NCIPC Board of Scientific Counselors
Summary Report
Closed Session
Tuesday, July 16, 2019

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)

Thirtieth Meeting
July 16, 2019

Teleconference / In Person Meeting
Closed to the Public

Summary Proceedings

The thirtieth meeting of the National Center for Injury Prevention and Control (NCIPC) Board of Scientific Counselors (BSC) was convened on Tuesday, July 16, 2019 via teleconference and Adobe Connect. The BSC met in closed session in accordance with the Privacy Act and the Federal Advisory Committee Act (FACA). Dr. Daniel Whitaker served as Chair.

This meeting was closed to the public in accordance with the determination that it was concerned with matters exempt from mandatory disclosure under Sections 552b(c)(4) and 552b(c)(6), title 5, U.S. Code and Section 10(d) of the Federal Advisory committee Act, as amended (5 U.S.C. Appendix 2). The Scientific Review Officer explained policies and procedures regarding avoidance of conflict of interest situations; voting and priority rating; and confidentiality of application materials, committee discussions, and recommendations. Committee members absented themselves from the meeting during discussion of, and voting on, applications from their own institutions, or other applications in which there was a potential conflict of interest, real or apparent.

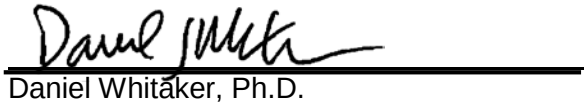
Upon establishing a quorum, a secondary review was conducted for the following NCIPC Notice of Funding Opportunity Announcements (NOFOs):

- *RFA-CE-19-004: Etiologic and Effectiveness Research to Address Polysubstance Impaired Driving.* The initial Injury Control Research Special Emphasis Panel (SEP) convened in person on May 7-8, 2019 to review the scientific and technical merit of this application.

Certification

I hereby certify that to the best of my knowledge, the foregoing minutes of the July 16, 2019 NCIPC BSC meeting are accurate and complete:

09/19/2019
Date



Daniel Whitaker, Ph.D.
Chairperson, NCIPC BSC Secondary Review

Attachment A: Meeting Attendance

BSC Members

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

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

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

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

Elizabeth Eckstrom, M.D., M.P.H.
Associate Professor of Medicine
Division of General Internal Medicine & Geriatrics
Oregon Health & Science University

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

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

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

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

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

Debora Daro-Tuggle, Ph.D.
Senior Research Fellow
Chaplin Hall
University of Chicago

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

Ex-Officio

Brodowski, Melissa, Ph.D.
Senior Policy Analyst
Administration for Children and Families
U.S. Department of Health and Human Services

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

Garrison, Shadia, M.P.H. (delegate for CAPT Jennifer Fan, Ph.D.)
Special Assistant
Centers for Substance Abuse Prevention
Substance Abuse and Mental Health Services Administration

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

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

Amy Leffler, Ph.D.
Social Service Analyst
U.S. Department of Justice

Constantinos Miskis, J.D.
Bi-Regional Director
Administration for Community Living

RADM Kelly Taylor, M.S., R.E.H.S.
Director, Environmental Health and Injury Prevention
Indian Health Service

Christine Schuler, Ph.D. (delegate Dawn Castillo, M.P.H.)
Institute for Occupational Safety and Health
Centers for Disease Control and Prevention

CDC Attendees

Gwendolyn Cattledge, Ph.D.
Victor Cabada, M.P.H.
Dauda O. Fadeyi, B.S., M.P.H.
Arlene Greenspan, Dr. P.H., M.P.H.
Tamara, Haegerich, Ph.D.
Dan Holcomb, B.S.
Mrs. Tonia Lindley
Mildred Williams-Johnson, Ph.D.
Kimberly Leeks, Ph.D.
Karin Mack, Ph.D.
Sue Neurath, Ph.D.
Mikel Walters, Ph.D.

Other Attendees Present

Stephanie Wallace, Writer Editor
Cambridge Communications

NCIPC Board of Scientific Counselors

July 17, 2019

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Thirtieth Meeting
July 17, 2019
Chamblee Campus, Building 106, Conference Room 1-A
Atlanta, Georgia 30341

Summary Proceedings

The thirtieth meeting of the National Center for Injury Prevention and Control (NCIPC, Injury Center, Center) Board of Scientific Counselors (BSC) was convened Wednesday, July 17, 2019. The BSC met in open session in accordance with the Privacy Act and the Federal Advisory Committee Act (FACA). Dr. Daniel Whitaker served as Chair.

Call to Order / Welcome

Daniel Whitaker, PhD
Chairperson, NCIPC BSC
Professor, School of Public Health
Mark Chaffin Center for Healthy Development
Georgia State University

Dr. Whitaker called the thirtieth meeting of the NCIPC BSC to order at 9:00 AM Eastern Time. He thanked everyone for their time and commitment to injury and violence prevention. He acknowledged how busy everyone is and expressed appreciation for them taking time out of their schedules to participate in this important committee that provides advice to the leadership of NCIPC on its injury and violence prevention research and activities. He also thanked and welcomed members of the public in the room and listening on the phone, indicating that there would be a time for public comment from 3:40 to 3:55 PM and that the operator would provide instructions for anyone wishing to make a public comment at that time.

Roll Call / Meeting Logistics

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

Mrs. Lindley called the role at the beginning of the meeting and each time the group returned from breaks and lunch. A quorum was determined to be present throughout the meeting. The attendees are listed in Appendix A at the end of this document. She noted that for the day's meeting, Geoffrey Wallace and Shelby Hoffer from Cambridge Communications would be serving as the Writer/Editors to capture the minutes for the meeting. She requested that before speaking, participants announce their names in order to be documented correctly in the minutes. In addition, Mrs. Lindley reviewed housekeeping/logistics and requested that members participating via teleconference send an email to ncipcbsc@cdc.gov acknowledging their participation in the meeting.

Approval of Last Meeting Minutes

Dr. Whitaker referred members to the copy of the minutes provided in their binders from the March 14, 2019 NCIPC BSC meeting. With no revisions proposed, he called for an official vote.

Motion / Vote

A motion was made and seconded to approve the March 14, 2019 NCIPC BSC meeting minutes. The motion carried unanimously with no abstentions.

NCIPC Update

Amy B. Peeples, MPA
Deputy Director
National Center for Injury Prevention and Control
Centers for Disease Control and Prevention

Ms. Peeples welcomed NCIPC BSC members and expressed her gratitude for their time and commitment to NCIPC. She then spent a few minutes providing some highlights about NCIPC programmatic activities and administrative updates. NCIPC is deeply committed to all injury and violence topics. Because of that, they prioritized three areas on which they spend a significant amount of time and energy. These three topics are high burden, high impact, and preventable and include: opioid overdose prevention, prevention of suicide, and prevention of adverse childhood experiences (ACEs). She briefly highlighted each of these areas.

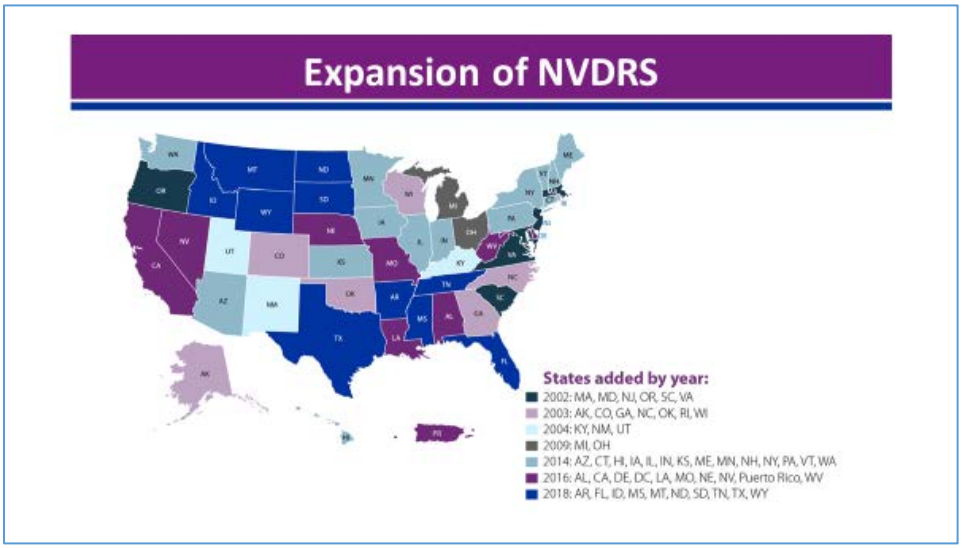
Earlier this Spring, NCIPC released a new Notice of Funding Opportunity (NOFO) entitled, "Overdose Data to Action (OD2A)." This program is going to provide over $945 million dollars to states over a 3-year period, with the focus being helping to end the opioid epidemic. The funding is going to states. For the first time ever, NCIPC also is funding cities and local health departments, which is very exciting for them. The NOFO combined previous programmatic activities that were in the field into one NOFO, so it was very robust. There are two components in the NOFO. One is a surveillance component that focuses on acquiring fatal and non-fatal data quickly and that also emphasizes innovation within the data and surveillance arena. The second component is prevention. This is a continuation of work that NCIPC has been doing for several years related to enhancing Prescription Drug Monitoring Programs (PDMPs), providing additional support to providers and local health systems, and enhancing linkages to care.

Since the BSC last met, NCIPC stood up a new activity, the Opioid Rapid Response Teams (ORRT). This is an HHS initiative, with CDC leading the work. These are multidisciplinary teams that can deploy within 48 to 72 hours to support CDC's public health partners experiencing an acute opioid crisis. A good example would be a spike in a community of opioid overdoses or perhaps an impending closure of a pain clinic. The ORRTs are helping to build a network between the law enforcement and public health communities. They are trying to make that connection so that patients have access to services and treatment in the event there is a pain clinic closure or some other event occurring in the community. NCIPC is currently working with partners, including Association of State and Territorial Health Officials (ASTHO), National Association of County and City Health Officials (NACCHO), National Governors Association

(NGA), and the Big Cities Health Coalition (BCHC) to market and advertise the availability of these teams. Ms. Peeples welcomed input and advice from the BSC on how NCIPC might be able to expand the knowledge and awareness of this opportunity for states.

The topic of marijuana used to be managed by another part of CDC, but was recently transitioned to NCIPC. The current activity for this topic area to develop a strategic plan to help figure out where NCIPC wants to focus and how to best utilize available resources. Ms. Peeples noted that Dr. Schier would describe the marijuana effort in more detail following the NCIPC update.

She reminded everyone that when last the BSC met, she shared with them that NCIPC was fortunate to receive an increase in its appropriation and Fiscal Year (FY) 2018 that allowed them to expand the National Violent Death Reporting System (NVDRS) to a nationwide system. This is a critical data system to help NCIPC understand and describe the key circumstances around suicide. In FY18, NVDRS was expanded to all 50 states, the District of Columbia (DC), and Puerto Rico (PR). NCIPC's hope is that all states will be reporting data by FY20:



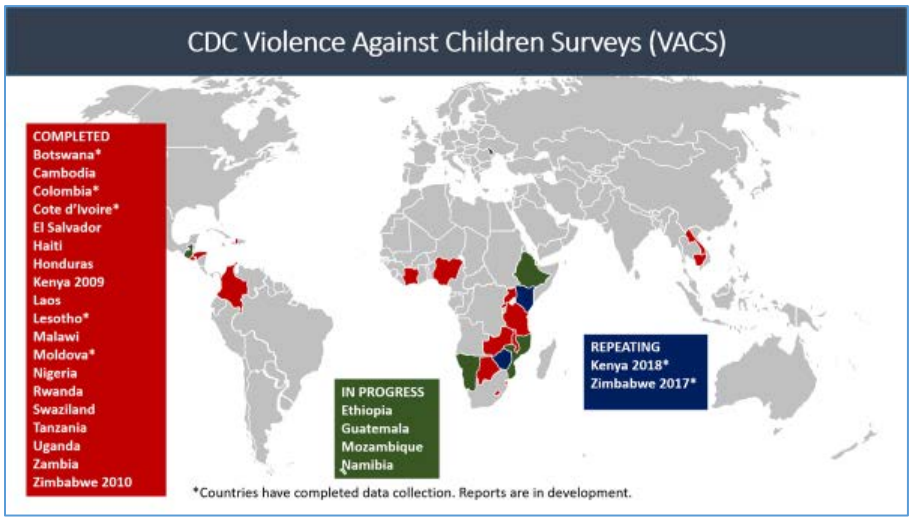
Another area of innovation or growth for NCIPC is in the syndromic surveillance arena as it relates to suicide. NCIPC recently released a NOFO to support states, territories, and local health departments to help improve their surveillance efforts related to non-fatal suicide outcomes. The focus of this NOFO is 2-fold. The first component is about improving the timeliness of aggregate reporting of non-fatal suicide-related outcomes, and the second component is about disseminating the surveillance findings to key stakeholders who work to prevent and respond to suicide-related outcomes. The key aspect of this NOFO that NCIPC is excited about is that applicants are being asked to report their data quickly. Data can have no longer than a 3-month lag, which is pretty fast in the public health world.

NCIPC also has been working with veterans in an innovative partnership with the Office of Personnel Management (OPM). They applied a human-centered design and a public health lens to better understand how NCIPC could reach veterans who are not accessing Veterans Health Administration services and how to prevent suicide among this group as they are transitioning out of military service and into civilian life. The pilot project focused on connectedness during this period of transition. Social connectedness is an evidence-based strategy for preventing suicide. The project allowed NCIPC to co-design several different concepts working directly with

veterans and veteran-serving organizations (VSOs). Since then, NCIPC has been able to pick up and fun two of those pilot projects: 1) Evaluation of VSO Community Integration Model, and 2) Evaluation of VSO Connectedness Model. In addition to providing funding to support these projects, NCIPC is helping those organizations enhance their evaluation capacity. This is an exciting project for NCIPC's staff because it was an opportunity to talk directly with veterans and VSOs to hear from them about what would be most useful and helpful to them as they are going to this period of transition.

Because of these relationships, NCIPC was invited to participate on the White House Task Force that was stood up in response to an Executive Order. Without those relationships, Ms. Peeples was not sure whether such an invitation would have been received. Thus, she views this as a huge success and an opportunity for NCIPC to play a critical part in the discussions and to be able to influence the dialogue that will occur in that Task Force.

Related to ACEs, Ms. Peeples highlighted NCIPC's Violence Against Children Surveys (VACS). The VACS are led by CDC as part of the Together for Girls Partnership. The survey is a measure of physical, emotional, and sexual violence (SV) against girls and boys. NCIPC works with countries around the world to administer these surveys and then help them use those surveys to influence action, so that the action can prevent future violence before it starts. This map shows the countries in which surveys have been completed or are currently being conducted, with the most recent expansion into Latin America:



The exciting thing about this project is that NCIPC is now thinking about ways that this can be translated into a domestic setting. The plan is for NCIPC to establish its first pilot site domestically in 2020, with preliminary data being collected shortly thereafter.

One of the great aspects of the VACS program is the direct impact NCIPC is seeing. To illustrate, Ms. Peeples shared an example from Malawi. This table highlights the areas of impact following VACS in 2013:

Areas of Impact Following VACS Malawi (2013)	
Child, Early and Forced Marriage	• Laws on marriage and trafficking passed and disseminated at district levels • Laws enforced by traditional leaders
Reporting and Service Access	• Phone calls to Child Helpline to report abuse and violence nearly doubled • Increase in violence survivors at one stop centers
Local Law Response	• Increase in sexual abuse cases handled by police victim support units • Partnership developed with Ministry of Education on a Safe Schools Program
Empowerment and Safety	• Over 21,000 children (over 75% girls) trained in empowerment and self-defense • Preliminary data show that risk for rape was reduced by nearly 50% for girls

To highlight, the calls to the Child Helpline nearly doubled and more victims accessed services. Thousands of girls were trained in empowerment and self-defense. Perhaps most importantly, the preliminary data show that the risk of rape was reduced by 50% for girls.

In terms of the work NCIPC is doing to try to collect more data pertaining to ACEs, NCIPC has been collecting data on ACEs since 2009 via the ACE Module in the Behavioral Risk Factor Surveillance System (BRFSS). There has been an increase annually in the number of states that are collecting ACE state data, with a total of 42 states having collected data for at least one year. This year, NCIPC was fortunate to be able to increase that support and provide funding to 6 additional states. Last November, CDC released research on the *Prevalence of Adverse Childhood Experiences From the 2011-2014 Behavioral Risk Factor Surveillance System in 23 States*. That research showed that 60% of adult Americans experienced at least one ACE and up to 25% experienced three or more ACEs. These findings highlight the importance of understanding why some groups are at highest risk and how that could impact their life of the course of their lifespan.

It is known that exposure to ACEs is especially common in the lives of people and families with substance use disorders (SUDs). One way NCIPC is working to better understand this connection is through an innovative project in Martinsburg, West Virginia. This is a police-school-community partnership focused on opioid overdose prevention. This project is assessing participants' ACE scores and connecting those individuals to appropriate resources and support as needed. As of September 2018, more than 700 ACE assessments had been administered to adults, over 300 community members had been trained in ACES, and almost 400 teachers and school personnel had received trauma assessment training.

Turning to operational and staffing updates, Ms. Peeples reported that since last the BSC met, NCIPC was fortunate enough to receive an increase in its appropriation. FY18 and F19 had consistent funding numbers that were significantly larger than in previous years. NCIPC's FY19 funding is $648.6 million at the Center level. Because of this increase in funding, NCIPC has been able to increase its staffing and is growing rapidly. Between January and June of this year, NCIPC has onboarded 45 new staff members and has 142 actions pending with Human Resources (HR). NCIPC is very excited about the new talent and energy these staff are bringing to the Center. With over 500 employees at present, NCIPC believes it will have additional resources to support its growing portfolio of work.

NCIPC has had some key staff changes over the past year. Dr. Melissa Merrick accepted a position as President and Chief Executive Officer (CEO) of Prevent Child Abuse America (PCA America). While NCIPC is very sad to lose her, they are happy for her and this new step in her professional career and look forward to working with Dr. Merrick and enhancing NCIPC's partnership with PCA America. In May 2019, NCIPC welcomed a new Associate Director for Communications, Kelly Holton. Ms. Holton came to NCIPC from the Center for Global Health (CGH). For the past, she worked on issues related to global migration and travelers' health. She was instrumental in CDC's responses to the Zika and Ebola epidemics. NCIPC is looking to leverage her expertise in the emergency response area as it relates to the opioid epidemic. In her role as ADC, she is responsible for all of NCIPC's external communications. That includes product development, branding, campaign development, public affairs, and all social and digital media platforms.

This growth in staff also gave NCIPC an opportunity to examine its organization as a whole. They recently completed an organizational assessment, in which they did a deep dive in both the structure and function of the Center. The decision was made to reorganize for several reasons. First, they needed to increase the Center's nimbleness and ability to adapt to emerging issues. In addition, they needed to align themselves with the Administration's focus on efficiency and effectiveness. Dr. Houry and Ms. Peeples were hoping to maximize collaboration across the Center and across topical areas, and to break down some of the silos. They also were looking for ways to be innovative overall and in the data and surveillance arenas.

Several members of the BSC participated in the assessment in terms of interviews that were conducted by NCIPC's contractor. Ms. Peeples thanked them for their input, which was definitely helpful and informative. As of the previous day, the *Federal Register* notice was posed, which is the last step in a very long process to get a reorganization approved within the federal government. The reorganization was approved effective July 17, 2019. NCIPC's plan is to stand up the reorganization by October 1, 2019. They will work with the BSE to provide a more detailed briefing, along with their other partners, regarding what this means, what the new structure will look like, and what the focus will be moving forward.

In terms of items on the horizon, the Injury Control Research Centers (ICRCs) received their funding the previous week. This year, the following 9 ICRCs are receiving funding:

- ❑ Emory University
- ❑ Research Institute of Nationwide Children's Hospital
- ❑ University of Pennsylvania
- ❑ University of Michigan at Ann Arbor
- ❑ University of Washington
- ❑ Johns Hopkins
- ❑ University of North Carolina at Chapel Hill
- ❑ Columbia University Health Sciences
- ❑ University of Iowa

NCIPC is working on two *Vital*signs™ soon to be published. The first will be in August 2019 with a focus on naloxone, and the second will be in November with a focus on ACEs. This is the first time NCIPC has ever had a *Vital*signs™ release on ACEs. The *Vital*signs™ on suicide in 2018 had huge hits and garnered tremendous coverage, and they are hoping the same will occur for the ACEs *Vital*signs™.

During the last BSC meeting, an update was provided on an indication-specific opioid prescribing project. The manuscript is currently in clearance. In addition, related clinical tools that highlight best practices in opioid prescribing and comprehensive pain management for a select number of diagnoses are in development. These materials will help to improve the safety and efficacy of pain management, while also reducing the risk associated with opioid therapy.

In conclusion, Ms. Peeples thanked the BSC for their time and input, pointing out that she has seen tremendous growth and change since joining NCIPC as the Deputy Director. She emphasized how much she values their partners' support in that effort, without whom they would not have been able to make as much change and experience this much growth.

Discussion Points

Dr. Schwebel congratulated NCIPC on its exciting projects and exciting progress. While the growth in staff is terrific news, it also could pose somewhat of a threat. Tremendous growth with a lot of new people requires caution about how to grow. The reorganization is a good way to handle that, but it is important to keep in mind that this very rapid growth could be a threat if not handled well.

Ms. Peeples agreed completely and emphasized that NCIPC gave this very careful thought to the number of new FTE who were brought on board to make sure that should something happen with their funding, they would be able to continue to support the personnel.

Dr. Barnes thanked Ms. Peeples for a very comprehensive and informative presentation. Regarding the veteran-centered suicide project, she was impressed with the 700-plus quotes and observations that were synthesized. She inquired as to where they could find those quotes so that they could read them all.

Ms. Peeples replied that all of that information is documented in the project report, and they can send the synthesis to the BSC so that the members could get a flavor for that input.

Regarding opioid prescribing estimates, **Dr. Wheeler** recalled that the BSC made a number of recommendations during the last meeting. She wondered whether those recommended changes were incorporated and the project reflected them.

Dr. Baldwin indicated that they tried to be extremely attentive to the comments provided and did make all of the changes that were requested by the BSC, which they should be able to recognize in the manuscript once it is cleared. He said that he thought this served as a good case example of how this deliberative process intentionally informed changes to what CDC is doing, and thanked the BSC for their feedback. The manuscript should be published in the fall.

Dr. Comstock agreed with the funding of the ICRCs and recognized that they are all worthy and do great work. However, she did not think it was appropriate to call them "new" as they all have been funded previously. Perhaps they could be identified as "renewed" rather than "new."

Dr. Kaplan indicated that years ago, he conducted a number of studies on veteran suicide. They often cited a figure that 40% to 50% of all veterans were not connected to the Veteran's Administration (VA). He wondered what the most current figures were. Regarding the ACEs work, he requested additional information about the Guatemala component in terms of where the work is being done, who is involved, and whether it is focused on rural and urban populations.

Ms. Peeples replied that she did not have the specific statistics with her, but they will pull that figure and send it back in minutes. If there is more interest in this project, they certainly could highlight this in a future meeting and go more in depth on it.

Dr. Massetti indicated that over the last 3 years, the Division of Violence Prevention (DVP) has been working through the United States Agency for International Development (USAID) Central America Regional Security Initiative (CARSI), which provided funding for surveys in Honduras, El Salvador, and Guatemala. The Honduras and El Salvador surveys launched in May 2019. The Guatemala survey is scheduled to be in the field for data collection in September 2019. DVP is working in partnership with the Universidad del Valle de Guatemala (UVG), as well as the International Organization for Migration (IOM). That work on CDC's side has now completed because of the Executive Order restricting all work in those countries. She believes their local partners are going to proceed with the survey this fall, but CDC will not be involved in any way. In terms of whether the work is focused on rural and urban populations, the original sampling plan that was developed was intended to yield nationally representative data on children 13 to 24 years of age. They recommended over-sampling in the Northern Highlands Region, which had very little data because it has high levels of indigenous populations. She did not know whether they would proceed with the same sampling plan that was recommended, given that CDC is no longer involved in the methods.

Based on Ms. Peeples' presentation, it sounded to **Dr. Cunningham** that perhaps the ORRTs were not as widespread as NCIPC would like. She expressed interest in more information about the scope of this program in terms of how many times the teams have been deployed and what the looks like.

Ms. Peeples' indicated that they have just started to pilot this with a handful of cases where the teams were deployed. This is new and it took a huge effort to recruit. Staff throughout the agency and the Department of Health and Human Services (HHS) have been onboarded to participate in these teams, and the curriculum and training had to be developed. All of that has now occurred and the teams have been on one official deployment, as well as a couple of other interactions that involved engagement but not quite full deployment. They have the scope and capacity to conduct quite a few deployments if the need exists. They are now trying to better gauge what the true needs might be and in what areas. The teams can be customized based upon the local jurisdiction's needs and based upon whatever the crisis is in that community.

Dr. Baldwin added that there are several hundred rostered CDC staff available for deployment. They also are trying to leverage the large-scale OD2A cooperative agreements. They are trying to the extent possible to leverage state and local partners to assist with those activities. Currently, that work is being managed out of the Opioid Response Coordination Unit (ORCU), which NCIPC has discussed with the BSC in the past. That work is about to migrate to the Division of Unintentional Injury Prevention (DUIP), his division, and they are trying to determine how to be responsive to the needs that they receive. They did a very intentional job of making sure the protocols and the training curricula were in place to make sure that those who were deployed had the skills that were needed for those deployments. They anticipated deployments taking approximately two weeks to a month and having a mix of skill sets available to be deployed. The nature of the opioid overdose epidemic, the broader drug overdose epidemic, has taught them a lot of lessons over time. The sophistication and capacity that has been built out over the last 5 to 10 years is already in place in many instances. Thus, CDC is providing a supportive role versus a much more traditional CDC response activity wherein CDC personnel would be both at the frontline and leading the charge. They are looking to play a role in which

they can be supportive of what state and local capacity needs are and to complement and then ultimately leave them in a place where they have ongoing readiness to move forward. The major issue for CDC pertains to making sure, especially in the case of pain clinic closures, that folks have access to DATA Waived Physician (DWP) where they have the opportunity to get into definitive long-term recovery. They is a key point of sensitivity. The availability of DWP is quite uneven across the country. To the extent that the populations requested that the communities requesting the ORRTs do not have those DWP available, that is a key area of intervention for CDC. CDC works very closely with its federal partners along the way, but the core goal for CDC regards how to support states and localities as they have these needs, as well as leverage the state-based program. They also have a large-scale TA hub, and those TA providers also will be available to help assist as needed. He spoke with Dr. Noonan the previous day about this work transitioning to his division and making sure they are very intentional about how they continue to support it. It is a priority for the Assistant Secretary for Health (ASH) within HHS, so CDC is very committed to this.

Ms. Peeples added that these teams are an excellent example of the partnership work that they have been able to do with the law enforcement community. Because of that direct connection with the law enforcement community, CDC has advanced notice that things are about to happen, which allows the public health sector to stand up whatever is needed to be able to accept patients or you maneuver within that space whatever the need might be.

Dr. Baldwin added that under Dr. Noonan's leadership, they have strengthened the partnership between public health and public safety. Data sharing is a central piece of that signature initiative that Dr. Noonan, Dr. Wolff, and others have built on the overdose response strategy. This is an innovative partnership leveraging the High Intensity Drug Trafficking Areas (HIDTA) program where CDC co-locates a Public Health Analyst with a Drug Intelligence Officer to facilitate both data sharing and response activities. CDC has grown this program over time. Currently, there are 11 HIDTA in 24 states and they intend to go national with that program because of the success of it and because of the changing nature of the drug overdose epidemic and the dominance of the illicit marketplace and driving the fatalities. They think that is going to be even more important moving forward. To amplify Ms. Peeples' point, they are being very thoughtful in prioritizing those partnerships.

Dr. Eckstrom inquired as to how people find out about the ORRTs. She wondered whether this information was broadcast wide enough that any small town or other place knows about the availability of this opportunity.

Ms. Peeples' indicated that they are working with their non-governmental organization (NGO) partners to help spread the word through their networks. For example, ASTHO is communicating directly with the state health departments. NACCHO is communicating directly with the city and county health departments. BCHC is communicating directly with the big cities. NCIPC has convened a large number of overview calls to all of those members and organizations. In addition to that, there has been communication through and with other public health partners.

Dr. Baldwin added that they are trying to be reflective. While they are taking all-comers, the extent to which they actually deploy a team depends upon the circumstances on-the-ground and whether they think an ORRT is best able to facilitate a request or if there are other avenues by which the requester can get the support that they need. NCIPC is there to help and is committed to it, but some of it has to do with the process of building out and they want to make sure that when they "put their shingle out" they are able to be responsive to the requests that come in.

Regarding the VACS in Malawi, **Dr. Barnes** inquired as to what has developed from these studies in terms of whether they are just collecting data or if they are creating evidence-based practices. She would like more specific data about what they were reporting.

Ms. Peeples indicated that the surveys are to benefit the countries to help inform action within their own country to impact policy change, stand up programs, et cetera. From that, NCIPC is learning lessons that they can apply to other countries and hopefully domestically. They are hoping to be able to replicate a similar study within the United States (US) in 2020.

Dr. Mercy added that NCIPC has a Technical Package that has been endorsed by the United Nations Children's Fund, originally known as the United Nations International Children's Emergency Fund (UNICEF), the World Bank, the President's Emergency Plan For AIDS Relief is a United States (PEPFAR), CDC, and other international organizations that lays out the best available evidence for preventing violence against children. That is being used in each of these countries. The survey is connected with the best available evidence and the countries are adapting it to their own particular context. There now is a Global Partnership to End Violence against Children that NCIPC is working very closely with, so there is a lot going on internationally to move this type of activity ahead. The surveys are the foundation for a lot of that work, so NCIPC is excited about what is going on.

Ms. Peeples indicated that they could provide more high-level summary statements and some of the themes related to each of the countries.

In follow-up to Dr. Barnes' question, **Dr. Kaplan** said he would like to know in general terms what NCIPC has learned from the completed surveys regarding key findings. He wondered whether on the whole anything surprised NCIPC.

Dr. Mercy replied that there are many findings, but one of the things in general they are finding that is consistent with ACEs studies is that the relationship between exposure to violence as a child and a variety of health outcomes is consistently found across countries. These surveys in Africa are funded by PEPFAR because of the connection between exposure to violence, particularly SV among girls and HIV, particularly HIV risk behaviors. This has influenced the PEPFAR program in terms of their funding. They are putting investments in prevention of violence now because of its risk for HIV. In Latin America, the situation changes to a certain extent.

Ms. Peeples emphasized that if this is of great interest to the BSC, NCIPC can certainly do a more in-depth presentation on the VACS program during a future meeting.

Dr. Kaplan thought that would be great and is also interested in the domestic translation if that could be included.

NCIPC's Role in Addressing Public Health Concerns Related to Marijuana

CAPT Joshua G. Schier MD, MPH, USPHS
Senior Medical Officer
Division of Unintentional Injury Prevention
National Center for Injury Prevention and Control
Centers for Disease Prevention and Control

Dr. Schier noted that he is one of the new hires to NCIPC and that he is trained in emergency medicine and medical toxicology. During this session, he described NCIPC's role in addressing health concerns related to cannabis and cannabinoids. He explained that this was a high-level presentation of some background material and what CDC has done over the last several years, with a major intent to acquire input from the BSC with regard to future direction and future areas that NCIPC should target in terms of where they think the greatest potential is for the most significant impact.

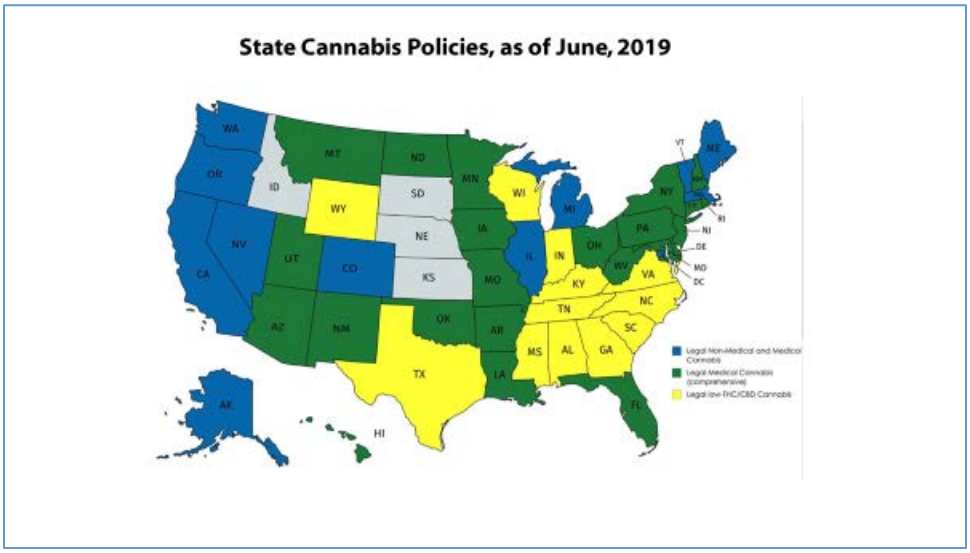
Cannabis or marijuana, also referred to as "weed, pot, or dope" basically consists of the dried flowers and leaves of the cannabis plant. The genus and species is *Cannabis sativa*, which is the most commonly implicated genus and species for this particular agent from which cannabis and marijuana are made. It is important to know that the flowering tops of cannabis contain more than 500 chemicals and include more than 100 different types of cannabinoids. Those cannabinoids vary from chemical structure to chemical structure. They are part of the group of compounds that are called cannabinoids and generally refer to compounds that bind cannabinoids-specific receptors. These compounds are generally comprised of three major groups. Endocannabinoids are endogenous within the human body and bind to those receptors. Phytocannabinoids are plant-based compounds that fit the same structure and physiology of endocannabinoids, but they are found in plants. The most common compounds that come up for discussion, especially with regard to public health concerns, are tetrahydrocannabinol (THC) and cannabidiol (CBD). Synthetic cannabinoids is a catch-all term for various agents that are produced illegally and for the most are illegal to begin with. They have very different patterns of toxicology and adverse health effects than regular cannabis.

Synthetic cannabinoids are comprised of a wide variety of chemicals that are sprayed on the plant material. These are sold commonly as herbal products and can be found in small mom and pop shops on the street, in gas stations, et cetera and people smoke them to get high. This is similar to a cannabis-type product because cannabis is illegal, so they use these agents which are also now illegal for the most part. The manufacturers and distributors circumvent the legality issue in a variety of ways. Once a compound becomes illegal under a state or federal law, it gets a minor chemical alteration so it no longer fits that exact pattern. They put it in packages with clear labeling that it is not intended for human consumption, just for potpourri, incense, et cetera. There are a lot of different ways that people get around that concept of being illegal. Synthetic cannabinoids are often dangerous and cause very different health effects from cannabis itself.

There have been multiple outbreaks of synthetic cannabinoid-associated illness in the past few years. One of the earliest ones was an outbreak that happened in 2012. It was a cluster of illness related to people who were using synthetic cannabinoids who suddenly developed acute kidney failure. That was unusual and does not occur with cannabis. Until that point, no one had ever seen that with synthetic cannabinoids. The most recent outbreak was in April 2018. This was a multi-state regional-level outbreak that was centered in Illinois involving a synthetic cannabinoid product that people were using. They were developing coagulopathy or abnormal

bleeding. Testing and further analysis found that the synthetic cannabinoid people were using was tainted with an organocide and as a result, people were bleeding because it prevented them from clotting. This is very different from cannabis.

There are a lot of complicated policy issues surrounding cannabis. It is still considered a Schedule 1 drug by the US Drug Enforcement Administration (DEA). This means that it is classified as a drug with no currently accepted medical use and a high potential for abuse. It is still technically illegal on a federal level, but an increasing number of states are legalizing cannabis for medical and/or non-medical use. To date, approximately 23 states have comprehensive medical use legalization, but no non-medical use legalization; 11 states and DC have now legalized non-medical and medical use of cannabis; and 12 States also have policies in place that allow legal use of low THC/CBD products, such as oils, creams, and tinctures derived from *cannabis sativa* itself. This map illustrates the wide variety of cannabis policies:



Cannabis and cannabinoid use intersects with multiple public health areas including medicine, science, policy, communication, legal issues, and economics. This is a very challenging topic since it encompasses so many aspects of these different fields. There are a lot of growing areas of public health interest and burden related to cannabis and cannabinoids, including the following:

- ❑ Injury (poisoning, impaired driving, polysubstance use, health impacts of medical cannabis/cannabinoids)
- ❑ Youth initiation and brain development
- ❑ Addiction and mental health
- ❑ Chronic diseases including smoking related health effects (especially secondhand marijuana smoke)
- ❑ Reproductive health with a focus on the pre, peri, and postnatal periods (e.g., breastfeeding)

It is important to understand that there is no one area within CDC that focuses exclusively on this topic or that has a comprehensive focus on all areas. This work itself at CDC is spread out over multiple Centers, Institutes, and Offices (CIOs). NCIPC is engaged in work focused on poisoning, impaired driving, and polysubstance use. The National Center for Chronic Disease

Prevention and Health Promotion (NCCDPHP) focuses on smoking, reproductive health, and chronic diseases. The National Center for Environmental Health (NCEH) is focused on cannabis biomarker development. There are surveys housed in different areas that are trying to assess and better understand the extent of use of these products and cannabis in general. These surveys include population use surveillance indicator work by NCCDPHP with the Behavioral Risk Factor Surveillance System™ (BRFSS), NCCDPHP and Division of Adolescent and School Health (DASH) with the Youth Risk Behavior Surveillance System (YRBSS), and the National Center for Health Statistic (NCHS) with the National Health and Nutrition Examination Survey (NHANES).

It is also important to note that because of this widespread work that has been underway, some strategic planning efforts began in 2015-2016 that were coordinated by senior staff of the Office of the Deputy Director for Non-Infectious Diseases (DDNID). This was a charge that came from the then director of CDC, Dr. Thomas Frieden. The mission of these strategic planning activities was to identify health outcomes associated with marijuana, prevent known and potential health harms of marijuana, and prevent youth initiation and use of marijuana. These strategic planning activities came out of the effort to better coordinate the different parts of CDC that were working on cannabis-related issues and to help provide more focus on what they should do on behalf of CDC. These efforts identified early strategic priorities which included the following fundamentals to increase the capacity of CDC and state jurisdictions to study public health outcomes; increase the capacity to identify, monitor, and evaluate policy to prevent cannabis-related harms; create and disseminate evidence-based communication products; and assess public health impacts of cannabis and its policies. The products of this work include the following:

- ❑ A website and numerous other communication products
- ❑ Capturing some limited data on population use
- ❑ Technical assistance and support for state health departments
- ❑ Cannabis surveillance data collection tools for states
- ❑ State policy tracking for situational awareness
- ❑ The 2017 National Academy of Sciences (NAS) report on marijuana, *The Health Effects of Cannabis and Cannabinoids*, with multiple sponsoring organizations

The 2017 NAS report provided evidence-based conclusions regarding the existing published literature on therapeutic use, certain specific health topics, and recommended directions for future work. Health topics in the report include cancer, cardio-metabolic risk, respiratory diseases, immunity, injury and death, reproductive health effects, psychosocial health, mental health, problem cannabis use, and cannabis use and abuse of other substances. The report's conclusions were that cannabis and cannabinoids were effective for treating some forms of chronic pain, chemotherapy-induced nausea and vomiting, and improving patient-reported multiple sclerosis spasticity symptoms. In terms of the key findings of the report, associations were found between cannabis use and some respiratory problems, increased risk of motor vehicle crashes, lower birth weight of offspring, development of schizophrenia and psychosis, being male and the severity of problem cannabis use, and initiating cannabis use at an early age as a risk factor for problem cannabis use.

Oversight, coordination, and leadership activities were transferred to NCIPC's DUIP from the DDNID in 2019. The initial vision of the core roles for NCIPC for cannabis and cannabinoids at the agency included scientific oversight by the Subject Matter Experts (SMEs) on epidemiological, clinical, and toxicological issues; communication and health messaging, and coordination of activities across CDC CIOs; and speaking with one voice. It is important to remember that this work, just like anything else, is going to be funding- and resources-

dependent. There is no specific cannabis/cannabinoids appropriation, but current work is anchored to other injury focus areas (e.g., overdose, impaired driving, polysubstance use, possibly youth substance use, and other potential areas). NCIPC also will continue supporting cross-agency coordination and communication activities, with a hope to expand should additional funding become available. NCIPC will continue to support cross-agency coordination and communication activities that foster that collaborative atmosphere across CDC. There is an internal CDC Working Group that meets regularly to discuss the issues and share information. A strategic planning process is in progress to define the NCIPC/CDC mission. To help guide that input, Dr. Schier posed the following topics/questions for BSC input:

- In which topic areas might NCIPC focus efforts to have the greatest impact on Injury burden?
  - Outcomes such as overdose, impaired driving, polysubstance use, quality of life related to medical use, youth use and associated impacts such as mental health and other substance use?
  - Non-medical vs medical use of cannabis? Both?

- Where should priorities be placed in the:
  - Short-term, with limited resources?
  - Long-term, should new resources become available?

- Investments in which of the following hold the most promise for having the most meaningful impact for Injury and public health practice?
  - Surveillance
  - Laboratory
  - Toxicology
  - Education
  - Evaluation activities (e.g., policy, program, prevention, et cetera)
  - State technical assistance activities
  - Partnerships (schools, public safety, et cetera)
  - Other?

Discussion Points

Dr. Kaplan said that he is from California and they were hearing conversations the night before that the "Winds of the West blow East and it may take up to 20 years." However, based on the map, things are moving in that direction. He thought it seemed like something a little more radical is needed—something of a paradigm shift. The reality is that it is going to become legal in many more states. There is a lot of emphasis on the pathology. While it might seem odd, he wondered if there was any way to focus on the benefits of safer use of marijuana to move away from the pathology focus or paradigm to some of the benefits and perhaps expend more money in that area.

Dr. Schier replied that the topic of a balanced approach to study risks and potential benefits has arisen frequently and that it was open for discussion during this session. He encouraged others to add anything else they had to say about that particular issue.

Dr. Cunningham agreed completely with Dr. Kaplan. Other federal agencies and federal policies also focus on the harms. Always looking at one perspective creates a lot of problems. While this is about injury prevention and control, it has to be a balanced approach. "Overdose" is on the list, but it was not clear which direction of overdose in terms of potentially reducing

opioid-related overdoses or if it was about cannabis and other substances at the same time as overdose. The perspectives thus far at the federal level has been so heavily focused on harm, but so many people across the country want to know the risk-to-benefit ratio. That balanced approach is really critical.

Dr. Baldwin indicated that one thing NCIPC would like to hear feedback on as well is that based on the epidemiologic data, potency and frequency of use are increasing. In terms of the conversation about the risk/benefit balance, they also must cycle in the fact that people are using more frequently and using products that because of the modality deliver more potent doses of THC.

Dr. Eckstrom indicated that in Oregon, they get questions every day from patients regarding whether they can use this for peripheral vascular disease, insomnia, et cetera. The evidence is so weak at this point, as a physician she feels the only thing she can say is that there is no evidence to support this. Any way that they can try to gather better information would be valuable. As Dr. Kaplan pointed out, this is growing and it is going to spread. Therefore, they need to figure out the way to counsel people and help public health departments understand how to have people use it in the safest way possible. Is it safer to use pure CBD and not get into the THC side? Answering these kinds of questions with a focus on using it in the safest way possible would be beneficial.

Dr. Whitaker thought it sounded like some efforts on healthcare provider education could help to address these topics.

Dr. Kaplan suggested adopting a harm reduction approach as opposed to prevention or containment initiatives.

Dr. Hedlund supported all of the previous comments and offered context in terms of thinking about marijuana in the same way alcohol is currently thought about. Alcohol is common and it causes lots of problems. Trying to make it illegal in the 1930s did not work. The same thing will happen with marijuana. It already is legal medicinally in one form or another in all but four states and he predicted that it soon would be legal recreationally everywhere.

Dr. Baldwin said one of the things that has been striking to him as he has reviewed the data in terms of perceived risk is that 50% of adults used to answer “yes” the question, “Do you think daily or near daily use is harmful?” and now it is just 30%.

Dr. Whitaker asked how CDC balances the tension as a federal agency in this work when this federally non-legal substance is legal in the states.

Dr. Schier acknowledged that this is one of the issues with which they struggle. When he talks to some of his professional colleagues, they say the fact that it is a Schedule 1 makes it extremely hard to study from a research point of view in that it makes it difficult to reach the population to begin with. There are not great data from which to make informed decisions about public health issues, so they are struggling with that as well and do not have a great answer.

Dr. Compton indicated that this is a topic of great interest to the National Institute on Drug Abuse (NIDA) and to him personally in terms of the research that he has had the pleasure of conducting lately with National Intimate Partner and Sexual Violence Survey (NISVS) data and other sources. They are pleased that CDC is tackling these issues, applaud this focus, and look forward to working with CDC on these issues. He thinks the way the BSC is wrestling with the

issue of benefits is one that everyone has been wrestling with in terms of how to make sure that they study the potential uses of cannabinoids and possibly cannabis in various health issues. They are seeing a plethora of potential applications of CBD for pretty much every health condition imaginable, some of which may be quite appropriate. However, there is very little actual data to guide clinicians who are trying to navigate how to work with their patients on these areas. He suggested a couple of key issues to pay attention to, such as the comment about potentially thinking about how they have approached alcohol as an example. Tobacco regulatory issues and policies are also worth paying attention to. He expressed his hope that there would be a focus on the vector in terms of the epidemiology of cannabis, much like the vector was incorporated into tobacco epidemiology. As the industry moves toward legitimate legal businesses, there will be issues of industry influence over research that is a new concept in the cannabis area. The BSC may need to pay attention to that as well in terms of council policies. There may be opportunities for international research and international examples to help in this area. Canada is engaging in a major change in policy from which they might be able to learn, and they are not the only country. He wondered whether there might be a role for CDC in understanding how shifting policies and the regulatory environment within marijuana legalization may play a role in health outcomes. This is certainly a new idea, since law enforcement and legal penalties have been used as the primary policy approach. If it is going to be legalized, what is the variation in how states are approaching the regulation of marijuana access and whether that plays a role in the health outcomes? The issues around poisoning is a particular concern. They are seeing reports of emergency departments (EDs) in California and elsewhere dealing with a large number of patients with essentially overdoses on cannabis products. That is a new area for which there are very few data, which suggests a need for improvements in data systems and other forms of clinical and preclinical research. He said he looked forward to developing and continuing what already has been a robust collaboration between National Institutes of Health (NIH) and CDC in many areas as they try to address these emerging health issues related to cannabis and cannabinoids.

Dr. Loller asked whether any thought had been given to what kind of funding opportunities there might be and study designs that they are particularly looking at to study this issue, such as longitudinal design. There is insufficient information to make decisions about what direction to go, so she was curious as to whether CDC was going to provide particular study designs, or if were looking to the BSC to assist them with this.

Dr. Schier indicated that they are initially exploring options to acquire additional funding to support some of the work that they want to do right now. They are in the beginning stages of not only exploring where they might get that funding, but also what needs to be studied. They have gotten some great feedback so far about the risks/benefits associated with cannabis in terms of what to tell patients and communities and where to go from here. There are synthetic cannabinoids issues, increased potency, et cetera. People are putting together cannabis, CBD, THC, and different types of formulations that are beyond smoking. The concentration of THC that is in these smoking units are increasing compared to what was there 20 to 25 years ago. To answer the question, they are still at the stage of starting to figure it out.

Dr. Baldwin added that CDC has a number of very robust surveillance systems that are devoid or have insufficient questions around marijuana and marijuana use. There is an HHS-wide activity to make sure there is situational awareness about what questions are being asked and should be asked. Surveillance is a “bread and butter” topic for CDC, so they are trying to leverage across the CDC infrastructure and frankly across the HHS infrastructure, what additional questions they ultimately could parlay into subsequent activities. However, they do

not have a unique appropriation to do work in this space. Thus, they are trying to leverage existing support for their standard surveillance activities to support work in the area.

In terms of surveillance and particularly the differences between the phytocannabinoids and the synthetic cannabinoids, **Dr. Hedegaard** inquired as to whether there is appropriate toxicology testing to be able to distinguish between those two and whether they are routinely used in hospital settings. She also expressed concern because in the International Classification of Diseases (ICD)-10-CM, which is used to code a lot of medical care data and is used for surveillance purposes, no distinction is made between the phytocannabinoids and the synthetic cannabinoids. For some of the key datasets people try to use to determine what is occurring in EDs or hospital settings, there are not codes to do that. It might be useful for CDC to make a proposal to Centers for Medicare & Medicaid Services (CMS) or to NCHS about adding some additional ICD-10-CM codes so that when the distinction is known it can be coded appropriately.

Dr. Baldwin indicated that they have observed a decrease in calls to poison control centers associated with synthetic cannabinoids from a high of around 7800 to around 2200. The literature that he has read suggests that it is associated with the fact that clinicians are more aware of the clinical presentations associated with synthetic cannabinoid exposure. As part of the ORCU, NCIPC provided a bolus of funds to the NCEH to develop reference materials, calibration standards, and methodologies for making sure people are able to test for some of the fentanyl analogs that are currently in this space. They have had some conversations with NCEH about whether they could do analogous work within the synthetic cannabinoid space so that when testing is done within the ED or other settings, they are able to test for what drugs are actually present.

Dr. Cunningham pointed out that it is not only about phytocannabinoids and the other synthetic cannabinoids, but also is about impairment. Testing really has not evolved to the point that it is clearly understood. If a urine drug screen tests positive for cannabinoids, that could be from a month ago. It is not clear what this means at this point in terms of patients, preventing illness, et cetera. Further refinement is really important in terms of testing. As a physician, she emphasized that at the patient level there is a huge need to understand the risk/benefit. At the policy level, it is important to understand what super high THC means in terms of public health policies, versus home grown, versus laboratory-based. The policies are all over the place and moving forward without the data. She stressed that they have to think about this at the personal health level, as well as the state policy level in terms of what is available, allowable, and the potential risk/benefits associated with certain types of products and certain ways to deliver those products.

Dr. Hedlund suggested paying attention to traffic crash surveillance as well. It is a different avenue for finding out prevalence and risk. Marijuana testing in traffic crashes is not very good, even in dead drivers. If CDC could help out there, that would be very useful.

Dr. Baldwin acknowledged the need for better testing in motor vehicle crash fatalities. CDC's State Unintentional Drug Overdose Reporting System (SUDORS) captures the full complement of drugs on board at the time opioid involved overdose deaths historically, but the new OD2A will capture all drug overdose-related deaths, so one of the things that they are going to explore is the extent to which marijuana is also on board. They have talked in the past about this really being a polysubstance epidemic, and he thinks they are likely to see that as they better leverage what the SUDORS is providing, especially as the number of states involved in SUDORS increases.

Dr. Kaplan requested information about the marketing economics of the synthetic products in states like California that have legalized this, and whether synthetics have been displaced as states have legalized. He wondered whether there was any evidence about the changing market that might be occurring in states that have legalized versus those that have not. These are hard questions to answer, but this is an important issue to examine. This is about shifting demands and supplies as states legalize cannabis.

Dr. Schier said he did not know offhand what data may be available to support or refute that, so he probably would have to do some digging.

Dr. Baldwin said that one of the things CDC is struggling with this is that they are packaged in ways that imply safety where safety may not exist, and he agreed that these are absolutely important questions to ask.

Dr. Thomas noted that while a lot is still anecdotal, in the states where it has been legalized, there is still some motivation to keep using synthetics. If someone is in an employment position where they are drug tested, it still does not pick up on the general marijuana screen. That perpetuates some use of the synthetic cannabinoids. Another unintended consequence of legalization is that with more regulation, marijuana itself becomes more expensive. Synthetic cannabinoids also remain cheaper. Between evading drug testing and staying cheaper, it still seems to have a persistence.

Dr. Schwebel noted that speaking as a child injury prevention researcher, the most vulnerable citizens in the country are the children who might be unintentionally poisoned from these products. This should not be overlooked, given that it has broad-ranging issues. From a policy perspective, consideration must be given to whether to follow the path of alcohol and tobacco that are essentially packaged without child-resistant packaging or to follow the pathway of medication that does have child-resistant packaging took to reduce unintentional injury. Beyond policy, there are the behavioral issues, parent supervision, safe storage, et cetera. He emphasized that child poisoning should be considered as part of the picture.

Dr. Baldwin indicated that CDC is very concerned about children, particularly with regard to edibles. Some of this has to do with the modality. Obviously, children should not be exposed at all and thought must be given to adult consumers as well. Thinking about the way edibles are metabolized, one is likely to consume a lot more prior to getting the psychotherapeutic or psychoactive impact. One of the concerns is that people may be consuming a lot and then realize later they have actually consumed a lot more than they were expecting they were consuming.

Dr. Schier requested feedback on where the most “bang for the buck” would be with regard to making a short-term impact on cannabis and cannabinoid-associated issues. Is it provider education? Is it setting up programs to assess risk benefits from cannabis use, medical and non-medical?

Dr. Barnes would like to see more promotion and education awareness on the synthetics in order to have a clearer understanding. She was not sure that they had a clear understanding of all of the damage synthetic marijuana does. The notion of it being cheaper is key, because it is. In her neighborhood, they use it all of the time. She has parents calling her to tell her that their son is using this and is thinking of suicide. It has a really high impact on their mental state and behavior. There should be more promotion from CDC for educational awareness on the risk factors of synthetic marijuana.

Dr. Kaplan suggested examining the impact that policy changes occurring in the country are having on the epidemiology of cannabis use. Some people are healthy and others are not. Why are some able to use cannabis safely and others not? Thus, there should be a focus on the pathology and why some groups in the population are able to use this safely and not face the problems they have been discussing.

Dr. Whitaker agreed with Dr. Baldwin that getting better information embedded in existing surveillance system seemed like it might be the core or base for everything.

Dr. Liller agreed that they should begin with surveillance, because it is dangerous to jump straight to education programs when a lot of the answers remain unknown. They do not want to have to pull back what has been disseminated because they find out something differently later. She thought that adding to existing surveillance tools and adding targeted questions would be one of the most beneficial steps they could take. She inquired as to whether there also would be an emphasis on mental health outcomes.

Dr. Schier said he thought there definitely was an intersection between drug use, polysubstance use, and mental health to the extent of which further work can be done in studying that. Again, this will come down to funding and appropriation dollars. His predecessor, who is handling a lot of the coordination strategies, was doing mental health and behavioral science work in this area. He expects that to continue to some degree. Ultimately, the extent will be related to whether they can acquire funding to do that as there is no funding now. He called for feedback about whether they should be investing time and energy in the short- and long-term. He was hearing a lot about studying health impacts and health education, policy evaluation, and establishing better mechanisms for surveillance and data collection. He also requested feedback about who they should be partnering with and how that might be prioritized (state and federal agencies, NGOs, foundations, public safety, law enforcement, all of the above).

Dr. Kaplan observed that there were no international organizations on the list, but that perhaps they could look to other countries to try to determine the impact of long-term use. Canada would be an obvious partner.

Dr. Barnes suggested more collaboration with law enforcement, especially with regard to synthetic marijuana. In DC, they are trying very much to control the issue in 7-Elevens and gas stations. However, not enough is being done.

Dr. Schier said this would be feasible, and there are some activities underway to try to expand capability for health departments and clinicians for testing some of these agents. This is expensive, given that these are not routinely available commercial laboratory tests that are available in hospitals.

Dr. Cunningham is on a Task Force in the State of New York in terms of the recreational cannabis policies that were put forth and then did not get passed. People are struggling with what policies should look like if states are going forward with legalization. Getting information from CDC and working with states could be really helpful, because this is only going to continue to grow. It would be beneficial to inform states beforehand. She also did not think they could talk about cannabis without talking about race and law enforcement. She did not know whether this technically falls under the umbrella of CDC, but it is known that there have huge disparities in

terms of law enforcement efforts and cannabis. Moving forward, this has to be part of the discussion as well in terms of how prior criminal justice activities can be prepared.

Dr. Kaplan suggested adding businesses, given that many companies have been doing drug testing for a long time and they have a lot of experience with some of the issues that were brought up in terms of synthetic products. The private sector might be another good partner for the list.

Dr. Schier thought that might be captured under NGOs to some extent, but perhaps highlighting and calling them out in particular to differentiate them from other nonprofits may be helpful.

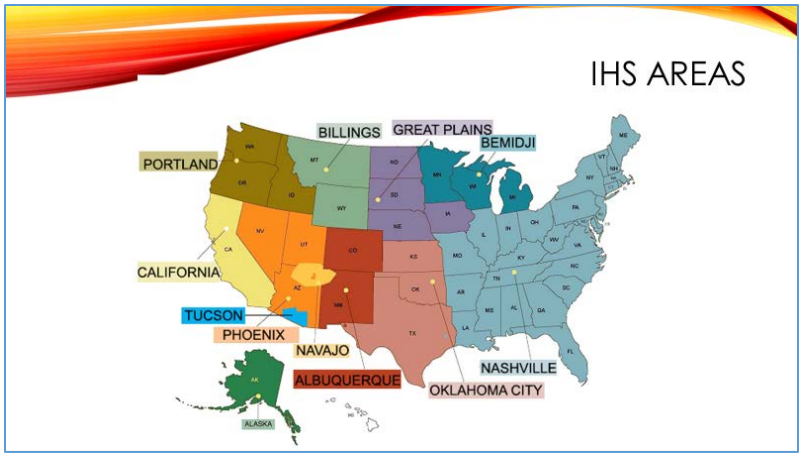
Implementation of Impaired Driving Interventions in Tribal Communities

CAPT Holly Billie, MPH
Tribal Member, Navajo Nation
Injury Prevention Program Manager, Indian Health Services

CAPT Billie provided an overview on Indian Health Services (IHS) activities related to alcohol-impaired driving. She pointed out that there were a couple of things to keep in mind as she moved through her presentation. There are 573 federally-recognized tribes across the country. The sheer number of these tribes presents a challenge. Each is a Sovereign Nation with authority to set their own laws and policies. This makes for varying numbers and levels of policies, as well as levels of infrastructure from very basic to more mature or substantial. There can be multiple jurisdictions for law enforcement and the judicial system. For some tribes, there is reluctance to share data whether it is between the tribe and an outside entity like the state, or even between programs within the same tribe.

Alcohol-impaired driving has been a huge problem in Indian Country for decades. The National Highway Traffic Safety Administration (NHTSA) estimated that two out of three crashes on reservations are related to drunk driving. NHTSA conducted a study that was completed in 2002. Given that this is the most recent data available, it would be great to take another look at that information. It also is known that drinking and driving death rates are higher for American Indians and Alaska Natives (AI/AN) than for any other racial groups. This is a major problem in Indian Country, which they are trying to address through the IHS Injury Prevention Program.

The IHS Injury Prevention Program is a very small program in terms of budget and staff within the IHS Office of Environmental Health and Engineering (OEHE) Division of Environmental Health Services (DEHS). The main program components are training and technical assistance (TA). They offer several short courses and a year-long fellowship program and provide TA to tribes in the areas of data collection, program and project development and implementation, and program evaluation. This includes partnerships, collaboration, and some advocacy work. There also is the Tribal Injury Prevention Cooperative Agreement Program (TIPCAP), which is their community-based grant program. Nearly all of the work that the IHS Injury Prevention Program does is community-based. This IHS divides the country into 12 service areas. The Injury Prevention Program provides assistance to tribes in all of the 12 areas through field staff who are located in these areas:



In terms of program components that are related to alcohol-impaired driving, a course is offered titled, "Introduction to Injury Prevention Course." This is a 3.5 day course that introduces injury as a public health problem. While this course is very basic, it covers the magnitude of the motor vehicle crash injuries in Indian Country. In addition, alcohol-related projects and studies are completed through the Injury Prevention Fellowship. The fellowship is a 12-month advanced learning experience for individuals promoting injury prevention in tribal communities. Most of the participants are IHS staff and tribes. There are two fellowship tracks, the Program Development Fellowship and the Epidemiology Fellowship. The fellowship program began in 1987. In the early days of the fellowship program, quite a few studies were conducted that included impaired driving. From 1987 to 2000, there were about 22 motor-vehicle crash studies. Most recently, there have been the following studies:

- ❑ 2007: Developing a MADD Chapter on Fort Berthold Indian Reservation
- ❑ 2011: Causes of motor vehicle crashes on Navajo Route 12
- ❑ 2013: Causes of MVC on Navajo Route 4

A few of these projects and studies are published. Some are published in the *IHS Primary Care Provider* newsletter. This year, IHS is conducting the epidemiology track of the Intervention Prevention Fellowship with the 2019-2020 class. There are three studies looking at motor vehicle crashes that include some components of impaired driving:

- ❑ Descriptive study of MVCs along Hwy 264 (Hopi)
- ❑ Develop standardized Tribal MVC Crash Report
- ❑ Tribal traffic laws and policies, a quantitative assessment

An example of a project not related to a fellowship is the "Crow Tribe Motor Vehicle Crash Site Identification Project" that was completed in the Billings Area. This project led to a tribal request for a Road Safety Audit (RSA). RSAs are supported by the Federal Highway Administration (FHWA) and require a transportation safety plan and multidisciplinary approach. In 2015, the "Crow Tribe 2015 Tribal Transportation Safety Plan" was developed that shed light on crash type, weather conditions, alcohol involvement, and occupant restraint use.

In the area of TA, the IHS Injury Prevention Program uses the use *The Community Guide* evidence-based strategies as a guide when working with tribes. They encourage the use of lower blood alcohol concentration (BAC) laws and a sobriety checkpoint program. TA is provided to tribes regardless of the source of funding. An example is funding that was provided

by the CDC Tribal Motor Vehicle Injury Prevention Program (TMVIPP) in which staff provided TA to CDC grant recipients. From 2010-2015, 8 programs were funded. Of those, 5 addressed impaired driving, 5 implemented sobriety checkpoints, and 5 worked on BAC laws. One tribe in California passed a 0.04 BAC limit in 2012.

The TIPCAP grant program began in 1997. This program provides direct funding to tribes. Tribes are awarded multi-year funding of up to 5 years to address unintentional and intentional injuries. In the last 20 years or so, TIPCAP has established 99 dedicated injury prevention positions in AI/AN communities, awarded $29 million to tribes and tribal organizations from 1997-2017, and will have awarded $31 million by the end of 2020. A recent report was published highlighting the accomplishments of the TIPCAP program titled, "20 Years of TIPCAP." Some specific examples of TIPCAP DUI prevention efforts are as follows:

- 2004-2006: Ute Tribe
  - No DUI enforcement checkpoints for decades prior to TIPCAP
  - 340 DUI arrests after the program began
  - Number of alcohol-related crashes declined from 32 to 21 during project period

- 2010-2015: Menominee Tribe of Wisconsin
  - Overall injuries from MVCs involving alcohol decreased from 75% to 33%

- 2016-2020: Northern Cheyenne
  - Teen-focused impaired driving prevention activities

Another example is the San Carlos Apache Tribe, which received funding from several federal agencies and published "Reducing Motor Vehicle-Related Injuries at an Arizona Indian Reservation: Ten Years of Application of Evidence-Based Strategies" in 2016. The work done by this tribe is a good example of a comprehensive approach to DUI in tribal communities. This particular tribe is located 110 miles East of Phoenix, Arizona. When this work was being done, there were about 10,000 to 12,000 tribal members residing on the reservation. They do have a Tribal Police Department and had approximately 12 to 28 full-time police officers during this time. From 2004-2009, this tribe was funded by CDC TMVIPP. A dedicated coordinator was hired in 2005. The primary focus of the grant is reducing alcohol-impaired driving. From 2009-2010, the tribe funded this program out of its own budget while seeking other funding. From 2010-2015, they received IHS TIPCAP funding. They currently are funded by the Bureau of Indian Affairs (BIA) to continue the traffic safety program.

In terms of program implementation, the San Carlos Apache Tribe developed a comprehensive media campaign using social marketing and paid media. Tribal and program-specific slogans and logos were used, including one logo that referenced the 390 Task Force. The 390 Task Force coordinated and carried out the DUI checkpoints. The term "390" refers to the police code for an impaired driver. DUI enforcement checkpoints were implemented. In 2007, they lowered the legal BAC. In 2011, a primary occupant restraint law was passed that became effective in January 2012. In terms of the results between 2004-2013, there were 3835 DUI arrests, MVC crashes decreased 5%-7% per year, and there was an annual percentage change in different types of MVCs (Total MVCs: -6.34, Nighttime MVCs: -7.43, MVCs with injuries/fatalities: -5.37, Nighttime MVCs with injuries/fatalities: -6.89). A glaring result that was missing from the publication was alcohol involvement in the crash. When CAPT Hollie asked about this particular result, she was told that the reporting of alcohol involvement was not consistent and there were other problems in that the data on alcohol- involvement in MVCs is not reliable. This presented

a major lesson learned for all who were involved, including the agency. This obviously points to a need for tighter data collection.

A cost-benefit study was conducted during a portion of the San Carolos program that examined medical care and productivity losses. This study found that medical care and productivity losses totaled more than $57 Million. This was a very important study for tribes in terms of showing the return on investment. The study showed that for every $1 spent on motor vehicle injury prevention, $9.86 were save in total costs for a total of $2.7 million saved. This catches the attention of any reader, whether tribal or not [Piland NF, Berger LR, Naumann RM. Economic Costs of Motor Vehicle Crashes and Economic Benefits of Prevention for the San Carlos Apache Tribe. IHS Primary Care Provider December 2010, pages 272-277].

With the current cycle of TIPCAP ending in 2020, the IHS Injury Prevention Program is gearing up for another round. The priority topic area for this program will remain as moving vehicle injury prevention and older adult falls. The motor vehicle injury prevention component will include impaired driving prevention, and they plan to follow the guideline that is outlined in CDC's "Tribal "Motor Vehicle Injury Prevention (TMVIP) Best Practices Guide 2016." They also are going to be focused more on quality, which means to the program that there will be more focused interventions and activities. In addition, they hope to conduct more rigorous evaluation.

The Injury Prevention Program encourages and fosters program sustainability for tribes. Recently, there have been a couple of new and exciting developments of tribes implementing TIPCAP-like programs on their own using their own funds. The Hopi Tribe recently announced that they will be hiring a tribally-funded Traffic Safety Coordinator. This individual will focus on child passenger safety, injury and crash data analysis, and DUI enforcement checkpoints. The way the IHS has assisted in this was by identifying priorities, providing position description information, assisting with data collection and analysis, and providing TA on countermeasure implementation. Another example is the White Mountain Apache Tribe, which has a new tribally-funded Safety Coordinator Position who will focus on child passenger safety and DUI planned activities (enhanced enforcement; participate in a national DUI campaign). IHS's role with this tribe includes data collection and analysis and TA on countermeasure implementation.

Discussion Points

Dr. Kaplan inquired as to whether there are any data on the prevalence or incidence of alcohol-impaired driving and if there are differences between wet and dry reservations.

CAPT Billie replied that this has been studied previously, but it had been so long she did not feel comfortable referencing that information. She knows of a couple of tribes who came together to assess their own communities. This topic is very sensitive to several tribes, and there is no new information available at this point. As far as she knew, that information has not been published and they have not shared that information with IHS.

Dr. Barnes requested additional information about the training in terms of the content and who is being trained.

CAPT Billie explained that the Injury Prevention Program offers a series of short courses that are approximately 3 to 3.5 days long. These are meant to be progressive and include: *Introduction to Injury Prevention* (Level 1), *Intermediate Injury Prevention* (Level 2), and *Advanced Injury Prevention* (Level 3). *Introduction to Injury Prevention* is a foundational course that introduces injury as a public health problem. It is a very basic course about intentional and

unintentional injuries in Indian Country. The second course focuses on data collection and analysis. The third course, which has not been taught in a while, focuses on how to improve programs. In addition to that are the Injury Prevention Fellowship that she mentioned during the presentation. That is the year-long fellowship that has two different tracks. The fellowship program produces projects and studies. This year, they are conducting the Epidemiology Fellowship, with 15 fellows going through this program. The attendees in these courses are IHS staff and sometimes partners. If they are working very closely with a state partner, they are invited see and learn with IHS through these courses and in the fellowship program. Those are the standard courses offered, but there also are some specialized topic-specific courses. For example, Safe Native American Passengers (SNAP) is a 1-day course that focuses on child passenger safety in tribal communities in terms of car seats and booster seats. SNAP addresses issues that are unique to Indian Country, such as Cradle Board use. They encourage the use of Native American Cradle Boards, but not while children are in a vehicle traveling. Attendees include those who are delivering injury prevention programs, tribal leaders, health professionals, nurses, community health representatives, law enforcement, tribal health leaders and directors, et cetera.

Dr. Liller observed that the issue with Native Americans having high substance abuse and alcohol levels has been an issue for a long time and continues to be an issue. She wondered whether there is anything in IHS programs that focuses more broadly than the injury issue, such as social determinants of health (SDOH), to determine why this persists.

CAPT Billie indicated that the Division of Behavioral Health (DBH) is the organization within IHS that addresses other aspects of this issue. DBH has been working for a number of years to learn more about what drives the problems and how to address them. Through the years, this particular program has been more community-based. They have partnered on several projects, but she thinks they need to work closer together to examine the issues in a different way to determine what else they can understand. She acknowledged that this has been ongoing for decades. Some improvements have been made in terms of programming through the HIS, but undoubtedly more needs to be done.

Dr. Kaplan expressed interest in the point made earlier about lowering the legal blood-alcohol limit from 0.05 to 0.04. He wondered if that was based on evidence, what impact it has had, and whether any efforts are underway perhaps to policy levers to reduce the prevalence of the problem. Some Scandinavian countries have used 0.02 successfully.

CAPT Billie replied that in terms of the backstory of the 0.04 BAC level, she happened to be at CDC at the time that this was happening. The Yurok Tribe was one of the CDC-funded tribes. There was a 0.08 discussion that went to the Tribal Council. During the Tribal Council hearings, the Tribal Council themselves decided to lower it to 0.04. To her knowledge, this was not really based on any studies that have been conducted. It was really an internal discussion within the Tribal Council. They decided that 0.04 would be what they would set. In terms of policy, it was somewhat of a challenge to get 0.04 passed, but it was passed. The police department for that very small tribe had some trouble implementing it for a number of reasons, such as jurisdiction and trying to work through issues with the California Highway Patrol (CHP). The project ended several years ago, but it would be interesting to follow up with the tribe to find out what has occurred since then. Perhaps that has been done at CDC. If not, it would be interesting to find out what happened after the law was passed and implemented.

Given the previous discussion on marijuana and the number of states that are beginning to pass laws on that, **Dr. Greenspan** asked whether CAPT Billie had any sense of how that is affecting reservations in terms of the use of marijuana and whether any increases have been observed in impaired driving from marijuana.

CAPT Billie responded that in the states that have legalized marijuana, there are a couple of IHS folks who have looked at this to some extent and found that there is an increase in marijuana use in those states. She did not know whether they have looked at states that have not legalized marijuana. They do not yet know how increased marijuana use impacts driving and how tribes are addressing it, given that they do not have a lot of information on that at this point.

Health Economics and Policy Research at NCIPC

Curtis Florence, PhD
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Dr. Florence provided an overview of the work of the Division of Analysis, Research, and Practice Integration (DARPI) in terms of how it is organized, past successes, and future plans. DARPI's mission is to reduce injury and violence by providing state-of-the-art information for decision-makers using the tools of economics and decision science. Its goals are to: 1) provide timely estimates of the economic burden of injury and violence using the most up-to-date methodology and data available; 2) apply rigorous scientific processes to plan, analyze, synthesize, and translate research to demonstrate the effectiveness of injury and violence prevention in real-world settings; 3) describe the impact of alternative prevention options to maximize the impact of scarce prevention resources; and 4) increase the understanding of economic and demographic changes on rates of injury and violence.

DARPI provides economic burden estimates for all of the major injury classifications that NCIPC uses, and has a schedule for doing so. Most of the economic burden estimates are updated methodologically on a 5-year basis, while the overall burden estimate is updated more frequently than that sometimes. This is the activity for which DARPI is most recognized within NCIPC and the injury community. However, they are involved in a lot of other activities. In terms of the second goal, economists are accustomed to policymakers engaging in efforts to respond to what they perceive as economic issues or problems. They do not necessarily consult anyone or ask for a randomized control trial (RCT) to determine whether their effort of interest is going to work. They just do things and then after the fact, economists try to evaluate whether those things worked in the way they were intended. However, that strategy is changing over time. Within the field of economics, it is becoming more common to conduct controlled experiments. The DARPI team has specialists in both of those types of methodologies, but they have mainly performed after-the-fact evaluations. In terms of describing alternative prevention options, this is the cost-benefit/cost-effectiveness analysis. They also conduct work that examines the impact of various economic and demographic changes on the injury and violence rates.

In terms of DARPI's economic burden estimates, several major changes are coming to those or already have occurred in a couple of instances. First, they are using an updated evaluation methodology. In the past, NCIPC typically used estimates of health care costs, work loss, or lost productivity. That is not the standard methodology used by other government agencies,

particularly regulatory agencies. They use a methodology that measures people's willingness to pay to avoid injury or mortality risk. For example, if the Department of Transportation (DOT) is evaluating a regulation that would prevent motor vehicle traffic fatalities, they are going to place a larger value on a fatality from motor vehicles than DARPI would in its own methodology. DARPI is transitioning to that new methodology, which will be part of really a new Web-based Injury Statistics Query and Reporting System (WISQARS™) cost module. They currently are redoing all of the estimates for the WISQARS™ cost module and will incorporate the value of the quality of life lost (QOL) for non-fatal injury, the value for statistical life (VSL) lost for fatal injury, medical costs, and work loss cost. DARPI also will be working with their programming team to change the interface for the cost module so that it will be more user-friendly, and are expanding the range of data visualization product. One of the first examples of this is a data dashboard that will present state-level estimates of the economic burden of the opioid epidemic.

In terms of evaluating injury prevention in real world settings, DARPI does not have a systematic schedule or a way of clearly identifying projects in this area that would be the most beneficial. Regarding some of the prior successes DARPI has had, they had an evaluation and a cost-benefit evaluation with the Cardiff Model. The Cardiff Model was developed in Cardiff, Wales to share ED data on violent injuries that was aggregated every 6 weeks to share with police department. The police department could use this to change their resource allocation in terms of where they send patrols and how they deal with major violence problems of assaults occurring around bars. This way, they would be able to locate which bars were having the biggest problem with violent assaults and could then change the way they allocate their patrols and other resources. This program is being adapted and adopted in various places in the US now. The way this evaluation came about is that the Division Director at the time ran into an old friend at a conference who also is the person that developed this program. In their conversations, they figured out that there were people at CDC who could help them with evaluating the effectiveness of the program. Similar types of projects have been done that NCIPC identified internally as policies that are likely to impact injury or violence in a positive way. For example, they have conducted studies of the impact of different levels of Earned Income Tax Credits (EIC or EITC) that some states adopted on CM maltreatment rates. Another focused on the impact of parental leave and abusive head trauma. DARPI is interested in determining how to more systematically identify those sorts of projects.

Regarding efficient resource use for injury prevention, DARPI primarily performs cost-benefit analyses. Prior efforts have included older adult falls prevention programs. The Motor Vehicle Team has an entire website where one can evaluate different motor vehicle injury prevention options at a policy level to determine what the costs and benefits of that would be. There also is a website for CM prevention programs that DARPI was able to find cost information for the implementation of the programs. A user can go the site, put in their own information about the number of families that would be enrolled in these programs, and see the estimated cost and benefits would be. There have been some shortcomings in terms of how to communicate those results effectively, make them more useful, and increase the adoption of those kinds of products.

DARPI also has done a fair amount of work on examining the economic and demographic impacts of injury. In terms of economics, they have done work on suicide. For demographics, the primarily effort has been on the increase in the older adult falls rate and the fatality rate from older adult falls. They have an have an ongoing project in which they are adapting a model that the Census Bureau uses to project population trends changes in the mortality rate into the future. DARPI has applied that model just to injury fatalities and also is adapting the model to

suicide and poisonings. DARPI is planning for future collaboration with the proposed Data Science Team to analyze "Big Data" and consider alternative and new data sources that DARPI can use for predictive modeling to forecast or predict changes in injury rates in order to respond to them more quickly.

Discussion Points

Dr. Kaplan was delighted to hear that DARPI is perhaps engaging in an upstream approach to surveillance using linked data, which is what he thought Dr. Florence may have meant at the end by "alternative/new data sources." He is very interested in the policy levers that are often under-utilized in public health. For example, EITC and the prevention of CM gets at the social determinants of CM. He did not know the literature on that and asked that Dr. Florence elaborate further on what is known and what the future holds in terms of looking at the social determinants of this huge public health issue.

Dr. Florence replied that in general, CM is associated with economic disadvantage. The concept or theory behind something like examining EITCs and their association with CM is that if there is any kind of policy that would address the economic disadvantage of families with young children, it has the potential to have a protective effect and to prevent CM. The concept is similar with the parental leave study they conducted. The way they tend to think about things is that if there is some indication from the research literature on risk and protective factors that there is a substantial risk factor that a policy may alleviate or will change, then they can examine the impact of that policy to determine whether there is a risk factor change and a change in the ultimate outcome as well.

Dr. Hedegaard said that she was very happy to hear that they are updating the economics component of WISQARS™ and wondered what the timeframe would be. She works at the NCHS and has had a couple of states ask her about using the economics module that is currently up on WISQARS™, but she is hesitant about it because she believes the estimates are from 2010. She wondered how to guide those who might want data now rather than waiting until the new data are available, or if the existing estimates can be adjusted.

Dr. Florence indicated that DARPI's work is going to be finished this calendar year. When it will be publicly available is out of their hands to some extent, given that they need to get studies accepted in journals they can cite as the source of information. He would anticipate that at some point in 2020, it will be publicly available. The existing estimates can be adjusted. This is one of the things DARPI needs to address with the user interface. There is a way to use the cost module to input one's own injury rates and to adjust them for inflation for a different year even though the default is to 2010. For example, the cost for 2017 can be determined now, but one would have to go to the fatal and non-fatal injury part of WISQARS™ and get the counts and input them into the cost module oneself. It is not terribly obvious to a user that that possibility even exist. He knows how to do it because somebody showed him how to do it. In the interim, DARPI could do that. If she gets those kinds of inquiries, she could refer them to him and he can help walk them through how to do that. In a future state, he would like to have are some things like a map so that if people want to know what the costs are in California, they can click on California and drill down from there.

Dr. Liller said she was glad to hear this presentation because as they know, sometimes the cost data, especially with policy analysis and decisions, often come down to money. She requested clarification about what types of analyses they are using in the economic model.

Dr. Florence replied that it is primarily cost-benefit analyses. DARPI has never done a cost utility analysis. Cost utility or cost-effectiveness is usually comparing one intervention or one alternative to another, and they do not have a lot of situations where they are comparing multiple interventions like this. For the kinds of interventions that are used in injury prevention, it is somewhat more problematic to make those kinds of comparisons. It is not quite like comparing a pharmaceutical intervention for a chronic health problem. DARPI has tended to focus on trying to help demonstrate that injury is preventable and that the benefits of preventing injury will likely outweigh the cost of implementing whatever the intervention is.

Dr. Cunningham expressed interest in the forecasting models related to poisonings and the use of "Big Data." Massachusetts has been able to link data from a lot of different types of services such as hospitals, naloxone, Emergency Medical Services (EMS), and jails and prisons to try to understand when fatalities are occurring and the target points. That is very unique and she wondered whether DARPI had thought about and/or was planning any efforts like that. This could be incredibly helpful for targeting efforts.

Dr. Florence replied that they are using the traditional economic forecasting models as a starting point, but there is a rapidly evolving field of assembling various data sources for predictive modeling. DARPI's prior experience in assembling numerous data sources has been to identify the cost of injury. Assembling a variety of data for forecasting is what they envisioned for the Data Science Team. While he emphasized that he did not want to oversell their current status, this is definitely a direction they want to take. NCIPC and the research community in general is in the pretty early years of being able to perform that kind of analysis in a way that they have been able to evaluate and have a lot of confidence.

Dr. Franklin indicated that health departments have been struggling with attaching costs to drive policy. His health department is trying to attach the cost of illness and he wondered how that related to the work DARPI is doing and whether Dr. Florence could offer any advice.

Dr. Florence noted that the work he described at the beginning regarding the economic burden estimates pertain to the cost of illness or cost of injuries estimates. To perform a cost-benefit analysis, that information is needed before ever starting because it is important to know if an injury can be prevented what is being avoided by preventing that injury. One of the things being avoided are the costs that have been identified that the injury generates. In a cost-benefit analysis, the cost of illness is actually quite a bit of the benefit, because if the injury is avoided or prevented, that cost is not incurred. That is how DARPI approaches this and it is one of the reasons they place so much emphasis on the cost of injury or the economic burden estimates, because that helps to demonstrate what the benefits would be if injury is prevented.

Regarding the forecasting models, **Dr. Kaplan** requested elaboration on what DARPI has in mind for suicide. He was trying to determine whether they were thinking about forecasting and the effects of the economic downturn on suicide. For example, it is known from European and US data that every time there is a recession, there is a spike in suicide.

Dr. Florence indicated that this is not the type of forecasting they are thinking about for this particular forecasting model. The Census forecasting model takes mortality rates by age group and models statistically the changes in mortality rates by age group, and then uses that to project what the population is going to be and what the age distribution of the population is going to be at any given point in the near future. One of the things they identified with the suicide work was that there are certain age groups that have had significant trends upward, or in some cases downward, in their suicide rates over the last decade. They have fed those data

into this model, which were not very explanatory other than having shown changes in mortality rates by age category. Then they determine whether the model is telling them that over the next 3 to 5 years whether these trends can be anticipated to continue and if so, what that would look like that far out into the future. They also have done some work on suicide and various economic variables. That work is not very recent, but that is another approach that they could take. In a statistical sense, it does tend to be pretty noisy for certain outcomes. Not so much for suicide, but it is very difficult to predict for homicides. The reason they singled out suicide in this case for that forecasting model was that for certain age categories there were such strong trends, particularly upward trends in the middle age groups and in some of the younger teenage age groups.

Dr. Barnes said she was struck by the reference to sharing data. She recalled that Dr. Florence mentioned the Cardiff Model in terms of real-world settings, and she wondered what kind of data the ED is sharing with the police department.

Dr. Florence explained that the way this model works is that if someone presents at the ED with an injury, they were asked 5 additional questions during intake, including: When did this happen? Where did it happen? Was a weapon used? and a couple of others. They would then de-identify that information and aggregate on a location basis. It was not used by law enforcement in a prosecutorial way. It was used as a way to determine where the hotspots were for violent assaults. They had a variety of interventions to try to address that. For example, they would pedestrianize the streets on the weekends in areas with a lot of bars. That made it easier for police to patrol on foot up and down the street and be visible. They use a lot of CCTV cameras in the UK, so they changed the spots where they put some of the CCTV cameras. The data was shared in a way to assure the public that it was not a “Big Brother” type of data sharing.

Regarding the bullet to explore methods of systematically collecting data to evaluate effectiveness and cost effectiveness of prevention strategies, **Dr. Whitaker** wondered if DARPI was doing anything systematic around sets of prevention strategies and cost-effectiveness. He was thinking about how in the field where he works, there is a proliferation of clearinghouses of the effectiveness of various interventions. While they absolutely need those clearinghouses, there are so many now it introduces some uncertainty because they do not always come up with the same things. He said the only one he knew of for cost-effectiveness was the Washington State Institute for Public Policy (WSIPP). He has heard some criticism and wondered whether DARPI is doing anything systematic around thinking about a range of prevention strategies and doing cost-effectiveness evaluations of those, or if it was more picking and choosing ones that they think might be promising.

Dr. Florence replied that his long-term dream is that they would have an NCIPC version of the WSIPP’s evaluation of interventions. They do a lot of good work, but they are very focused on their state as they should be. One of the issues with using their information would be that if not in Washington, it would not necessarily apply to a situation in another state. There are always issues and qualifications that must be kept in mind with that kind of information. In terms of what DARPI is doing systematically at this point, they are trying to systematically figure out what information there is at this point and the nature of that information. They tend to be focused on what is in the peer-reviewed literature and start there first. They currently are doing a systematic review of economic evaluations of a subset of injury prevention programs. The initial results are that everybody has a different definition of what they mean by “injury” and very few people in the peer-reviewed literature focus on that broad of a range of outcomes. They are usually searching

within a very specific injury type. He would characterize it as DARPI is taking “baby steps” in that direction, but it is a daunting undertaking.

Dr. Liller asked whether DARPI has worked with Ted Miller at the Pacific Institute for Research and Evaluation (PIRE). She has an injury book and he wrote a chapter on cost-effectiveness studies for different interventions for different types of injuries.

Dr. Florence indicated that they have worked with Ted Miller quite a bit. PIRE is currently working with DARPI. They have a contract with them for the quality adjusted life years (QALY) lost estimates that they are going to incorporate into WISQARS™. PIRE has done work like this for the Consumer Product Safety Commission (CPSC) for years. They have talked about how a lot of these things end up in the grey literature, which makes it very difficult to figure out sometimes even what the intervention is or what is being considered in some of the statements. If CDC is going to get behind something, the agency modus operandi (MO) is to search the peer-reviewed literature and establish effectiveness from multiple studies ideally. In the future, the work PIRE has done on the QALY is anticipated to be of great assistance to DARPI in quantifying the cost of injury.

Dr. Hedegaard noted that some of the international groups are focused on disability after injury. She wondered whether there are any plans in the future to incorporate some of those disability post-injury measures into any of the economic estimates.

Dr. Florence replied that he is calling them the QALY cost. Where the new values for that are coming from, and this will be new compared to even to what PIRE has done for CPSC, is from a study that uses data from several different countries including the US to evaluate the impact of injury. They calculate a disability-adjusted life year (DALY), which is slightly different from QALYs. Though his economist colleagues would probably not like this characterization, they are essentially the same thing. He calls it QALY because that is his habit.

Dr. Hedegaard said she was happy to hear that they are using disability weights rather than some of the other ones that have been proposed, because at least it is based on some data.

Dr. Florence added that a lot of the QALY literature is based on surveys and asking people to evaluate different types of situations that they may not have any experience with, so it is very problematic from that standpoint. However, the DALY estimates are based on clinical outcomes.

Dr. Franklin indicated that they are in the process of computing DALYs Multnomah County. There are two methods he could find that speak to calculating the DALYs below the state level and adapting down to the county level. The Institute for Health Metrics and Evaluation (IHME) in Washington provides years lived with disability (YLD) and years of life lost (YLL) for all of the states, so they have them for Oregon. However, he could only find two studies with two counties attempting to DALYs at the county level. He wondered whether there were more recent methods for identifying or computing the DALY at the county level, and he indicated that he had the papers with him so they could discuss it further.

Dr. Florence said his initial answer would be that they need to have a follow-up discussion so he could ask about some additional details. His first guess would be probably not. However, it does sound like the types of calculations that they do. They often do not find data available at the county level, but he will follow up with Dr. Franklin about that offline.

Dr. Schwebel added that the IHME runs the Global Burden of Disease Study (GBD), which is now doing the Local Burden of Disease and are looking at even smaller than the county level. They started in low and middle income countries (LMIC) where there is arguably higher risk, but he assumes that this would be extended to high income countries like the US in the future. One could debate the quality of their estimates and there are a lot of sides to that, but they are at least scientifically rigorous.

Dating Matters® : Strategies to Promote Healthy Teen Relationships

Dr. Sarah DeGue
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Behavioral Scientists, Dating Matters® Team
Research and Evaluation Branch
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Dr. DeGue expressed appreciation for the opportunity to provide a brief presentation about the Dating Matters® initiative and share its history and progress over the last 10 years, and discuss future plans. Teen dating violence (TDV) is a public health problem. Among high school students who have dated in the last year, 1 in 5 girls and 1 in 10 boys reported experiencing physical and/or sexual dating violence. TDV can involve physical, sexual, emotional/ psychological abuse or stalking. It can be perpetrated by a current or former partner in a casual or serious relationship, and it can happen electronically or in person. In addition to the risk of immediate injury or death, TDV can have serious long-term consequences for mental and physical health, and it sets the stage for violence in adult relationships as well.

To address the need for TDV prevention, CDC began work on the Dating Matters® initiative in 2009 in response to a Congressional mandate aimed at "moving the needle" on TDV prevention. This was DVPs first attempt to their knowledge to develop, evaluate, and disseminate a comprehensive violence prevention model. The first phase involved formative research and development. The Dating Matters® model is different from other strategies that existed to prevent TDV in 2009 when they started this in several ways. It is the first and still the only truly comprehensive TDV prevention strategy available. It was designed to include multiple coordinated prevention approaches that address risk and protective factors across the social ecology. In addition to preventing dating violence, it also focuses on promoting healthy positive relationships and was developed to engage local public health of the local public health sector as leaders in this work. Finally, it was developed to build on available evidence-based and evidence-informed strategies at the time rather than completely "reinventing the wheel." CDC also conducted formative research, including expert panels on evaluation design, communications, and focus groups with youth themselves in the development of the initiative. To introduce the BSC to this model quickly, Dr. DeGue showed a sneak preview of a new promotional video that they are developing. She emphasized that it is still a rough cut and asked everyone to ignore any imperfections in it. It offers a nice sense of what the Dating Matters® model is and how they talk about it:

> "Unhealthy relationships can start early and last a lifetime. The Centers for Disease Control and Prevention developed Dating Matters® to prevent TDV before it starts. Dating Matters® is based on the best available evidence about what works to prevent TDV. It is a comprehensive prevention model that focuses on 11 to 14 year olds with prevention strategies for youth, their peers, families, schools, and neighborhoods. The

> model includes 7 core components. The youth programs provide middle schoolers with the knowledge and skills they need to have healthy, safe relationships. Parent programs equip parents with skills that encourage positive interactions and communication with their children. A training was specifically designed for educators to help them understand the risk factors and warning signs of TDV. A youth-focused communications program reinforces key prevention messages through social media and events led by high-school aged brand ambassadors. Three components work at the community level to build capacity for comprehensive prevention, identify and track data on TDV, and inform local policies. Together, these components help create environments where young people can have respectful, healthy teen dating relationships free from violence. To learn more about how Dating Matters® can work in your community, visit http://www.cdc.gov/violence prevention/datingmatters."

Dr. DeGue described each of those components quickly as well. The first core component of Dating Matters® are the youth programs. Dating Matters® includes 3 youth programs for 6th, 7th, and 8th graders. The 6th and 7th grade programs were developed by CDC and the 8th grade youth receive the evidence-based *Safe Dates* program, which was one of the only two evidence-based programs for TDV that existed at the time this initiative began. All 3 programs are designed to be delivered in schools, focus on healthy relationship skills, and can be implemented by either a health educator or a teacher. The model also includes programs for parents of 6th, 7th, and 8th graders. Parents of 6th graders receive an adaptation of an evidence-based CDC-developed program called Parents Matter! The 7th grade program was developed by CDC for this model, and parents of 8th graders receive the *Safe Dates for Families*, which is also evidence-based. The programs are delivered in person, with self-guided at home sessions, or with a combination of both strategies. They focus on positive parenting relationship, education, and parent-child communication.

Dating Matters® training for educators launched online several years ago and provides training to youth-serving professionals on their role in TDV prevention. The youth communications program, i2i What R U Looking 4™, includes multiple strategies designed to reinforce key messages about healthy relationships from the youth programs. i2i What R U Looking 4™ was developed with input from 11 to 14 year olds through focus groups. A core component involves training high school age students as brand ambassadors who serve as near-peer influencers, organize community events with middle schoolers, and coordinate social media activities and an optional text message program. There also is a *Capacity Assessment and Planning Tool* available to help communities assess their capacity to implement comprehensive prevention through stakeholder surveys and to identify strengths and track their capacity for improvement over time. The *Guide to Informing Policy* helps local health departments assess, inform, and enhance local policies related to TDV with an interactive tool released in 2017. A *Guide to Using Indicator Data* was developed to help communities identify and track relevant publicly available data sources to better understand trends in TDV, identify strengths and needs, and conduct program evaluation.

Dr. Niolon, the Dating Matters® evaluation lead, discussed the next phase of this work, a multi-site demonstration project, and rigorous evaluation conducted from 2011 to 2016. A demonstration project and a cluster randomized controlled trial (RCT) were conducted to evaluate the demonstration project. There were multiple funding mechanisms involved in Dating Matters® back then and now through a non-research cooperative agreement. CDC funded 4 sites to implement Dating Matters® : California, Florida, Maryland, and Illinois. That NOFO was designed to fund local health departments in cities with a Metropolitan Statistical Area (MSA) of over a million people to choose 10 to 12 neighborhood-based middle schools in neighborhoods

with above-average crime and economic disadvantage in which to implement one of two models of TDV prevention. The local health departments that applied understood that CDC would be assigning the schools and their neighborhoods to one of those two models of TDV prevention, one of which was Dating Matters®. Cooperative agreements were awarded to Alameda County, which is Oakland, California; Broward County, which is the Fort Lauderdale area of Florida; Baltimore City in Maryland; and the health department of the City of Chicago.

Dating Matters® was evaluated in a sample of high-risk urban communities defined by above average rates of crime and disadvantage in order to address a gap in the literature. Most of the prior evaluations of TDV prevention programs at that time had been evaluated in majority white suburban and rural areas despite evidence that youth in disadvantaged neighborhoods might be at higher risk for TDV exposure because of their exposure to other crimes and forms of violence as well. The decision was made to conduct a comparative effectiveness RCT comparing the Dating Matters® comprehensive intervention to an already evidence-based intervention, which was *Safe Dates* for 8th graders. This made sense for practical reasons. They knew that with its multiple components, Dating Matters® would take more effort and resources to implement than a single component curriculum. Therefore, it made sense to see if it was significantly more effective than what was already available to communities and was already evidence-based. Additionally, it meant that students in the comparison group were getting an evidence-based program to prevent TDV, and there was not a research arm in which some students got nothing. Given that they were working in at-risk and under-resourced communities, this made ethical, practical sense to CDC as well. Therefore, the standard-of-care condition was *Safe Dates* only.

Regarding short-term outcomes, Dating Matters® was implemented in middle schools and also assessed middle school students. They have continued to follow those students into high school and are working on high school analyses now. During this session, Dr. Niolon focused on the short-term outcomes. The first round of analyses were conducted with the middle school data. Students were assessed in Fall/Spring when they were in 6th, 7th, and 8th grades. Because Dating Matters® was implemented across 4 years, there were 2 cohorts of students, those in 6th grade during the first year of implementation and those in 6th grade during the second year of implementation, who had exposure to all of the 6th, 7th, and 8th grade components of Dating Matters® that spanned the 3 years in middle school while they were implementing. The middle school analyses focused on these 2 cohorts or grades of students. If they were in the Dating Matters®, they got full exposure to the Dating Matters® curriculum.

There are 4 papers on the middle school outcomes. Given the complexity of the analyses and the amount of data, there is not a journal where they could fit all of these findings into one paper. The first paper, published in May in the *American Journal of Preventive Medicine*, looks at the 4 primary outcomes of the study. The 3 papers on the secondary outcomes are currently under review and are grouped according to the content or type of behavior. The middle school analytic sample is the first of the two full exposure cohorts who had the opportunity to participate in Dating Matters® fully if they were in the group that was randomized to get Dating Matters® in 6th, 7th, and 8th grade. The full sample was over 3000 students and was a diverse sample with slightly more females (53%). That is the full sample that was used in all 3 secondary outcome papers. For the paper on the primary outcomes, which are TDV and relationship behaviors, they only asked those questions of students who reported having dated. To have to be in that “only daters” sample for the first paper, they had to have reported dating at least once in middle school, or at least their definition of dating.

The statistical analyses were relatively complicated, so Dr. Niolon simplified it for the time available during this session. First, they imputed missing data. They had both planned and unplanned missing data, resulting in a lot of missing data and necessitating the need for this step. After the data were imputed, they used multiple group structural equation models (SEM) using latent variable modeling approaches for each outcome. There are 8 groups for each model or outcome, the 2 cohorts, and boys and girls in each cohort. They also compared the Dating Matters® versus standard-of-care students. Dr. Niolon showed graphs of these comparisons for the first outcome paper. There are 4 graphs for each outcome, one for each combination of cohort and gender, and then comparing within each graph Dating Matters® and standard-of-care across the 6 time points in middle school. There also was a graphic for each paper in which they put the results into one summary slide to show you the average risk reductions for the Dating Matters® students on variables where they found statistically significant differences between the groups. These average risk reductions represent the average across groups and across time points of percent improvement, or in this case reduction, for each outcome for students who received Dating Matters® relative to the comparison students' scores.

The first paper on primary outcomes was just published a couple months ago. The purpose was to assess the effects of Dating Matters® compared to the standard-of-care students on TDV perpetration, TDV victimization, use of negative conflict reduction strategies, and use of positive relationship behaviors. Based on the graph for TDV perpetration, to facilitate comparisons across items, these are latent variables within each variable and across variables. All of the outcomes are scaled on a percent of maximum score scale. The time point averages for TDV perpetration represent the percent of the maximum possible score on a scale of 0% to 100%, with 0 meaning no reports on TDV at all of any of those behaviors at any time and 100% meaning a student reporting every behavior at the maximum frequency. These are low percent maximum scores showing that there are low base rates for TDV perpetration across middle school. Among all groups at most follow-up time points, the Dating Matters® students were recording lower TDV perpetration scores than the standard-of-care students. For TDV victimization, at each follow-up point all groups were reporting lower TDV victimization scores than the standard-of-care group. For the use of negative conflict resolution strategies, 3 of the 4 groups had significant differences at most time points. One group of boys in the first cohort did not show significant differences. They hope to conduct future analyses to try to figure out what was occurring with that one cohort of boys. Dating Matters® students relative to the standard-of-care students reduced risk for TDV perpetration by 8%, TDV victimization by 10%, and negative conflict behaviors by 6%.

As noted earlier, the secondary outcomes papers are currently under review and were not included in the slide set because there are embargos since they are under review. Dr. Niolon presented highlights to the BSC to give them a sense of the effects on some other outcomes that were not the primary aim, but could reasonably be expected to change based on the Dating Matters® intervention. The first secondary outcomes paper looks at bullying, interpersonal violence outcomes, bullying victimization perpetration, cyber bullying perpetration/victimization, and physical violence victimization/perpetration. The lead of that paper is Alana Vivolo-Kantor, PhD. The next secondary outcome paper looks at weapon carrying, alcohol and substance use, and other delinquent behaviors and is led by Lianne Estefan, PhD. The third secondary outcome paper in middle school looks at sexual harassment, violence victimization, and perpetration and that is led by Sarah DeGue, PhD.

In terms of the significant findings for the first paper, Dating Matters® reduced risk for adolescent peer violence between 5% to 11% on average across time points and across groups compared to the effects of the *Safe Dates* program. They did not find effects for bullying victimization and physical violence victimization. For the second outcome paper, Dating Matters® reduced risk for adolescent delinquency and related risk behaviors at around 8% to 9% on average compared to the effects of the *Safe Dates* program. For the third secondary outcome paper, Dating Matters® reduced risk for peer sexual violence and sexual harassment outcomes compared to the standard-of-care *Safe Dates* program.

In terms of what this all means, they are excited to say that they think it means Dating Matters® is effective. There are low base rates in this age group for a lot of these behaviors, which is to be expected. These are 6th, 7th, and 8th graders. As noted earlier, they are following the sample into high school and expect to see base rates increase and hopefully will continue to see program effects. At the end of middle school, they know that Dating Matters® has small but significant effects compared to the standard-of-care for primary and secondary outcomes. This is important in that they designed this program to prevent TDV as the mandate from Congress. Given the social/emotional learning strategies that are in the Dating Matters® intervention and the focus on respect for oneself and respect for others, it made sense that it could be expected to affect some of these secondary outcomes as well. This is particularly exciting for the DVP because it is very much in line with their strategic vision that focuses on connecting the dots and says that single evidence-based strategies that address multiple outcomes of violence may be more cost-effective and sustainable for communities than having a separate program for each outcome.

Dr. DeGue described the next phase of this project now that they have some evidence that it is effective, which is to move to that final piece of the public health model of ensuring widespread adoption. There are a lot of challenges involved in a national roll out of a model that is as large as Dating Matters®. In an effort to address those challenges head-on, they developed the Dating Matters® Toolkit. The Dating Matters® Toolkit is a comprehensive implementation guidance package designed to reduce costs, increase sustainability and fidelity, and make Dating Matters® more feasible for more communities. The toolkit will be housed online in a new web portal available on Veto Violence and it includes a new guide to implementation that will help communities prepare for and stand up this comprehensive prevention model at the community level. It also includes a new online program facilitator training that replaces a resource-heavy in-person training model that was used in the demonstration project and will also provide for the first time public access to all of the youth and parent program materials that are part of Dating Matters® that were developed by CDC. It also includes a training manual for Dating Matters® coaches, which is a new role developed to support and supervise these program facilitators in the field that replaces the TA contractor model that was used in the demonstration project to accomplish that. Finally, there is the *Guide to Indicator Data* that was mentioned earlier that will be released and a new online Community of Practice (CoP). Dr. DeGue highlighted a couple of these components.

She shared another sneak preview of what the new toolkit website will look like. One enters the page and will see the Dating Matters® town on which each of the components of Dating Matters® is situated in its place within the community to give the sense that this is not one program, but it is something that happens throughout the neighborhood or community. There are pieces that happen at home, at school, and at the health department for example. The site can be navigated by component or by role, which is another drop-down menu that would pop up at the bottom (Youth Program Facilitator, Prevention Lead, Coach, et cetera).

Clicking on one of those components brings up a page that talks more about that piece of the puzzle. For example, the Youth Program sub-page has a link to an "At a Glance" document. That is a new component that they also added that provides high-level information about each piece of the Dating Matters® model so that it can be used to get a sense of how interested someone is in looking further at the large amount of information that is available. It also is a way to engage partners and inform decision-makers to get other people on board at the appropriate level with an understanding about what this model does and the resources involved in implementing it. There is a box that says "Learn more about Youth Program Facilitator role" that links to a role page that will then walk through everything one would need to carry out this component of Dating Matters® as a Youth Program Facilitator.

New online interactive training was developed to replace an in-person train-the-trainer (TTT) model for Parent Program Facilitators and Youth Programs Facilitators that required 40 hours of in-person training and a demonstration project. They found that this was not going to be sustainable for CDC to fund continually or manage, or for communities to implement in a sustainable way over time. This training was developed to accomplish that. Dr. DeGue shared a quick clip from that to give the BSC a sense of what it looks like. The training includes video demonstrations, quizzes, activities, and some other written content. It stars real facilitators from the demonstration project and shows what real sessions will look like using child actors from youth programs or adult actors for the parent programs. The training online takes about 10 hours to complete instead of 40, but that includes not only this online content but one-on-one in-person sessions with the Dating Matters® Coach, the new role described earlier. It is a combination of both in-person one-on-one activities with some role-playing and other things in addition to the core content being delivered through this training.

The last piece Dr. DeGue mentioned was Team Up!, the new online CoP that will be accessible through a free mobile app or computers. It will connect communities that are implementing Dating Matters® for peer-to-peer support and will allow interaction with two of CDC's resident experts to give some additional feedback, answer questions, and offer support. The CDC Dating Matters® Team will be on there as well to do the same. They are excited that this will be available and hopefully will provide some of that additional support that communities may need and connections with each other to share lessons learned and so forth.

They are very excited about the Dating Matters® toolkit with all of these pieces described. The new tools, materials, and guidance is set to launch by early September if all goes well just in time for back-to-school. Now that they know Dating Matters® works and they are getting ready to do this national dissemination, they are entering a new phase of the Dating Matters® initiative looking toward the future. In line with that, Dr. DeGue raised the following topics for discussion and indicated that they would be happy to answer questions about Dating Matters® as well. The topics for discussion/suggestions included:

- Increasing reach and uptake at launch
- Balancing improvements with adherence to model, as evaluated
- Opportunities for future research
  - Implementation research
  - Low-cost RCT
- Understanding the implications of cost and cost-effectiveness

Discussion Points

Dr. Liller indicated that a lot of her background is in health education and injury prevention and that she knows how hard these programs are to develop and get started. She congratulated Drs. DeGue and Niolon on the results. She asked whether they used the framework of Intervention Mapping to develop Dating Matters®. They have a program called It's Your Game: Keep It Real (IYG), which is extremely similar They are from the University of Texas. Dr. Bartholomew Eldredge has a book on Intervention Mapping. It is variety of health behaviors, one of which is violence. It is the same grade range and they do all of the same community things as in Dating Matters®.

Dr. Niolon said she had heard of that program, but probably was not as familiar with it as she should be. The CDC program was basically developed with a couple of things in mind. The first was DVP focuses on primary prevention and most or all of the prevention programs that were available for TDV at the time focus either on late middle school or high school students with a school-based core curriculum model. That was 2009, so it has been a while since their development phase. About a decade ago when they were doing this, the two programs that were available specifically for TDV were *Safe Dates* and *The Fourth R: Skills for Youth Relationships.* DVP wanted to focus on middle school students. Other programs since then also have delved into the middle school arena, but that was why they made the decision to focus a little bit earlier for primary prevention purposes. They based the components off of the fact that in other areas of violence prevention it is known that multi-component, comprehensive models are more effective for long-term outcomes than single-shot approaches. They based their development of the components on the social ecological model.

Dr. Liller indicated that Dr. Bartholomew Eldredge's program is also middle school and has a lot of similarities. It might be worth investigating. There are probably differences but maybe CDC should consult with her. She asked who implements this program in the lead position. The concern is that it is extremely difficult to get programs in schools. She wondered how they anticipate the rollout of this program, given that it has a lot of moving parts.

Dr. DeGue indicated that the Dating Matters® implementation was developed to be led by public health departments, and that is how they operated it in the demonstration project. The idea was to engage the resources and connections of the health department and leverage those to create this kind of community-level approach. The youth programs are implemented in the schools, but the overall implementation is led by the health department. They have adapted the model slightly for the rollout to make it possible for other organizations that might have the capacity and partnerships available to lead this overall implementation of all these pieces. They would have to partner with schools to implement the youth programs. The field is starting to move away from school-based programs, so it is also possible to implement these youth programs in community-based organizations (CBOs) like the YMCA.

Dr. Liller pointed out that what generally happens is that comprehensive programs are great, but different pieces get implemented. The easiest part will be implementing, but the harder part will be to facilitate all of this. She wondered whether they would be considering in the evaluation design whether all of the pieces are needed. In reality, what is going to happen is that people will be unlikely to do the whole thing.

Dr. DeGue said that there are two considerations for that. The original evaluation was not able to look at the different components and the effectiveness of each. It is just the entire Dating Matters® package versus *Safe Dates* only. They hope in future research that they may be able to parse that out a little bit and understand the effectiveness of different components. The second thing is that they did understand that as they move this into the field and are no longer funding communities to do it and not controlling how much of it they do, there may be communities, organizations, or schools that want to do just a piece of it who do not have the capacity to do a comprehensive prevention model. They designed it through the toolkit to be accessible and for implementation of only certain components if that is what people choose to do. It has all of the tools there in the guidance to encourage people to at least move toward implementing the entire comprehensive prevention model, because that is what the evidence is. They do not have evidence on each of the components. They are both encouraging the comprehensive prevention implementation, but also understanding that not every community organization is going to be there yet, and they may just want to start with a few pieces of this. Given that they are all evidence-based or evidence-informed in some way to begin with, they feel like in most cases, that is still going to be a good option compared to some of the other tools that are available in the field.

Dr. Niolon added that their hope is that those implementing the program would conduct an evaluation if they choose not to do the whole thing. Certainly, if CDC is reached for TA or assistance or consultation, they will emphasize the fact that the initial evaluation findings from the RCT were based on the entire package, not components.

Dr. Cunningham was struck by the relative risk reduction and the absolute risk reduction. While it is statistically significant, she wondered what their take was on clinical and public health significance. The proportion who are dating in middle school is low, and data show that dating now happens even later in life. Therefore, it was not clear where the most "bang for the buck" would be. She also was curious as to the diversity of dating that is included in this in terms of how sexual orientation and gender identities were taken into account.

Dr. Niolon acknowledged that these effects are statistically significant and small. It was important to her to be able to follow these children past middle school into high school, because the sample has more than average kids reporting that they are dating. That was left up to them to define. CDC defined it in their measures and in the program relatively broadly as the youth's definition of whatever dating was to them. A number of kids were reporting that, but it is still different for what a 7th grader calls dating and what a 10th or 11th grader calls dating. This is exciting, especially on TDV itself. She knew they would have low base rates in these middle school years, so it is exciting to see that there are even statistical differences. In some ways, that is clinically significant because youth are just starting to have dyadic relationships apart from parents and school where things can actually sort of happen and get out of control. It will be important to see, once the implementation and program stops, what effects there are as they grow up and actually start developing more mature, intimate dating relationships. They did ask about sexual orientation, sexual identity, and sexual attraction in the high school survey. We were told early on that there was no way to ask those questions of 6th, 7th, and 8th graders. They could debate whether it is even developmentally appropriate to ask about sexual attraction to a 6th grader. While they did not ask those questions in middle school, they do have them on the high school survey. They will be able to look at that as they move forward looking at the high school data. The program itself was developed with an eye to keeping very gender-neutral. Most of the names and the examples are gender-neutral.

Dr. DeGue added that the other piece about the effect size being so small is that they have to remember that the comparison condition is an evidence-based intervention already, so they can think of these effects as being on top of the effects that they assume *Safe Dates* alone has. *Safe Dates* has been shown to have effects on dating violence, victimization, and perpetration through a 4-year follow-up. That already has a decent effect size and this is on top of that. Unfortunately, they were not able to look at the absolute effect size. It is just relative to an existing standard-of-care.

Dr. Barnes said that she was not so concerned with the evidence base. Implementing this in schools is great just to get the conversation started. She wanted to know more, but said she would give Drs. DeGue and Niolon a call because she had so many questions. She just found a way of getting into the school system, which she has been trying to do in the Montgomery County School System of Maryland, which is the 14th largest county in the country.

Dr. Franklin applauded this effort in doing this demonstration study on populations that are not normally considered in these studies. Given that most of the sample was African-American and Latino/Hispanic populations, he wondered what they did to take into consideration cultural responsiveness and the ideation and conceptualization of dating among not only 6th, 7th, and 8th graders, but among African-American and Latino students. He also wondered what was behind the decision to roll the program, out before determining the effects into high school.

Dr. Niolon responded that in terms of kind of how they factored in cultural responsiveness, there is always more that can be done. The *Safe Dates* and other programs that provided the basis for this were not a demographic racial/ethnicity match for the communities that they were in. The formative research phase involved a lot of focus groups with youth from these exact same communities, but not the same neighborhoods that were included in the RCT, where they talked about dating, how they think about dating, what terms they use for dating, what it looks like in their communities, what their families say about dating, et cetera. All of that was used to inform the development of the parts of the curriculum that CDC developed. Certainly, the communications campaign was delivered by brand ambassadors who were high school students and were older than the middle school students. The messages the qualitative research did in the beginning also informed the development of the other pieces of the curriculum and program comprehensive model that CDC was developing.

Dr. DeGue added that they also built into the *Implementation Guidance* a lot of adaptation guidance so that as communities pick this up and they see pieces that need some tailoring to better meet the needs of their specific community, they have some guidance on how to do that without changing what are thought to be the core components of these programs. It still has a ways to go. She thinks of it as not necessarily having been developed for the communities in which it was evaluated, but developed to be a base program that was evaluated in these communities because that was a major gap in the field, but that could hopefully apply to all communities with some adaptations and tailoring. In terms of rolling it out now prior to having the long-term results, they actually started the process of thinking about the rollout and preparing for it several years ago, even before they had the final results from the middle school trial, because it takes several years to put all of this together. Their thinking in releasing it now is that they do have some evidence that it is effective, and there were a lot of communities that were asking for this information. Now they want to do these programs, they want to use some of these other components, and several of the components are already have been implemented for two or more years. They felt like it was appropriate to put it out there in the context of the level of evidence that is available now, and then hopefully continuing to expand upon that, which they will do for several more years. If they hold out on releasing it until they have all of the data

published, it could be a while. They felt like the balance of the risk was better to make it available sooner rather than later in the context of the available evidence. Many communities and many schools are still doing prevention strategies, if any at all, that do not have any evidence base. At least this is an evidence-informed model that was developed with a lot of thought and care that now has some evidence that it works.

Dr. Whitaker observed that this obviously was a huge amount of effort and that they now have very promising results. He wanted to hear more about what if any further research is planned on the model. He suggested that they should, and that they owe it to the field, to do more in terms of effectiveness, implementation, and cost-effectiveness research. He was hearing that they have done a great job on an important problem and have statistically significant and clinically marginal improvements over what is already available. CDC can say that it is effective and people will believe them, but if he did this, he would have to submit this to Blueprints and it would not "cut the mustard" there yet. It would need additional trials. He pointed out that when they talk about something being effective, they have to be cognizant of what is available and what the standards are in the field. He would really love to see more research on this, including all of the things CDC is aware of that should be studied, such as the component analysis. In terms of cost-effectiveness, there is a lot in this. It is compared to *Safe Dates*, which is much simpler. He is sympathetic to the way they had to design this, but he thought in some ways they probably "shot themselves in the foot" by comparing it to *Safe Dates* because there were only marginal improvements over a known effective program. It would be great to see the cost-effectiveness data to see how much they are spending and what additional improvements they are getting. The last thing he emphasized was implementation research. While he understand that what they were doing was what they were able to do as a federal agency, it really is not consistent with what he would say are best practices of implementation science now on how to implement programs. There is always a tension between reach and rigor. They are doing something for implementation that has potential for huge reach, but it is not clear what the yield and rigor will be. As Dr. Liller pointed out, there is research that show that people tend to cut out the components that matter most because they are the hardest and most expensive to do. They are starting to build something that has incredible potential, but he expressed his hope the DVP and NCIPC would continue to plug along on the research needed on this program so it can realize its potential. He asked whether there are any immediate plans for a next step in research, or if they are moving more toward making the materials available and taking the "see what happens" approach.

Dr. DeGue replied that at the moment, they are focused primarily on disseminating this on some usability research to get some initial feedback from users on the model itself and the toolkit. They do not have any firm plans at the moment for what that future research will look like, but what they have been talking about is more along the lines of implementation research, specifically trying to identify communities that are using Dating Matters® in some way, whatever their version of this is, understanding how well the toolkit worked for them, helping them to implement it the way that it was designed, and determining whether there are pieces that they are choosing not to do and why. That kind of research is one of the major things they have in mind for a next step. Perhaps they could conduct a briefer RCT in which they look again at communities that are using this model to examine a real-world version. They have completed a cost evaluation, which they are hoping to publish soon. The cost evaluation focuses on the cost of implementing Dating Matters® in the model that they are rolling out, so as designed for dissemination, and comparing that to the cost of *Safe Dates* using some of the data from the demonstration project combined with the understanding of the estimation of the cost of using the model. For example, rather than including the cost of doing the in-person training, they would include the cost of doing the online training to understand what the real-world costs would be for

people going forward. In the future, they are planning on doing the cost-effectiveness analysis using the long-term high school outcomes in order to see the full effectiveness at that point and hopefully get a better idea of the cost-effectiveness. They do anticipate it being a challenge to show relative to something like *Safe Dates*, which costs much less and is already effective. That is what she was getting at earlier—this idea of there being these intangible or hard to measure outcomes that do not necessarily show up in the measures of effectiveness and thus throw off the cost-effectiveness model as well. Hopefully, that will be out in a year or so.

Dr. Schwebel agreed with a lot of what had been said. In terms of reach and uptake, there are going to be challenges. Requiring 10 hours of training for a facilitator and all of these sessions are going to be hard in communities and schools. However, he encouraged them to go forward. He also agreed with the notion that that it will be cut back, so conducting future research on a scaled-back version is much more realistic. One point that had not been made was that they all know how important it is for children to see people like themselves, so he appreciated the diversity in the media and clips. While he expressed his hope that this did not come off inappropriate, it really struck him that the youth were very skinny and do not represent the obesity in urban schools and in the country in general. He encouraged them to work with the media team to get at diversity of size.

Dr. Eckstrom agreed that this was a really phenomenal effort. If public health departments are to be the champions for this work, she wondered whether consideration has been given to conducting some qualitative interviews with people who are completing the 10 hours of training and the roll out to get their feedback and let them help show CDC how to craft future versions or improve the feasibility of this. It seems like early adopters in public health departments are going to be critical in helping understand how well this can roll out and a bigger scale.

Dr. DeGue indicated that they are doing that and hope to do some more than future. As they were developing the toolkit, they actually did some interviews with people who were involved in the demonstration project to understand their feedback. They conducted interviews with people from the health department, and people who facilitated the programs at all levels to get their feedback on what they saw in the original model that could be tweaked, that could be improved, and what kind of tools they think would be helpful for rolling it out publicly. They incorporated the feedback at that point and that is reflected in the toolkit now. Right now, they are actually in the process of developing an *Interview Guide* to interview some of these early adopters or even a little bit pre-adoption. Not necessarily people who have completed the training, but people who are interested in Dating Matters® who are exploring it and are the kinds of people at the health department or in community organizations that they want to target with this program as implementers. So, they are walking them through the toolkit website, looking at all the materials, and getting their initial feedback on what is there, whether it seems like it meets their needs, and importantly whether it seems feasible to them. They know that perceived feasibility is really important for someone to take the additional step or make the effort to actually work toward real implementation. This is big and it is a lot, so they really worked hard at trying to make it seem less overwhelming. The first test will be those interviews. They also are going to collect some general usability data off of the website. Probably in a year or so after some people are using it, they will do the same thing with actual users to try to assess how it is working for them. Kind of implementation research, but not so much research more like implementation interviews or data collection around how they are responding to it and where they think CDC should focus its efforts as they move toward evolving Dating Matters® and think about how they might change the model to make it more feasible in the future.

Dr. Niolon added that when they started this project and in planning for the demonstration project, at that time local health departments were not always in the arena of TDV prevention. So, the capacity and readiness piece that was developed in the formative research phase and then launched tried to take into account the health departments' experiences as they were happening when the demonstration project was being rolled out. As the health departments were partnering with schools and communities in all of the work that they were doing, the Dating Matters® Team had regularly monthly and sometimes weekly calls with the health department folks in the studies as they worked together through the demonstration project. There was a lot of opportunity for informal feedback that kept getting incorporated into the capacity and readiness piece that really was developed based on health departments. It really is applicable across different types of organizations in communities that might be interested in spearheading this work.

Dr. Hedlund prefaced this by saying that he knows nothing at all about the subject they were talking about in terms of school-based programs and so forth, and to consider these the comments from somebody who has grandkids in middle school. He agreed that not only were the actors very skinny, but also were very articulate. They sounded much more straightforward than most middle school children he has heard. He suggested adding lots of "um" and "you know" and "whatever." From his mathematical background, he emphasized that evaluation will be critical to determine whether this intervention is useful as they extend to the high school age, and in terms of the various ways in which it will be implemented. They are dealing with a problem that is about a 5% problem and with about a 10% effect on that problem. That is a half a percentage point, which is not a lot if trying to sell an expensive program.

Dr. Compton wondered whether there might be any crossover effects on other significant outcomes.

Dr. DeGue said that that the ones they know about so far are the ones Dr. Niolon talked about, but there are other outcomes that they have measured.

Dr. Niolon added that the ones they focused on in the secondary outcome papers were other related risk behaviors that are known to be related to TDV and for which they might expect to have seen change based on what was in the intervention. They have a pretty broad student survey. All these outcomes are from that. They collected data from educators also, which they have just barely started to look at. Within the student survey, there are a number of other outcomes such as attitudes toward gender roles, attitudes toward dating violence, knowledge of the truth about dating violence, myths, and some other things like that. In the high school survey, they added a number of constructs that they were asking about. They added YRBS questions on dating violence and sexual violence within dating relationships in the past year and would mirror the YRBS estimates. They asked about the context in which TDV was experienced, and a number of other things.

Dr. Barnes wondered whether there is a component that could be added in the future, such as empathy-building, so that the youth will take responsibility of helping one another and having empathy like they do in Sweden. In Sweden, each child has an hour a week of learning how to have empathy for one another. Empathy-building might give the students more of an active role in prevention of some of these things.

Dr. DeGue indicated that the youth programs include social-emotional skills that are not specifically empathy-building but do talk about communication skills, anger management, and general relationship skills that are not specific to dating relationships. Some of those touch the area of empathy. There also are some components in the programs that talk about helping behavior, such as helping a friend who might be a victim of TDV.

Dr. Cunningham indicated that her health center has a very large school-based health program, and she wondered whether that would be an interesting intersection from the standpoint of studying this and implementing it.

Dr. Niolon replied that as part of the demonstration project, the health departments were funded through a non-research cooperative agreement. That meant that they were agreeing to participate in the research that CDC was doing, but they had a good deal of latitude in how they decided to implement it. At the time they wrote that NOFO, they hoped that the schools were going to implement the youth programs with teachers. One site decided to do that, but other sites did it differently and brought people in. In the site that used teachers, CDC had a really great connection with the schools. The health department has actually funded a Head Prevention Specialist in the school system to be on the project and facilitate that relationship with the schools. They have not been able to look at site-by-site differences yet, but hope to do so at some point in the near future. That school really engaged their school health and prevention curriculum. At least for implementation purposes, that made it a lot easier and there was a much more successful early start in that school system.

Dr. DeGue added that in the school system where they use teachers as implementers, the cost was also substantially lower because there was not an additional cost of Youth Program Facilitators, so that would be a recommended approach for that reason as well.

Agenda-Setting for Next Meeting

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

Dr. Greenspan reminded everyone that the agenda-setting template was created previously to help the group work through agenda-setting ideas for topic areas for future BSC meetings. The following suggestions were made:

- Consider establishing a Working Group (WG) or providing a presentation focused on the state-of-the-art of analyses pertaining to structural violence:
    - At the state, institutional, clinic, educational (particularly in the African American community, which can lead to aggressive behavior, particularly homicide), policy, and other levels that potentially lead to harms such as ACEs and adverse life experiences
    - In terms of the fact that there is no equity metric yet to assess access to funding, funding levels, who is receiving grants to assure and rule out funding disparities based on race, gender, or type of institution
    - This is critical to a deeper understanding of the problem
    - Structural determinants are antecedents to social determinants

- Provide further information on the VACS surveys:
  - The BSC thought it would be interesting to hear some domestic and global comparisons
  - The program noted that there are no comparable data in the US, although there is an older survey that has some similarities; the methodologies are different, so there would be a lot of caveats
  - Share the findings from the formative evaluation funded by the Robert Wood Johnson Foundation (RWJF) that included an expert panel to provide input on the development of a domestic VACS and what the methods would look like for household surveys in the US compared to Nigeria, and site visits in North Carolina and Colorado to get feedback from people on the ground

- Discuss suicide in terms of:
  - Firearms
  - Some of this information is available from the NVDRS work as there is a firearm component and new states have been added, so an update on this would be helpful
  - There has been some strategic planning, especially given the reorganization, so perhaps this and NVDRS can be included as part of that
  - NVDRS is able to tell the story of a suicide better than Medical Examiner (ME) reports, especially when there is a homicide and suicide in the same incident
  - There should be a cautionary note about the fact that narratives can be one line to many pages, and that it is important to capture precipitating circumstances

- Discuss plans for the future regarding innovative syndromic surveillance platforms in terms of:
  - The topic areas of suicide and drug overdose
  - Big data
  - The strategy CDC is developing/implementing
  - NHTSA's revision of their FARS data collection to improve the drug data
  - The charge within the federal government to assess all of the data being collected and consider partnerships to leverage each other's work versus every agency having its own separate surveillance systems

- Devote a portion of the meeting specifically to the firearm discussion in terms of its pertinence to everything NCIPC covers, including:
  - Violence
  - Violence against children
  - Suicide
  - Gaps and what else needs to be done

- Build on the discussion from earlier in the day pertaining to marijuana:
  - Consider having a presentation from sister agencies such as NIH or the Substance Abuse and Mental Health Services Administration (SAMHSA) on marijuana as NCIPC moves into the marijuana/cannabis space
  - Dr. McCance-Katz at SAMHSA has made marijuana/cannabis a major theme for her policy efforts

- ❑ Discussion the potential need for an Opioid WG

- ❑ Have a session on building general injury prevention and surveillance skillsets at the county, city, and state levels:

    - ➢ NCHS could discuss some of the work they are doing in terms of building skillsets for ICD-10 codes

- ❑ There needs to be a discussion about the Secondary Review process in terms of the following:

    - ➢ Goals
    - ➢ Information needed from programmatic staff to carry out those goals
    - ➢ Regulations governing Secondary Review need to be shared more fully
    - ➢ Dr. Greenspan will take these comments back Dr. Mildred Williams-Johnson, the Director of the NCIPC Extramural Research Program Office (ERPO), and perhaps they can take this up in a separate forum

Public Comments

No public comments were provided during this meeting.

Announcements / Adjournment

Dr. Greenspan thanked the BSC members who were retiring and presented them with plaques. She expressed appreciation for Dr. Eckstrom's contribution and great experience that she brought to the BSC, and especially for her stepping up on the Opioid WG. She thanked Dr. Comstock for her contributions and service to the BSC, particularly with regard to concussions. She also thanked Drs. Vaca and Tuggle, who were unable to attend the meeting. She emphasized that the BSC has been highly active for the past couple of years, has produced great work, and has provided beneficial input. Dr. Eckstrom said that it had been a total pleasure and she thoroughly enjoyed getting to know everyone in this group. She thanked Dr. Greenspan and CDC for allowing her to be part of what they have been doing together over the last few years.

With no announcements made, further business raised, or questions/comments posed, **Dr. Whitaker** thanked everyone for their attendance and participation and officially adjourned the thirtieth meeting of the NCIPC BSC at 3:47 PM.

Certification

I hereby certify that to the best of my knowledge, the foregoing minutes of the July 17, 2019 NCIPC BSC meeting are accurate and complete:

09/19/2019
Date

Daniel Whitaker, PhD
Chairperson, NCIPC BSC
Professor, School of Public Health
Mark Chaffin Center for Healthy Development
Georgia State University

Appendix A: Meeting Attendance

BSC Members

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

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

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

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

Elizabeth Eckstrom, M.D., M.P.H.
Associate Professor of Medicine
Division of General Internal Medicine & Geriatrics
Oregon Health & Science University

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

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

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

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

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

Debora Daro-Tuggle, Ph.D.
Senior Research Fellow
Chaplin Hall
University of Chicago

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

Ex-Officio

Brodowski, Melissa, Ph.D.
Senior Policy Analyst
Administration for Children and Families
U.S. Department of Health and Human Services

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

Garrison, Shadia, M.P.H. (delegate for CAPT Jennifer Fan, Ph.D.)
Special Assistant
Centers for Substance Abuse Prevention
Substance Abuse and Mental Health Services Administration

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

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

Amy Leffler, Ph.D.
Social Service Analyst
U.S. Department of Justice

Constantinos Miskis, J.D.
Bi-Regional Director
Administration for Community Living

RADM Kelly Taylor, M.S., R.E.H.S.
Director, Environmental Health and Injury Prevention
Indian Health Service

Christine Schuler, Ph.D. (delegate Dawn Castillo, M.P.H.)
Institute for Occupational Safety and Health
Centers for Disease Control and Prevention

CDC Attendees

Gwendolyn Cattledge, Ph.D.
Victor Cabada, M.P.H.
Dauda O. Fadeyi, B.S., M.P.H.
Arlene Greenspan, Dr. P.H., M.P.H.
Tamara, Haegerich, Ph.D.
Dan Holcomb, B.S.
Mrs. Tonia Lindley
Mildred Williams-Johnson, Ph.D.
Kimberly Leeks, Ph.D.
Karin Mack, Ph.D.
Sue Neurath, Ph.D.
Mikel Walters, Ph.D.

Other Attendees Present

Stephanie Wallace, Writer Editor
Cambridge Communications

Appendix B: Acronyms Used in this Document

Acronym	Expansion
ACEs	Adverse Childhood Experiences
ADS	Associate Director for Science
AHRQ	Agency for Healthcare Research and Quality
AI/AN	American Indians and Alaska Natives
ASH	Assistant Secretary for Health
ASTHO	Association of State and Territorial Health Officials
BAC	Blood Alcohol Concentration
BCHC	Big Cities Health Coalition
BIA	Bureau of Indian Affairs
BRFSS™	Behavioral Risk Factor Surveillance System™
BSC	Board of Scientific Counselors
CAN	Child Abuse and Neglect
CARSI	Central America Regional Security Initiative
CBD	Cannabidiol
CBO	Community-Based Organization
CDC	Centers for Disease Control and Prevention
CEO	Chief Executive Officer
CGH	Center for Global Health
CIOs	Centers, Institutes, and Offices
CMS	Centers for Medicare & Medicaid Services
CoP	Communities of Practice
CPSC	Consumer Product Safety Commission
DALY	Disability-Adjusted Life Year
DARPI	Division of Analysis, Research, and Practice Integration
DASH	Division of Adolescent and School Health
DC	District of Columbia
DDNID	Deputy Director for Non-Infectious Diseases
DEA	Drug Enforcement Agency
DEHS	Division of Environmental Health Services
DFO	Designated Federal Official
DOT	Department of Transportation
DUI	Driving Under the Influence
DUIP	Division of Unintentional Violence Prevention
DVP	Division of Violence Prevention
DWP	DATA Waived Physician
ED	Emergency Department
EIC or EITC	Earned Income Tax Credits
ERPO	Extramural Research Program Office
FACA	Federal Advisory Committee Act
FY	Fiscal Year
GBD	Global Burden of Disease Study
HHS	(United States Department of) Health and Human Services
HIDTA	High Intensity Drug Trafficking Areas
HR	Human Resources
ICD	International Classification of Diseases
ICRC	Injury Control Research Center

Acronym	Expansion
IHME	Institute for Health Metrics and Evaluation
IHS	Indian Health Service
IOM	International Organization for Migration
IPV	Intimate Partner Violence
IYG	It's Your Game: Keep It Real
LMIC	Low and Middle Income Countries
MMWR	*Morbidity and Mortality Weekly Report*
MS	Mass Spectrometry
MSAs	Metropolitan Statistical Areas
NACCHO	National Association of County and City Health Officials
NAS	National Academy of Sciences
NCCDPHP	National Center for Chronic Disease Prevention and Health Promotion
NCEH	National Center for Environmental Health
NCHS	National Center for Health Statistic
NCIPC	National Center for Injury Prevention and Control
NGO	Non-Governmental Organization
NHANES	National Health and Nutrition Examination Survey
NHTSA	National Highway Traffic Safety Administration
NIDA	National Institute on Drug Abuse
NIH	National Institutes for Health
NISVS	National Intimate Partner and Sexual Violence Survey
NOFO	Notice of Funding Opportunities
NVDRS	National Violent Death Reporting System
OGS	Office of Grant Services
OEHE	Office of Environmental Health and Engineering (IHS)
OPM	Office of Personnel Management
ORCU	Opioid Response Coordinating Unit
ORRTs	Opioid Rapid Response Teams
OD2A	Overdose Data to Action
PCA America	Prevent Child Abuse America
PDMP	Prescription Drug Monitoring Program
PR	Puerto Rico
PIRE	Pacific Institute for Research and Evaluation
RCT	Randomized Controlled Trial
RSA	Road Safety Audit
RWJF	Robert Wood Johnson Foundation
SME	Subject Matter Experts
SUD	Substance Use Disorders
SUDORS	State Unintentional Drug Overdose Reporting System
SV	Sexual Violence
TA	Technical Assistance
TDV	Teen Dating Violence
THC	Tetrahydrocannabinol
TIPCAP	Tribal Injury Prevention Cooperative Agreement Program
TMVIPP	Tribal Motor Vehicle Injury Prevention Program
TOT	Train-The-Trainer
UNICEF	United Nations International Children’s Emergency Fund
US	United States

Acronym	Expansion
USAID	United States Agency for International Development
UVG	Universidad del Valle de Guatemala
VA	Veteran's Administration
VACS	Violence Against Children Survey
VSOs	Veteran-Serving Organizations
WG	Working Group
WHO	World Health Organization
WSIPP	Washington State Institute for Public Policy
WISQARS™	Web-based Injury Statistics Query and Reporting System
YLD	Years Lived with a Disability
YLL	Years of Life Lost
YRBSS	Youth Risk Behavior Surveillance System
YV	Youth Violence