 4 NOFOs that included language that defined populations who may be disproportionately affected by substance use and overdose. They are working on guidance to outline critical standards for NOFO development to build the evidence base along with expectations for translation of research that includes a focus on health equity. Also included in the guidance will be considerations for peer reviewers that will emphasize the importance of a health equity lens or a focus on populations disproportionately affected by substance use and overdose. DOP's non-research milestones include providing guidance for both applicants and objective review panels to orient them to the constructs that constitute SDOH and health equity within the context of substance use and overdose surveillance and prevention. They also hope to collaborate with DVP, DIP, and others throughout the Injury Center on identification of indicators of SDOH and health equity that can be feasibly monitored by funding recipients.

The original problem description for the original 2020 Overdose Prevention Research Priorities was as follows:

Problem Description

Fundamental to CDC’s Injury Center overdose prevention efforts are rigorous applied research and evaluation projects that:

- ❑ Address key drivers of health inequities (e.g., through focusing on better understanding of social determinants of health and people experiencing a disproportionate burden of substance use disorders and overdose and developing or evaluating tailored and culturally appropriate prevention interventions).
- ❑ Identify risk and protective factors at the societal, community, family, and individual levels that contribute to or protect against overdose, including adverse childhood experiences (ACEs), another Injury Center priority.
- ❑ Evaluate the impacts of policies, programs, or practices designed to reduce overdose or antecedents to overdose, with a focus on health system and public health-public safety innovations.
- ❑ Identify barriers and strategies to translate and scale-up effective interventions to different communities, populations, or settings.

As mentioned in the beginning of the presentation, DOP has sought to better infuse health equity into its research priorities. Members of the DOP SDOH WG collaborated on reviewing the priorities and better integrating health equity language to ensure inclusivity. An example of the outcome of this process is on the front page of the document where DOP defines what is fundamental to addressing overdose prevention. In the newly drafted text, the first bullet now reflects the importance of addressing key drivers of health inequity. The specific 2020 overdose prevention research priorities included the identification of risk and protective factors for drug overdose and the evaluation of these interventions; public health and public safety collaborations; laws, regulations, and policies at the federal, state, and local levels; and innovative prevention strategies designed to prevent overdose.

The priorities themselves are not changing. In order to better include health equity considerations into these priorities, DOP edited the brief descriptive paragraphs for each priority, as well as the key research questions that are included with each priority. Dr. DePadilla shared examples of the draft edits that have been made to the brief descriptive paragraphs for 3 of the priorities, with the edits shown in purple:

Risk and Protective Factors	Health System Interventions	Federal, State, Local Laws, Regulations, and Policies
<p>Addressing the drug overdose epidemic will require a better understanding of the unique risk and protective factors . . . Also, important to consider is how long-standing structural barriers, systemic inequities, including racism, introduce additional or worsen other risk factors. Similarly, community strengths, assets, and solutions are key protective factors to explore.</p>	<p>...linkage of patients and families to additional health and social services that are needed to improve health outcomes. It is also important to consider how access to and provision of care differs among diverse population groups and options for adapting strategies to address systemic inequities among people experiencing a disproportionate burden of substance use disorders and overdose through institutional changes and culturally appropriate interventions.</p>	<p>Additionally, it is important to assess potential unintended consequences of such policies, including whether these policies worsen existing health disparities and systemic inequities.</p>

In the 3 examples, the importance of longstanding structural barriers and how access to and provision of care differ among diverse population groups are now highlighted. Additionally, the sentence describing the potential unintended consequences of policies includes a clause to draw attention to the possibility of a policy worsening existing health disparities and systemic inequity. These are just a few examples of the draft updates. Draft updates were made to the brief descriptive paragraphs and the key research questions for all 5 priorities to ensure that health equity is better addressed throughout the document.

In terms of a few other DOP health equity accomplishments and activities, the National Association of County and City Health Officials (NACCHO) conducted an environmental scan in 2020 to identify current knowledge and gaps in research and practice pertaining to the root causes of health inequities and drug overdoses. Findings concluded that gaps still remain in the research for social inequities, which include populations such as LGBTQ, immigrant youth, and Hispanic populations. Studies found that policy rather than other interventions could have the largest impact of changing institutional factors such as mental health and substance use treatment parity. Finally, research on social and demographic factors often occurs in silos. The DOP SDOH WG is currently creating a Health Equity Style Guide that includes terms that are specific to overdose prevention and surveillance. The guide is being written to create a consistent set of standards for writing, formatting, and designing documents and communication products for overdose-related work and also will include general health equity terms that were compiled by a group of SMEs from the agency-wide Definitions WG.

In collaboration with DVP, the SDOH WG conducted a review of drug overdose-related NOFOs and research grants supported by the DOP from 2015-2019. This will inform efforts to consistently and systematically integrate health equity concepts into future research and programming funding opportunities. Key takeaways included encouraging recipients to incorporate frameworks such as the Social-Ecological Model (SEM) or the World Health Organization Conceptual Framework on the Social Determinants of Health; and addressing health equity; addressing trauma, including intergenerational trauma due to racism and discrimination; and fostering resiliency.

Division of Injury Prevention CORE Health Equity Strategy Goals

**Mr. Tochukwu Igbo, Special Advisor
Strategy Coordination Unit
Division of Injury Prevention
National Center for Injury Prevention and Control
Centers for Disease Control and Prevention**

Mr. Igbo provided an update on DIP's CORE health equity goals. The DIP commenced work to identify transformative health equity goals that could be accomplished. They engaged in a deliberative process in which the key criteria were to identify goals that are specific in terms of addressing a population or articulating an action to be achieved, measurable, achievable, realistic, doable, align with DIP's broader goals, and timebound. He briefly described each of DIP's 3 goals in the context of the relative branches:

Applied Sciences Branch

By December 2026, Child Death Review Teams in 20% of states will systematically report the circumstances of drowning deaths to help identify factors that may be driving racial and ethnic disparities in child drowning deaths.

- DIP will track the following indicators:
 - Proportion of death investigators trained in using a new drowning death scene investigation form
 - Proportion of Child Death Review Teams systematically reporting on drowning deaths using the new form
 - Proportion of the total number of drowning death scene investigation forms submitted that have complete data on the circumstances pertaining to drowning by race and ethnicity

- Select Key Milestones By July 31, 2022
 - Identify health equity data gaps in fatal drownings that occur among youth ages <17 years
 - Work with partners to create a new standardized death scene investigation form for drowning deaths
 - Create associated educational materials and a presentation to be included in the Death Scene Investigation Learning Series

Data Analytics Branch

By September 30, 2023, 100% of Web-based Injury Statistics Query and Reporting System (WISQARS) users will have access to data on multiple social determinants of health and associated indices in conjunction with injury data and tools for using these data.

- DIP will track the following indicators:
 - Number of social determinants of health (SDoH) datasets available at the county level that can be used to determine the relationship between SDoH and injury outcomes for various disproportionately affected populations
 - Development of a communications plan to promote the health equity module and drive at least 10% of WISQARS users to the new module
 - Number of external partners engaged in the development and dissemination of the health equity module

- Select Key Milestones By July 31, 2022:
 - Complete environmental scan to identify potential data sources based on availability, methodological considerations, and geographies
 - In collaboration with DVP and DOP, determine which SDoH measures to include in WISQARS

Program Implementation and Evaluation Branch

By 2026, 100 % of DIP funded programs serving AI/AN populations will implement indigenous evaluation approaches to advance injury and violence prevention efforts and programs.

- ❑ DIP will track the following indicators:
 - Number of DIP Notice of Funding Opportunities adopting standard language requiring evaluation approaches that have been demonstrated to be collaborative and culturally responsive in all DIP funding serving AI/AN populations
 - Number of AI/AN recipients driven prevention programs implemented and evaluated by DIP recipients

- ❑ Select Key Milestones:
 - By January 2022, develop a Tribal Listening Session report to understand the needs of Tribal partners and inform funding priorities for AI/AN populations (COMPLETED)
 - By September 2022, complete Tribal Evaluability Assessment

Division of Violence Prevention Health Equity Activities

Marilyn Metzler, RN, MPH

Senior Subject Matter Expert

Health Equity Contractor: TJFACT Business Consulting

Division of Violence Prevention

National Center for Injury Prevention and Control

Centers for Disease Control and Prevention

Ms. Metzler noted that she is a long-term contractor with DVP where she sits in the Office of the Director and supports DVP's efforts to integrate a health equity approach across the division's surveillance, research, practice, policy, and communication activities. She provided an overview of DVP's CORE health equity goals and briefly discussed a selection of other health equity activities, including DVP's use of an important tool to guide much of its work. Many staff and leaders across DVP are leading a broad array of health equity activities, who Ms. Metzler collectively recognized and thanked—even if their work was not represented during this presentation.

DVP's 5-Year Strategic Visions includes 4 guiding principles, which are to: 1) advance economic, gender, and racial equity; 2) address factors that cut across multiple forms of violence; 3) enhance positive relationships and environments; and 4) prioritize efforts that create societal- and community-level impact. Increasingly, their health equity work is centering racism and race equity in the intersections with gender, class, and other socially constructed markers of advantage and disadvantage. This is reflected throughout DVP's work to prevent inequities in risk for violence. Ms. Metzler provided an overview of DVP's 3 CORE health equity goals:

1. Programs & Practice Overarching Goal: By December 2025, 100% of newly funded violence prevention programmatic recipients will incorporate approaches to reduce racial or ethnic inequities in ACEs or other forms of violence.

Select Key Milestones:

- By September 2022, identify prevention strategies with theoretical or empirical evidence for reducing racial/ethnic inequities in violence or key risk factors for violence
- By May 2022, release a new Domestic Violence Prevention Enhancement and Leadership Through Alliances (DELTA) NOFO with a focus on prevention strategies to reduce racial/ethnic inequities in intimate partner violence
- By September 2022, review current annual progress reviews for Preventing Violence Affecting Young Lives (PREVAYL) recipients to assess use of prevention strategies that address racial inequities in violence

DVP will track the following indicators:

- Proportion of awardees implementing strategies to reduce racial or ethnic inequities in ACEs or other forms of violence

2. DVP Research Overarching Goal: By December 2026, support rigorous evaluation of at least 5 innovative programs, policies, or practices for reducing racial or ethnic inequities in risk for ACEs and other forms of violence.

Select Key Milestones:

- By September 2021, fund National Centers of Excellence in Youth Violence Prevention, RO1s/grants, K01 training grants, and research cooperative agreements with focus on reducing racial/ethnic inequities
- By December 2021, release FY22 research NOFOs with focus on reducing inequities and work with ERPO to track awards issued that explicitly focus on the reduction of racial/ethnic inequities in violence
- By September 2022, develop FY23 project concepts for research NOFOs with focus on rigorously evaluating programs, policies and practices to reduce racial/ethnic inequities in violence

DVP will track the following indicators:

- Collaborate with ERPO and grantees to assess the effectiveness of prevention strategies that focus on reducing racial or ethnic inequities in violence outcomes

3. Surveillance Overarching Goal: By December 2024, provide the first data set and summary report linking NVDRS data with social determinants of health (SDH) data to assess drivers of racial and ethnic inequities in violence

Select Key Milestones:

- By May 2022, in collaboration with DIP and DOP, identify a key set of SDH variables for inclusion in routine/annual reporting of violence outcomes
- By August 2022, establish protocols and develop programs for linking NVDRS and SDH variables
- By August 2022, develop tools and training for funded entities to geocode data and begin planning for dissemination

- ❑ DVP will track the following indicators:
 - Release of updated NVDRS Restricted Access Data for use by internal and external researchers that includes the SDH variables
 - Release of the first summary report using the linked data

Ms. Metzler shared a graphic of an important tool that DVP has used for the past several years to guide many of its health equity activities. DVP adapted the WHO Conceptual Framework to highlight the question raised up by Dr. Camara Jones, “How is racism operating here?” This logic model helps to create understanding of the mechanisms and pathways between structural determinants of health inequities and outcomes. DVP’s previous activities have been informed by this framework. For instance, the community violence R01 NOFO includes a primary objective to conduct effectiveness research to evaluate approaches to improve social or structural conditions that contribute to inequities and risks for violence. Also, the team working on surveillance activities was using this framework to identify SDOH and mapping measures across the framework. Other examples where the framework has been used to guide research and non-research activities include policy analyses and the Essentials for Childhood Initiative. DVP would welcome the BSC’s thoughts about continued use of this framework.

A few other select examples of DVP health equity activities include the following, the last 3 of which Ms. Metzler described in more detail:

- ❑ Race & Violence Workgroup health equity/WHO framework trainings
- ❑ Updated ACE’s research priorities, with a focus on health equity
- ❑ Collection of papers on narrative change as strategy to prevent racial/ethnic health inequities, ACEs, and future risk of substance misuse
- ❑ Developed and released Guidance for Addressing Racial and Ethnic Inequities in Risk for Violence in DVP Research
- ❑ Developed a *Vital*signs™ describing increasing firearm homicide and suicide rates and widening inequities
- ❑ Listening sessions with community violence partners and advocates
- ❑ Evaluating policies to prevent incarceration, ACEs & violence RVW structural racism and violence literature scan

Earlier this year, the DVP Office of Policy and Partnerships in collaboration with 6 states conducted a series of listening sessions with community violence prevention partners and advocates, including youth, to understand the perspectives of those with lived experiences and to broaden DVP’s engagement beyond typical partners. A quote from one of the listening sessions reads, “Growing up in the community, communities experience brutal and extreme violence—members adopt a survival mode mentality. Behavior becomes survival and not a choice. Decision makers do not understand the root causes of violence.” In addition to describing the challenging conditions that many communities face, these data reflect the need to better communicate with decision-makers about the structural inequities that increase risk for violence. When participants were asked to imagine what a safe and welcoming community would look like, not surprisingly, they described a community that any one of us would want to live in, raise our families in, live our best lives in. The next steps for this project include a report of compiled findings that is in progress, reconnecting with meeting participants, and engaging DVP leadership in findings from the listening sessions.

In FY2020, CDC funded the Association of State and Territorial Health Officials (ASTHO) to create a database of school-based restorative justice laws and policies enacted and proposed between 2018-2021. The focus was on restorative justice policies and education that reduce the use of punitive school discipline, such as suspension and expulsion, and that aim to keep youth in school through the use of positive behavioral interventions and support systems. School suspensions and expulsions are associated with reduced educational attainment, increased involvement with the Criminal Justice System (CJS), and increased risk for incarceration as an adult. Restorative justice practices have been shown to reduce suspensions, which contribute to the school-to-prison pipeline that disproportionately impacts minority youth and results in multiple negative health outcomes, including increased risk for violence. This focus on school policies that can impact educational attainment and subsequent violence also was informed by the use of the WHO Framework, showing the connection between structural policies and the mechanisms and pathways that drive outcomes. DVP is currently looking to expand the database to include additional years in order to better understand potential impacts on outcomes, including violence, reduced suspensions and expulsions, and educational attainment.

During the 2019 BSC meeting when members of the Racism and Violence WG presented the results of the DVP publication review, BSC members indicated an interest in seeing a review of the literature as well. In April 2021, DVP began work on a literature scan of racism and violence. This work is informed by widely held definitions of systemic racism and the WHO Framework to consider laws and policies that create inequitable conditions that lead to health inequities, including violence. Instead of looking only at violence literature, they are using ML and natural language processing (NLP) technology to include a broad range of disciplines that will help paint a picture of the conditions that create violence outcomes. Products include a database and dashboard and will provide DVP with a rich resource to support the development of literature reviews, research concepts, and research agendas to inform technical assistance (TA), plan policy and partnership activities, and communication approaches. DVP is excited about the April 20, 2022 handoff from the contracting team that has skillfully navigated this complex project.

Increasing Health Equity and Workforce Diversity in Extramural Research

LCDR Marcienne Wright, PhD
Grants Program Team Lead / Scientific Program Official
Extramural Research Program
Operations, Office of Science
National Center for Injury Prevention and Control
Centers for Disease Control and Prevention

Dr. Wright discussed NCIPC's efforts in increasing equity and workforce diversity in extramural research. The CORE Health Equity goals for the Injury Center are to: 1) increase the number of applications from MSIs by 25%; 2) issue at least 2 research grant awards to MSIs; and 3) increase the number of awards made to PIs from a racial or ethnic minority group by 25%. The indicators and select key milestones for these goals follow:

Indicators

- Proportion of NOFOs considering Minority Serving Institutions at the second level of peer review, also known as program review.
- Proportion of successful applications received from MSIs compared to all applications.
- Proportion of PIs that belong to racial and ethnic minority populations.

- Percentage of successful PIs from under-represented populations or from MSIs that have participated in an NCIPC training webinar.
- ☐ Select Key Milestones
- By October 2021: Convene a webinar targeting MSIs and racial and ethnic minority researchers to increase understanding of NCIPC priorities, on writing a successful grant, and peer review process.
 - By February 2022: Develop a communications plan to increase visibility of NCIPC NOFO opportunities targeting racial and ethnic minorities and MSIs.
 - By December 2022: Identify funds and develop an ongoing sustainable plan that will include additional webinars, opportunities for mentorship, and mock proposal development opportunities.

Some of the items in the Action Plan to Meet CORE Health Equity Goals include: 1) standing up a Steering Committee of researchers from under-represented minority populations and from MSIs, which has been done and this Steering Committee has met 3 times since its inception; 2) conduct targeted outreach to MSIs; 3) support research institution “Twinning” in which majority-serving research institutions with a history of successful grant applications and awards partner with MSIs in order to help develop a robust grant program process for that MSI; 4) mentor early career scientists from under-represented minority populations; and 5) develop a communications plan and an outward-facing extramural research webpage so that all institutions can understand what extramural opportunities exist, including those that are targeted toward early scientist investigators from under-represented populations and targeted to MSIs.

In terms of the key milestone to develop a webinar by October 2021, NCIPC partnered with American Public Health Association (APHA) to convene a webinar titled, “Increasing the Pipeline for Researchers of Color in Injury and Violence Prevention.” The morning panel was comprised of 4 academic scientists of color in injury and violence prevention who had received major research project grants, either R01 or U01 cooperative agreements, from NCIPC. These 4 investigators discussed their experiences in successfully competing for these major research grants. They also provided tips to the audience on how to develop grant applications, and ways in which to develop the social and research capital needed to identify successful partnerships in the academic community and beyond. In the afternoon, NCIPC provided an overview of its research priorities in injury, overdose, and violence prevention. They then led the participants through studies and exercises on how to develop a robust research strategy, how to properly populate their biographical sketches to ensure that their expertise was clearly shown, how to engage the Scientific Program Official (SPO) early and often during the open period of the NOFO, how to navigate the application development and submission process, and what to expect in the peer review process. The meeting was attended by about 30 APHA attendees and was very successful. Many were appreciative for the opportunity to learn more about what occurs in grant submission and review processes. One of the outcomes of the meeting was an invitation for these researchers to submit their CVs to NCIPC for consideration in supporting a peer review panel.

NCIPC recognized early on as they talked a lot about incorporating health equity in the Injury Center’s intramural and extramural processes and funding opportunities that workforce diversity is a core component of health equity. They recognized that research in injury and violence prevention must include contributions from scientists who are under-represented in the extramural research workforce. Beginning in 2021, NCIPC began a targeted and intentional effort to ensure that they could reflect and support workforce diversity in its extramural program.

The first step was to negotiate with CDC's Office of Grants Services (OGS) and Office of General Council (OGC) to add secondary review consideration for MSIs or institutions partnering with MSIs during the second level of peer review. In FY21, every NCIPC NOFO stated a consideration for MSIs⁵ or institutions partnering with MSIs at the second level of review for consideration in funding meritorious applications out of rank order. For FY22, each NOFO had the same criteria. This time the NOFO stated that MSIs must be included in the SF-424 Senior/Key Personnel Form to ensure that as much parity as possible would be provided.

NCIPC went further to again negotiate with the OGS and OGC for consideration this time not only of MSIs, but also of Contact Principal Investigators (PIs) from populations under-represented in the extramural research workforce.⁶ This was specifically limited to any applications to NCIPC's Mentored Career Development Funding Opportunities (K-01) and was not offered with the R01 or U01 NOFOs. This was based on a ruling from the Supreme Court that the government's use of race or ethnicity in decision-making is considered to be Constitutional when it furthers a compelling governmental interest and is narrowly tailored to achieve that interest, such as in a training grant to strengthen the pipeline for researchers who are under-represented in extramural research. The Injury Center was able to bring that online for the FY22 K01 NOFOs.

The same precedent was used to bring online the opportunity for Research Supplements to Promote Diversity in Health-Related Research. NCIPC partnered with NIH to join the broad Research Supplements to Promote Diversity in Health-Related Research, which covers a myriad of mechanisms, including R01s and U01s, and allows investigators who hold these major research grant parent awards to request and receive additional funds to support the research, travel, training and career development needs of scientists from under-represented populations who are doing work on that specific parent award.⁷ NCIPC is very pleased to be able to offer these supplemental opportunities to these parent grants for the purpose of allowing supplements for a limited dollar amount to these investigators to support their trainees and other partners.

Discussion Points

Dr. Miller expressed gratitude for an extraordinary afternoon of presentations and said her heart was swelling because she was so grateful that NCIPC is making such a concerted effort around health equity. She was listening for trying to do some more centering of community-engaged scholarship, community-partnered research, and collaborative team science, and trying to find ways where research funding priorities can encourage investigators who otherwise are not incentivized to bring community members centrally into their research. Oftentimes what happens is that investigators do their science and then perhaps have a Community Advisory Board (CAB) review a flyer or consent form, but the community members are not deeply involved in the science. She wondered if someone could speak to opportunities to be more explicit about that kind of collaborative team science, which can really further this mission around health equity.

⁵ <https://www2.ed.gov/about/offices/list/ocr/edlite-minorityinst-list-tab.html>

⁶ <https://diversity.nih.gov/about-us/population-underrepresented>

⁷ <https://grants.nih.gov/grants/guide/pa-files/PA-21-071.html>

Dr. Underwood indicated that DOP would like the BSC's advice on ways that, as a federal agency, CDC can improve community engagement and trust with diverse communities with which they are currently working to have that reciprocity and not just taking a wealth of information from the community but make sure that they are partners through all phases of the process.

Dr. Miller said she had so many thoughts, some of which were coming from the privilege that she has had of working very closely with the NIH also on consultations for investigators and investigative teams in clinical trials around community engagement and issues of reciprocity and trustworthiness. One of the things she has seen repeatedly is that community members are not actually built into research budgets and are often not equitably compensated for their time in terms of participation in research and programmatic efforts. Building in best practices around community member compensation, partnership agreements, and working with Tribal communities and leaders who are very sensitive about the horrible history of breach of contract in this country. She would be happy to talk to a smaller group offline around this issue, because there is something critically important about building expectations formally into the work that community members are part of the scientific enterprise.

Dr. DePadilla added that in the new NOFOs DOP has developed over the past year, they have been working to include that kind of language, information, and expectation. In particular, the NOFO they developed to address ACEs, applicants are expected to include plans to develop and utilize a Research Advisory Board (RAB) or another method to engage stakeholders and to discuss whether and how the community is or will be engaged in choosing or designing the strategy for evaluation and the evaluation approach, and whether or how the research coincides with community input into the strategy to ensure the relevance, appropriateness, and feasibility. They are moving in that direction and do have some examples of it now.

Dr. Ondersma added that he moved to Michigan State University in Flint specifically because of the community engagement piece that was revelatory for him when he first visited there. There may be plenty of other places doing this, but he was very impressed by the way that this community is literally part of every search committee, strategic planning, executive committee, et cetera. They are start-to-finish not research project-by-project or grant-by-grant, but as a division and group. He also would be happy to share additional information about their experiences.

Dr. Rich thanked everyone for a powerful and comprehensive discussion of these various approaches to health equity, including the frameworks, which are critical. In terms of community engagement from a methodological perspective, there are a set of methods that might be considered to be intersectional that include qualitative methods that often engage communities in various ways and also sets of methods designed to look at complex causation. These are newer methods. He said the reason he was raising this was because some correlational methods that have been used for a long time tend to try to isolate single causes, even though it is known that there are certain factors that only exert their impact in combination with other factors. As they begin to try to understand complexity, it is not enough to say that the greatest predictor of a particular problem was blackness for example. Rather, they have to look at those things together. The reason this is especially important is that review committees may not be as receptive to these other methods as they are to more correlational and traditional methods. To the extent researchers from diverse communities are using these methods to try to deepen the understanding, they may be disadvantages in the review process, particularly if committees are not diverse.

Dr. Wright indicated that for extramural research, the scientific and technical merit peer review committees must not have implicit or explicit bias when they review applications. NCIPC makes very clear in its NOFOs that the research should address health equity for populations who are historically under-served and that they value community participatory approaches, for example. The reviewers are educated on the expectations of the NOFO and what program expects to get out of any successful awards, and then they leave it to the peer reviewers to manage the scientific and technical merit as their purview and responsibility. The secondary panel will perform an additional review and balance of meritorious applications that address the health equity concerns of interest to the Injury Center.

Dr. Greenspan requested that the BSC members provide suggestions to NCIPC of people who could serve on review panels who have expertise in some of the newer methods in qualitative research, and also researchers of color who perhaps would have different perspectives. The Injury Center is seeking to broaden their reviewers just as they are looking to broaden their researchers.

Dr. Underwood recalled that someone mentioned earlier the need to have training for reviewers, which is included in the DEBIA Strategic Plan in terms of embedding health equity throughout all phases of the lifecycle of funding. She noted that training of reviewers is a component that can be included as people prepare to review these applications.

Ms. Metzler noted that DVP has tried to work with and understand the methodology of community organizing, because oftentimes it is groups within communities who have used these methods that are very well-documented to improve the conditions being identified as needing improvement. One example of bringing science to those methods and partnering with communities is the Tulane Youth Violence Prevention Project that is using a community organizing methodology. The NOFO called for that as an option. DVP just completed a 3-year project in the upper Midwest states working with community organizers around ACEs prevention and narrative change. While there are other examples from DVP's their work, they know there is a lot more to learn.

Dr. Michael added his appreciations for these terrific presentations on a wonderful range of work. The aim for the Data Analytics Branch that included a range of SDOH in the WISQARS program is a very practical means and strategic move for furthering research on injury and health equity and the role that injury risk may play as a barrier to access to SDOH.

Mr. Igbo said this is something that they continue to expand and they want to make sure that there is increased engagement to ensure that the data are responsive at the county level.

Dr. Liller noted that when working with community agencies, they often develop Memorandums of Understanding (MOUs) or Memorandums of Agreement (MOAs) that depict what they will be doing together and some of these are quite extensive. She wondered whether NCIPC has considered creating sample MOUs or MOAs to ensure that everyone understands their roles and responsibilities and no one is left out. Some of the best arrangements that they have with agencies are ones that are agency-initiated and clearly listed.

Dr. Underwood said that from a programmatic side, when DOP funds state health departments, they do establish MOUs with different community groups. One thing that would be helpful to better address would be not having states lead with what they have in mind for those MOUs and approaching communities beforehand to better understand what they need instead of having more of a top-down approach. Additionally, being able to move beyond traditional partners that

a lot of states are very familiar with and pushing the bounds is an area in which NCIPC has to expand and engage.

Mr. Igbo added that DIP has relationships with health departments and academic systems. In cases of trying to build trust and get engagement, sometimes what has worked best is working through local academic centers, whether they have relationships or not, and sometimes state health departments broker that. This is a way to start the conversation via someone who is trusted and bypass the bureaucracy.

Dr. Chou expressed his gratitude for the presentation on these great efforts. In some areas related to NCIPC, there are known disparities and there are studies that show that there are things that can be done to reduce those disparities. In terms of treatments for opioid use disorder (OUD), it is known that there are tremendous disparities in availability of buprenorphine, but many populations have no access to it. There are also studies showing that if buprenorphine is made available, it increases utilization. Yet, there still has not been an impact. There continue to be tremendous disparities such that the only option for many populations is methadone. He did not know whether this could be addressed in research or what the role would be for the BSC and the Injury Center would be in bridging this gap. Perhaps some of this is policy-related, but change is needed in some of these areas.

Dr. Underwood said she feels that at this time, they are hopefully moving toward addressing more of the upstream factors. The tide has turned such that there is a realization that many individual-level interventions can be amplified by changing more of the environmental and social factors. This is occurring at the agency level at CDC, as well as across HHS as a whole where there is a health equity plan that was developed with all HHS partner agencies. There is a more concerted effort to realize that many issues require many partners and greater cooperation is needed across agencies to address these factors. For instance, transportation might be a barrier to obtaining buprenorphine that may require connections to bring services to communities. This is truly a moment in time with the energy around health equity work at CDC and across all other HHS sister agencies as well.

Dr. Greenspan said she was intrigued by earlier comments about including community perspectives in research. She requested more input from those who have done this, including what successes they have had. She also requested feedback from *Ex Officio* partners about what they have done to include diverse populations, achieve community and partner engagement, et cetera.

Dr. Ondersma indicated that he was not part of the genesis of the Flint, Michigan model, but they key for them was to have the community be a part of the work from the start. This is fairly well-known in terms of community-based participatory research (CBPR) approaches. The difference in Michigan was that it was division- or department-wide in that community members were paid, invested, their feedback drives the focus of the work, and they have provided important guidance. For instance, one of the messages from the community is that they do not want more documenting of the problem of inequities—they want solutions that can help address them. There is a community Institutional Review Board (IRB) that reviews for community acceptability, which is a huge help in getting incredible feedback from a diverse and freestanding group of community members and also helps in future communications with other parts of the community.

Dr. DePadilla noted that one of the research NOFOs they published earlier in the year addressed linking people to recovery support services. Specifically in the NOFO, it was not just medical services, but also other types of services that could make people better able to access medical services. For example, recovery support services that already exist in communities could help with transportation, housing, and other key SDOH to better facilitate connections to medical services.

Dr. Maholmes pointed out that it is important to specify up front as a funding entity what is meant by “community,” what kinds of relationships PIs should have with communities, and so forth. For instance, it is important to ensure that representatives from the community who are involved should be written in the grant as senior and key personnel where appropriate and that their expertise is brought to bear in the project. NIH also supports supplements to awards and encourages investigators to include partners and trainees in their research from early in the pipeline through early-stage investigators in order to continue to build the workforce and provide them with opportunities to engage in research that they might not otherwise have. These are just some of the ways NIH uses their funding process to ensure that they are building the pipeline, addressing some of these issues, and helping to identify the appropriate research priorities that will lead to health equity.

Dr. Miller noted that it is really about level of intention and formalizing these relationships. The conversation they were engaged in at the moment was on point. There is ample evidence from community partnered research that this improves the science and ensures that research has impact. The way to formalize this is to build it into calls for proposals and in every structure and every meeting inviting community leaders and compensating them for their time. That means building community member involvement into all budgets. A small example in Pittsburgh is with one of their large initiatives around child health and thriving. Every scientific committee is led by a community leader in addition to a professional traditional scientist. Greater than 50% of the scientific committee is comprised of community members who actively participate in the science. They write papers together, have partnership agreements, have authorship agreements, protocols for managing conflicts, et cetera. There are decades of best practices in this space.

Ms. Metzler added that CDC has a history of conducting CBPR. After then President Clinton apologized for the Tuskegee studies, then CDC Director Dr. David Stacher lifted up Urban Research Centers. The specific goal was to never let Tuskegee happen again by using CBPR methodology. That was her entrée into CDC and most centers had a wonderful run for about 8 years and then the funding stopped and they have never gotten back to it, but there is a body of work in the literature around what was accomplished. One of the Urban Research Centers was in Detroit at the University of Michigan and in other parts of the country as well. The agency does know how to do this.

Dr. Greenspan added that she was aware of CDC’s rich history in this work and she was trying to think about how they could move this to an extramural context, which might be more complex because in some ways it assumes that the partnerships are there for somebody to be able to conduct the research in the amount of time needed to use the research dollars. Perhaps NCIPC needs to think about how it is planning its research NOFOs and whether they need to give more time or have an initial planning period. Everything NCIPC does is based on its research priorities in terms of how they move forward. Do they need to call out health equity more blatantly? She wanted to engage the BSC to help the Injury Center think about how they are calling health equity in their priorities and then are paying attention to it as the priorities are implemented.

Dr. Bonomi emphasized the importance of the guiding principle of intersectionality and the overarching health equity perspective from CDC. Everyone comes to a space with an intersectional identity and research priorities and funding must be structured around those identities to be most effective. The extent to which the intersectional focus is elevated could be very helpful.

Dr. Maholmes emphasized that time is probably one of the most under-appreciated aspects of engaging in community research. Investigators often need much more time than what they anticipate in order to get it right. Sometimes what is effective for NIH is using phased awards in which there is time to build a relationship, ask questions, and then move on to the second aspect of the award rather than having the team jump right into the research. Those types of mechanisms are often helpful. Years ago, NIH had an Academic Community Partnership Award that began with a Conference Grant where there were lots of opportunities for people to work together, talk together, have many meetings, raise important questions that the research project was intended to pursue, and then submit the application for the research. Giving the applicants time to do the due diligence of making sure that there are shared interests, that there is a mutuality in the research that is going forward, and that all of the aspects of the health equity goals are being addressed to the extent possible are important. If those kinds of mechanisms are available to NCIPC, it might be worth considering how to have phased awards that give research teams time to build relationships, ask the right questions, and start paving the way for actually pursuing the research.

Dr. Bonomi added that perhaps integrating some of the time-intensive processes that Drs. Ondersma and Miller described to scale up and be prepared to launch projects would be quite helpful.

Dr. Wright thanked Dr. Maholmes for her comments. NCIPC has taken advantage of that type of flexibility in their funding mechanisms such that they have phased, or component awards, that include initial awards to a broader swath of funded applicants. They will go through their capacity-building processes, partnership building, initial feasibility research, et cetera. Those who meet the mark with then compete in a competing continuation going forward.

Dr. Bonomi indicated that she has reviewed for CDC, NIH, and National Institute of Justice (NIJ) and was thinking about some of the different review panels she has served on. Sometimes they appoint community-based partners as reviewers, not in reviewing the science, but in reviewing the community-based partnership components. That has been very informative in the grant review committees on which she has served. Perhaps NCIPC could use this strategy if they are not already, given that it is a way to involve community-based expertise and a way to establish a level set and continuity among scholars and community-based partners who are reviewing. Regarding training reviewers, while it is an excellent suggestion to put forward names to NCIPC of people who identify as reviewers of color, they also must be careful not to place the burden solely on persons of color. Review committees need to be trained in a systematic way that educates, prepares, and equips them to be successful in evaluating the health equity components from the lens of intersectionality, from the lens of unconscious bias, and how that all plays out. If there is a way to incentivize and reward that training component, that would go a long way. It is known that the one-time shot unconscious bias training is helpful in scratching the surface, but there must be ongoing education, training and conversations. If reviewers could tap into an ongoing education and training program where they could select different components, complete 2 or 3 modules per year, and have opportunities to engage in Communities of Practice

(CoP) dialogue with other reviewers, it would go a long way toward equipping panels to be best practices in the DEI space.

Dr. Wright indicated that NICPC does provide reviewer training and ensure that all reviewers are not just reviewers are from under-represented populations. There are a few structural difference in which CDC does not have standing study sections. It is a great suggestion to ensure that all members of NCIPC peer review panels are able to receive ongoing training in unconscious bias.

Dr. Pacula noted that the one piece that did not seem to have been discussed fully was how “health equity” is defined. It can be defined in a variety of ways. If the definition is too vague in setting a research priority, it could result in lopsided research that focuses on particular components of health equity without considering the full spectrum of health equity. She encouraged the various centers at CDC to be mindful of where they think the needle needs to be in each specific center for the objectives they are trying to meet and to try to be as explicit as possible in thinking about what they are looking for. For instance, different disciplines have different definitions of what health equity encompasses. There is a risk of having a mismatch in objectives for achieving health equity if health equity is mainly defined one way by the group that is developing the metrics.

Dr. Greenspan emphasized that this had been a very helpful conversation. NCIPC is very excited about the new work with which they are forging ahead, and they look forward to further conversations that get into more depth. CDC has WGs that are working on definitions of health equity and SDOH to develop some agency perspective. This is going on at the division, center, and agency levels. This is a major focus for the agency at this time.

Public Comment Session

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 participation in the BSC meeting and indicated that all public comments would be included in the official record and would be posted on the CDC website with the official meeting minutes at [CDC.gov/injury/bsc/meetings.html](https://www.cdc.gov/injury/bsc/meetings.html). He also indicated that while they would not address questions during this public comment period, all questions posed by members of the public would be considered by the BSC and CDC in the same manner as all other comments. He invited those who did not have an opportunity to speak in person to submit their comments in writing to ncipcbsc@cdc.gov.

Jim Nowicki, MBA
Client Advocate
Palantir Technologies

I just want to thank everyone for your efforts. I have been working with the CDC for more than 15 years now and am currently with Palantir Technologies. I want to thank everybody on this board and in injury for your efforts related to physical brain injury, suicide ideation, substance abuse prevention, and ACEs. All of these important programs have never been more important. I had a thought today as I was listening to all of this that the heterogeneity of all of these programs may deflect attention from what they all have in common and that is that the injury to

our brains—it's the brain basically—and the injury to our brains can be the result of trauma, as you know from blunt force, but also from stress, bullying for example, substance misuse, health inequities, as well as genetics. My thought is the more we promote the concept of injured brains as the main factor in inappropriate or impaired behaviors, the better we can support those in need of help. You don't snap out of a broken leg and you shouldn't be expected to snap out of thinking about suicide. So, I think how we talk about these issues is so important for making progress, and I think how we think about the brain may be worth the consideration of the board. That's my comment. Thanks for listening.

Closing Comments / Adjournment

Dr. Amy Bonomi, PhD, MPH
Co-Chair, NCIPC BSC
Professor, Department of Human Development and Family Studies
Michigan State University

Dr. Bonomi thanked everyone for participating in this meeting, recognizing that their time is valuable. She reminded all BSC members and *Ex Officios* members to send an email to Mrs. Tonia Lindley stating that they participated in this meeting. She emphasized that this meeting would not have been possible without the CDC Audio Technician, CCTI, OPP, and the CDC staff, including Mrs. Tonia Lindley, Dr. Arlene Greenspan, Ms. Donna Polite, and Mr. Victor Cabada. Upcoming BSC meetings will be convened as follows:

- June 8, 2022 1:00 to 4:30 PM ET
- July 26, 2022 1:00 to 5:00 PM ET
- August 23, 2022 1:00 to 4:30 PM ET

With no announcements made, further business raised, or questions/comments posed, **Dr. Bonomi** officially adjourned the Thirty-Eighth meeting of the NCIPC BSC at 3:53 PM.

Certification

I hereby certify that to the best of my knowledge, the foregoing minutes of the April 11, 2022 NCIPC BSC meeting are accurate and complete:

Date

**Amy Bonomi, PhD, MPH
Co-Chair, NCIPC BSC**

Attachment A: Meeting Attendance**NCIPC BSC Co-Chairs**

Dr. Amy Bonomi, PhD, MPH
Co-Chair, NCIPC BSC
Faculty Affiliate
Harborview Injury Prevention and Research Center, University of Washington
National Center for Injury Prevention
Centers for Disease Control and Prevention

NCIPC BSC Designated Federal Officer (DFO)

Arlene Greenspan, DrPH, MPH
Associate Director for Science

NCIPC BSC Members

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

Wendy Ellis DrPH, MPH
Assistant Professor, Global Health
The George Washington University
Founding Director, Center for Community Resilience

Frank A. Franklin, II, PhD, JD, MPH
Principal Epidemiologist and Director
Community Epidemiology Services
Multnomah County Health Department

Elizabeth Habermann, PhD
Professor, Department of Health Services Research
Mayo Clinic College of Medicine and Science

Mark S. Kaplan, DrPH
Professor of Social Welfare
Department of Social Welfare
Luskin School of Public Affairs

Karen D. Liller, PhD
Professor
University of South Florida College of Public Health

Angela Lumba-Brown, MD
Clinical Associate Professor, Emergency Medicine and Pediatrics
Co-Director, Stanford Brain Performance Center, Director of Research

Jeffrey P. Michael, EdD
Leon S. Robertson Faculty Development Chair in Injury Prevention
Visiting Scholar in the Johns Hopkins Center for Injury Research and Policy

Elizabeth Miller, MD, PhD
Professor and Chief

Children's Hospital of Pittsburgh
University of Pittsburgh Medical Center

Steve Ondersma, PhD
Clinical Psychologist and Professor
Division of Public Health and Department of Obstetrics, Gynecology, and Reproductive Biology
Michigan State University

Rosalie Pacula, PhD
Elizabeth Garrett Chair in Health Policy, Economics & Law
Professor of Health Policy and Management
Price School of Public Policy
University of Southern California

John A. Rich, MD
Professor, Department of Health Management and Policy
Director, Center for Nonviolence and Social Justice
Rich Drexel University

Lyle Ungar, PhD
Professor of Computer and Information Science
Professor of Psychology, Bioengineering, Genomics and Computational Biology (GCB), and
Operations, Information and Decisions (OID)
University of Pennsylvania

NCIPC BSC Ex Officio Members

Dawn Castillo, MPH
Director, Division of Safety Research
National Institute for Occupational Safety and Health

Wilson M. Compton, MD, MPE
Deputy Director
National Institute on Drug Abuse
National Institutes of Health

Mindy Chai, JD, PhD
Health Science Policy Analyst
Science Policy and Evaluation Branch
National Institutes of Health
National Institute of Mental Health

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

Bethany Miller, LSCW-C, MEd
Supervisory Public Health Advisor
Division of Child, Adolescent and Family Health
Health Resources & Services Administration

Constantinos Miskis, JD
Bi-Regional Administrator
Administration on Community Living
Administration on Aging

CDC Attendees

Gwendolyn Bergen, PhD, MPH
Matthew Brieding, PhD
Victor Cabada, MPH
Derrick Gervin, PhD, MSW
Arlene Greenspan, DrPh, MPH, PT
Loretta Jackson-Brown, PhD, RN,CNN
Candace Girod, MPH
Kristen Holland, PhD, MPH
Christopher M. Jones, Pharma, DrPH, MPH
Tonia Lindley
Natasha Underwood, PhD, MPH
Lara (Lace) DePadilla, PhD
Tochukwu Igbo, JD
Marilyn Metzler, RN, MPH
Donna Polite
Marcienne Wright, PhD

Elaine	Archie-Booker
Danielle	Arellano
Sarah	Bacon
Grant	Baldwin
Mick	Ballesteros
Colleen	Barbero
Chase	Barham
Donna	Barnes
Ann	Bauman
Laurie	Beck
Roger	Bigelow
Jessica	Bitting
Rebecca	Bunnell
Ashley	Burson
Victor	Cabada
Hallie	Carde
Andrea	Carmichael
Alexander	Charleston
Tessa	Clemens
Joanne	Cono
Michelle	Culbert
Christine	Curtis
Valerie	Daniel

Jill	Daugherty
Felicita	David
KeKe	Debebe
Zewditu	Demissie
David	Dempsey
Lara	DePadilla
Amanda	Dinwiddie
Rose	Domanico
Deborah	Dowell
Molly	Dowling
Melanie	Duckworth
Susan	Dugan
Christopher	Earl
Daniel	Ehlman
Julie	Eschelbach
Robyn	Espinosa
Danielle	Fernandez
Mighty	Fine
Norah	Friar
Matthew	Garnett
Emily	Glidden
Valerie	Godoshian
Carmen	Goman
Marissa	Goodson
Gery	Guy
Juliet	Haarbauer-Krupa
Nicholas	Hall
Natalie	Hamilton
Chris	Harper
Jeffrey	Herbst
Lisa	Hines
Amy	Holmes-Chavez
Kelly	Holton
Laura	Hughes-Baker
MiChel'le	Hull
Asad	Islam
Megan	Jaffee
Akadia	Kacha-Ochana
Alexis	Kaigler
Yollaine	Kaja
Ramakrishna	Kakara
Ramu	Kaladi
Mbabazi	Kariisa
Savannah	Kidd

JinYoung	Kim
Helen	Kingery
Laura	Koehler
Laura	Kollar
Sagar	Kumar
Jennifer	Le
Kinzie	Lee
Robin	Lee
Jaswinder	Legha
Sarah	Lessem
Hilerie	Lind
Tonia	Lindley
Jan	Losby
Sarah	Lowry
Bridget	Lyons
Karin	Mack
Reshma	Mahendra
Jennifer	Matjasko
Colleen	McCarty
Melissa	Mercado
Marilyn	Metzler
Christina	Mikosz
Khiya	Mullins
Livia	Navon
Brandon	Nesbit
Susan	Neurath
Cristina	Nigro
Rita	Noonan
Jim	Nowicki
Rosalie	Pacula
Maria	Panero
Julie	Panko
Parul	Parikh
Erin	Parker
Elizabeth	Parker
Amy	Peeples
Cassandra	Pickens
Nicole	Pitaniello
Donna	Polite
Jean	Publiee
Michelle	Putnam
mingli	qi
Judith	Qualters
Kelly	Quinn

Kathleen	Ragan
Xania	Reed
Michaela	Rikard
Robin	Rinker
Shannon	Robinson Ahmed
Cherie	Rooks-Peck
Tracy	Schaffer
Bev	Schechtman
Kristine	Schmit
Hanna	Schurman
Luana	Scott
Puja	Seth
Kate	Shaw
Monica	Shaw
Rohit	Shenoi
Tom	Simon
Carlos	Siordia
Jacinta	Smith
Sharon	Smith
Ayana	Stanley
Erin	Stokes
Andrea	Strahan
Eva	Trinh
Aimee	Trudeau
Jeanne	Tuerk
Natasha	Underwood
Lyle	Ungar
Emily	Ussery
Miriam	Van Dyke
Alana	Vivolo-Kantor
Stephanie	Wallace
Mikel	Walters
Ellen	Wan
Jacqueline	Watkins
Laura	Welder
Bethany	West
Jocelyn	Wheaton
Andrea	Williams
Enjoli	Willis
Stacey	Willocks
Tiffany	Winston
April	Wisdom
Amy	Wolkin
Sharon	Wong

Nancy	Worthington
Marcienne	Wright
keming	yuan
Hong	Zhou

Public Attendees

Jim Nowicki, MBA

Attachment B: Acronyms Used in this Document

Acronym	Expansion
ACEs	Adverse Childhood Experiences
ACEP	American College of Emergency Physicians
ACL	Administration for Community Living
ADS	Associate Director for Science
AGS	American Geriatric Society
AI/AN	American Indian/Alaskan Native
APHA	American Public Health Association
ASTHO	Association of State and Territorial Health Officials
BIAA	Brain Injury Association of America
BSC	Board of Scientific Counselors
BTF	Brain Trauma Foundation
CBPR	Community-Based Participatory Research
CCTI	Cambridge Communications and Training Institute
CDC	Centers for Disease Control and Prevention
CJS	Criminal Justice System
CMS	Centers for Medicare & Medicaid Services
COD	Committee on Diversity
COI	Conflict of Interest
CoP	Communities of Practice
CQI	Continuous Quality Improvement
CSA	Child Sexual Abuse
CTE	Chronic Traumatic Encephalopathy
DAB	Data Analytics Branch
DALYs	Disability Adjusted Life Years
DEBIA	Diversity, Equity, Belonging, Inclusion, and Accessibility
DELTA	Domestic Violence Prevention Enhancement and Leadership Through Alliances
DFO	Designated Federal Official
DIP	Division of Injury Prevention
DoD	Department of Defense
DUIP	Division of Unintentional Injury Prevention
DVP	Division of Violence Prevention
ED	Emergency Department
EMR	Electronic Medical Record
ERPO	Extramural Research Program Office
ET	Eastern Time
FACA	Federal Advisory Committee Act
FY	Fiscal Year
HAB	Healthy Aging Branch
HBCUs	Historically Black Colleges and Universities
HHS	(Department) Health and Human Services
ICD-10-CM	International Classification of Diseases-10-Clinical Modification
ICRC	Injury Control Research Centers
IHS	Indian Health Services
IOM	Institute of Medicine
IRB	Institutional Review Board

Acronym	Expansion
JAHF	John A. Hartford Foundation
mTBI	Mild Traumatic Brain Injury
IPV	Intimate Partner Violence
LGBTQ+	Lesbian, Gay, Bisexual, Transgender, Queer/Questioning+
ML	Machine Learning
MOA	Memorandums of Agreement
MOU	Memorandums of Understanding
MSIs	Minority Serving Institutions
MV	Motor Vehicle
NACCHO	National Association of County and City Health Officials
NAEMSO	National Association of State Emergency Medical Services Officials
NASHIA	National Association of State Health Injury Administrators
NCA	National Council on Aging
NCCDPHP	National Center for Chronic Disease Prevention and Health Promotion
NCIPC / Injury Center	National Center for Injury Prevention and Control
NEISS	National Electronic Injury Surveillance System
NHTSA	National Highway Traffic Safety Administration
NIDILRR	National Institute on Disability, Independent Living, and Rehabilitation Research
NIH	National Institutes of Health
NIJ	National Institute of Justice
NIOSH	National Institute of Occupational Safety and Health
NLP	Natural Language Processing
NOFO	Notice of Funding Opportunity
NVDRS	National Violent Death Reporting System
NVSS	National Vital Statistics System
OGC	Office of General Council
OGS	Office of Grants Services
OPP	On Par Production
ORCU	Overdose Response Coordination Unit
ODU	Opioid Use Disorder
OWG	Opioid Workgroup
PCORI	Patient Centered Outcomes Research Institute
PCP	Primary Care Physician/Practitioner
PI	Principal Investigator
PREVAYL	Preventing Violence Affecting Young Lives
PTSD	Post-Traumatic Stress Disorder
QALYs	Quality Adjusted Life Years
RAB	Research Advisory Board
RPE	Rape Prevention and Education
RPTS	Research Priorities Tracking System
SDOH	Social Determinants of Health
SEM	Social-Ecological Model
SME	Subject Matter Expert
SPO	Scientific Program Official
STEADI	Stopping Elderly Accidents, Deaths, and Injuries
SEM	Social-Ecological Model

Acronym	Expansion
TA	Technical Assistance
TBI	Traumatic Brain Injury
TDV	Teen Dating Violence
US	United States
USBIA	United States Brain Injury Association
VA	Veterans Affairs
WHO	World Health Organization
WISQARS	Web-based Injury Statistics Query and Reporting System