Understanding and Preventing Violence:

Summary of 2016 Research and Surveillance Activities

National Center for Injury Prevention and Control
Division of Violence Prevention

Understanding and Preventing Violence

Violence is a public health problem that has substantial impact on individuals, their families, and entire communities. Each year, millions of people experience the physical, mental, and economic consequences of violence. The good news is that violence is preventable, and the Centers for Disease Control and Prevention (CDC) is committed to stopping violence before it can begin.

The Division of Violence Prevention (DVP) within CDC's Injury Center works to prevent violence and the injuries and deaths caused by violence, so people can live life to the fullest. As the only federal agency that focuses on stopping violence before it starts, DVP monitors and tracks violence trends, conducts research to identify factors that increase or decrease the risk for violence, develops and rigorously evaluates innovative prevention approaches, and supports the widespread use of evidence-based prevention strategies. This critical work helps us prevent violence across the lifespan, including child abuse and neglect, youth violence, intimate partner violence, sexual violence, and suicidal behavior.

This resource describes DVP's 2016 research activities in violence prevention and highlights some results from previously funded research and ongoing surveillance activities. This work fills critical knowledge gaps and strengthens our ability to prevent different forms of violence and its consequences. DVP's research portfolio aligns with its five-year strategic vision for a cross-cutting approach to understanding the overlapping causes of violence and factors that protect people and communities from experiencing violence in all its forms (see text box at right).[1] The studies described in this report align with the research priorities and guiding questions of CDC's Injury Center.[2]

This document does not summarize DVP's programmatic activities that are important complements to research and surveillance and critical components to preventing violence. For additional information about DVP's programmatic initiatives, activities and resources to prevent violence, visit: www.cdc.gov/violenceprevention/.

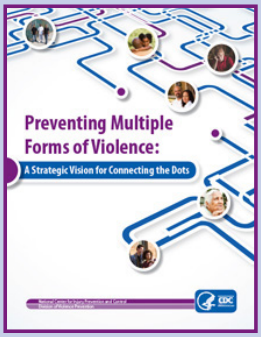
CDC's Strategic Vision for Violence Prevention

The different forms of violence—child abuse and neglect, youth violence, intimate partner violence, sexual violence, elder abuse, and suicidal behavior—co-occur and often share the same root causes. Understanding the shared risk factors for violence and the things that can protect people and communities can help us better prevent violence in all its forms. In 2016, DVP released *Preventing Multiple Forms of Violence: A Strategic Vision for Connecting the Dots*. This document describes CDC's five-year vision and areas of strategic focus to help us understand, respond to, and ultimately prevent violence across the lifespan.[1]

CDC's strategic vision emphasizes the following areas:

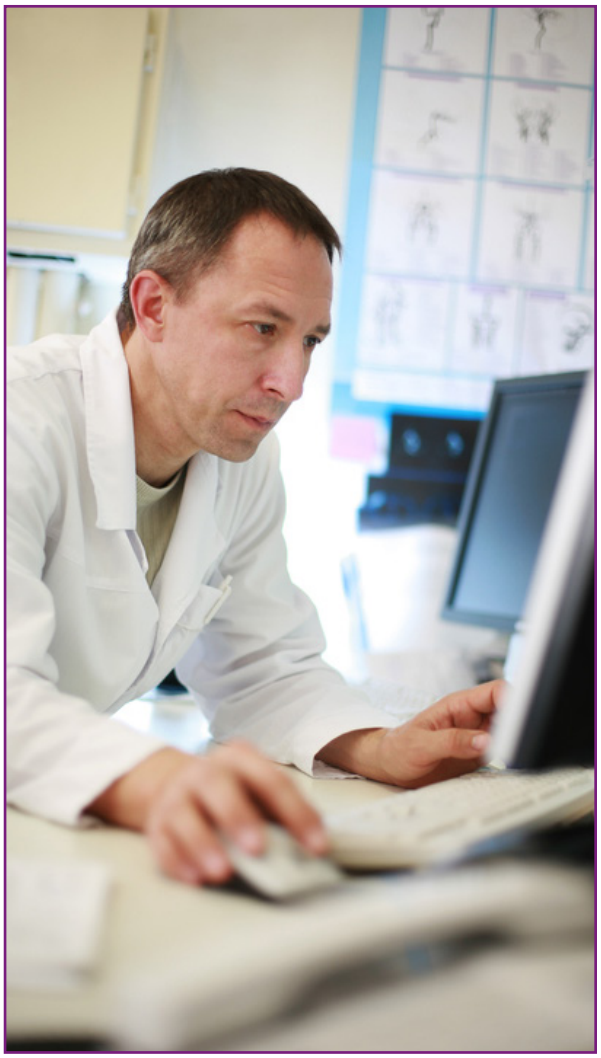
1. Childhood and adolescence, given they are the developmental periods likely to achieve the greatest long-term impact,
2. Populations at highest risk, that disproportionately bear the burden of violence,
3. Shared risk and protective factors across the types of violence, and
4. Programs, practices, and policies that are most likely to impact multiple forms of violence.

This vision is in alignment with DVP's research priorities which include an emphasis on cross-cutting research.



Using DVP's Surveillance Data to Answer Timely Research Questions

National Violent Death Reporting System (NVDRS)



NVDRS combines data from death certificates, police reports, and coroner or medical examiner reports to provide comprehensive information about the circumstances of violent deaths. Findings can inform the development and evaluation of prevention programs and policies. In 2016, NVDRS expanded from 32 to 40 states plus Washington, D.C. and Puerto Rico. Data summaries for 2011, 2012, and 2013 were released in 2016. Many other publications using NVDRS data were released in 2016, including papers published in a supplement to the *American Journal of Preventive Medicine*. One paper focused on the first broad examination of the characteristics and circumstances of fatalities resulting from the use of lethal force by law enforcement officers (LEOs) using data from a multistate public health surveillance system. The results showed that while the majority of victims were white, the fatality rate for blacks was 2.8 times higher than the rate for whites. Black victims were also more likely to be unarmed than white or Hispanic victims.[3] A second paper used NVDRS data to describe incidents of law enforcement officers killed in the line of duty. Most LEO homicides (57%) were precipitated by another crime. Common encounter situations included an officer ambushed (21.9% of officer homicides) and an officer killed during traffic stops or pursuits (19.5%).[4] These papers highlight opportunities for prevention including enhanced LEO training, improved policies, and efforts to build trust in communities. Examples of additional papers resulting from NVDRS are described below under the relevant violence topics.

National Intimate Partner and Sexual Violence Survey (NISVS)

NISVS is an ongoing, nationally-representative surveillance system designed to describe and monitor the magnitude and impact of sexual violence (SV), stalking, and intimate partner violence (IPV) victimization in the United States. In 2016, the system was enhanced to simplify the data structure for analyses and to start collecting new information for use by states, including data on children's exposure to IPV, as well as bystander behaviors and attitudes related to IPV and SV. Also, in 2016, analyses were completed for the most comprehensive NISVS State Report to date. This report was released in April 2017 and provides data for states to help them better understand the extent of intimate partner, sexual violence, and stalking and to inform state and national efforts to better prevent this violence and support victims when it occurs. Survey findings underscore the heavy toll of this violence, the young age at which people often experience violence, and the negative health conditions associated with these forms of violence. Examples of additional papers resulting from NISVS data are described below under the relevant violence topics.

School-Associated Violent Death (SAVD) Surveillance System

The SAVD Surveillance System provides the most recent national level data available about all homicides, suicides, and legal intervention-related deaths associated with elementary and secondary schools, including violent deaths that occur at or on the way to or from schools or school sponsored events. In 2016, the SAVD infrastructure was modified, improving how incident, school-level, and circumstance data are collected and maintained. This change will improve the efficiency and timeliness of SAVD data releases. SAVD data are published routinely in the Indicators of School Crime and Safety reports issued by the National Center for Education Statistics and the Bureau of Justice Statistics. The SAVD data indicate that less than 3% of all homicides to school-age youth are school-associated.

Adverse Childhood Experiences (ACEs) Data

Since 2009, many states and the District of Columbia have started including an optional ACE module or have added ACE questions to their Behavioral Risk Factor Surveillance System (BRFSS) survey, an annual, state-based survey that collects data on health conditions and risk factors from adults in the United States (U.S.). In 2016, DVP received complete ACE datasets from 30 states that collected ACE data through 2014. These data provide an opportunity to update prevalence estimates, examine health and well-being outcomes by geographical areas and demographic variables, and examine contextual information about ACEs to inform and strengthen prevention. For example, a new study published in 2016 described the link between ACE scores and life opportunities.[5] Understanding ACEs is a vital component to preventing and mitigating the effects of child abuse and neglect.

DVP also updated the ACEs webpages in 2016 to highlight the role of primary prevention and add new information, including examples of how states are using ACE data to guide child abuse and neglect prevention activities. The ACEs webpages are the most highly accessed of all of DVP's webpages, with some pages receiving over 70,000 hits per month. DVP expects the updated content will further increase the use of these data to understand and inform prevention research and program development.

Violence Against Children Surveys

The Violence Against Children Surveys (VACS) are nationally representative household surveys. VACS systematically measure physical, emotional, and sexual violence against males and females aged 13-24 years. The surveys provide helpful information on circumstances surrounding violence against children, risk and protective factors, health consequences, as well as use of services and barriers to seeking help. VACS have been conducted in 14 countries to date and the results are helping these countries to develop, launch, and evaluate violence prevention programs and child protection activities. New reports released in 2016 described the prevalence of violence against children and its consequences, and vulnerable groups. For example, one report described the burden of violence against girls in Tanzania, and the physical and mental health problems experienced by victims. Another report focused on violence against boys using data from Haiti, Kenya, and Cambodia. The findings highlighted the common patterns of violence experienced by boys, and the physical and mental health problems associated with violence. Finally, a report using data from Malawi found that boys who experienced violence in childhood were more likely to perpetrate physical and sexual violence against a partner in young adulthood, underscoring the need for prevention to interrupt the transmission of violence across generations. These reports highlight the innovative and important advances in understanding violence and how to address it in global contexts.

Understanding What Protects Against or Increases Risk for Violence

Identifying Shared Risks for Multiple Forms of Violence

A focus on single forms of violence can place a heavy burden on communities to implement multiple prevention programs. A goal of DVP's research is to maximize the impact of violence prevention activities by taking advantage of the interconnections across different forms of violence.

Researchers at DVP and The University of North Carolina at Chapel Hill produced several papers describing the links between experiencing violence and future risk of becoming a perpetrator or victim of violence. In one paper, the research team examined shared risk factors for the perpetration of physical dating violence, bullying, and sexual harassment among adolescents exposed to domestic violence. Results showed low maternal monitoring, depressed affect, and anger reactivity were significant shared risk factors for all three forms of violence.[6] This is the first study to examine shared risk factors across these three types of violence. The findings also have important implications for prevention as they underscore how focusing on certain shared risk factors in prevention programming could impact different kinds of violence. In a second paper, the researchers examined the relationship between bullying perpetration/victimization and perpetration of dating violence. Bullying perpetrators who were not victims of bullying were the group at highest risk for perpetrating dating violence, and anger mediated the relationship between bullying perpetration and dating violence.[7] These findings suggest that bullying perpetrators, particularly those with anger issues, may benefit from programs focused on early prevention of dating violence. Moreover, primary prevention of bullying perpetration may decrease dating violence and other negative outcomes.

Additional research on cross-cutting factors published in 2016 found that youth who use illicit substances and have friends who engage in delinquent behaviors are two to three times more likely than other youth to have histories of violent behavior, suicidal ideation, and gun carrying. These youth were also less likely to have parental supervision.[8] In another study, researchers found that U.S. high school students who experienced physical and sexual dating violence were more likely than students who did not report teen dating violence to carry a weapon to school, miss school because they felt unsafe, get threatened or injured with a weapon on school property, have physical fights at school, and get bullied on school property.[9] A study on adolescent stalking perpetrators and the association of stalking with other forms of violence identified different types of stalkers. Results shed new light on specific types of stalkers who are most likely to engage in physical dating violence, physical assaults and instrumental violence, and who are most likely to threaten or physically hurt their stalking victim.[10]

Together these findings demonstrate the interconnections among different forms of violence in the lives of youth and emphasize the need for effective prevention strategies that address shared risk and protective factors.

Understanding the Impact of Child Abuse and Neglect

Research shows adverse childhood experiences (ACEs), including child abuse and neglect as well as other family challenges (e.g., divorce, parental incarceration), set the stage for numerous negative outcomes over the life course. Based on analyses of CDC's Behavioral Risk Factor Surveillance Survey (BRFSS) data from 10 states, DVP researchers found participants with higher ACE scores were less likely to graduate from high school and more likely to be unemployed and live in a household below the federal poverty line.[5] These findings underscore the importance of understanding the impact of early childhood adversity across the life course to break the intergenerational cycle of poverty.

Another study by DVP researchers monitored trends in fatal abusive head trauma (AHT) among infants and children under the age of 5. An examination of data on fatal AHT from 1999-2014 showed that while rates were relatively stable from 1999-2009, there was a statistically significant average annual decline of 13.0% in fatal AHT rates between 2009 and 2014. Rates in 2013 and 2014 were the lowest in the 16-year study period.[11] While this decrease in AHT deaths is encouraging, more research is needed to explain the decrease and to inform efforts to prevent AHT and other forms of child abuse and neglect from happening in the first place.

Risk and Protective Factors for Teen Dating Violence and Adult Intimate Partner and Sexual Violence

Teen dating violence has significant negative effects on short- and long-term mental and physical health, and unhealthy teen relationships can increase the risk for adult intimate partner violence. DVP collaborated with researchers at Wayne State University to examine risk and protective factors of teen dating violence. Findings indicated that 14% of girls and 13% of boys were victims of stalking, and boys and girls who were stalked reported more instances of alcohol use, binge drinking, and physical dating violence victimization.[12]

In another study, researchers also found that among students previously exposed to violence, the prevalence of teen dating violence perpetration was comparable for boys and girls. This finding contradicts previous findings that identified girls as having higher rates of victimization and lower rates of perpetration. While boys experienced more victimization than girls at a young age, girls experienced double the rates of fear associated with teen dating violence across all ages compared to boys.[13]

Another study published by DVP grantees in 2016 sheds new light on cyber dating violence, with nearly 15% of sixth grade students reporting perpetration of cyber dating abuse at least once during their lifetime. Like previous studies on the perpetration of physical dating violence, factors including norms for violence for boys against girls, having a current boyfriend/girlfriend, and participation in bullying perpetration were associated with perpetration of cyber dating abuse.[14] This research is important because it sheds light on the understudied areas of adolescent stalking and cyber dating violence in teen dating violence research. This research also adds to our understanding of gender differences in teen dating violence perpetration and victimization among at-risk girls and boys.

More research is needed to inform prevention efforts for violence, including adult intimate partner and sexual violence, among underserved populations such as people with disabilities and racial/ethnic minorities. In 2016, DVP researchers examined the association of having a physical, mental, or emotional disability with recent sexual violence victimization among 16,507 respondents in the NISVS survey. Results indicated that men and women with a disability were at increased risk for recent sexual violence compared to those without a disability.[15] This study is important because it is the first to examine this association among women and men on a national scale. Another study examined the sexual violence victimization experiences in a sample of African American women and the association of victimization with negative health outcomes.[16] Study findings showed victims of rape and/or sexual coercion were significantly more likely than non-victims to report depression and post-traumatic stress disorder (PTSD) during their lifetime. This study provided an in-depth examination of sexual violence victimization among a heavily burdened yet understudied segment of the population.

Understanding What Protects Against Suicide or Increases Vulnerability

Suicide contributes to premature death, morbidity, lost productivity, and elevated health care costs each year in the U.S. Suicide is a leading cause of death across the lifespan, and the suicide rate has increased significantly for many age groups.

DVP researchers examine risk and protective factors for suicide in high risk groups to inform prevention. For example, research by the U.S. Department of Veterans Affairs found substantial increases in the suicide rate among Veterans aged 18-24 years who use Veterans Health Administration services. In a comparison of Veterans from the Afghanistan/Iraq War period to their civilian counterparts, DVP researchers found that young Veterans of a similar age group, 18-25 years, were seven times more likely to consider suicide than age-comparable civilians. They also found that drug problems and perceptions about unmet health care needs were particularly strong risk factors for considering suicide among young Veterans aged 18-34. Improved information about the most important risk factors can be used to enhance screening and other suicide prevention strategies for young Veterans.[17]

Analysis of data from CDC's National Violent Death Reporting System (NVDRS) identified precipitating circumstances of suicide that can be used to inform the development and focus of novel suicide prevention strategies. In an analysis of a random sample of 482 suicides among youth aged 11-15 using NVDRS data from 2003 to 2014, conflict between youths and their parents and mental health problems over a prolonged period of time were significant predictors of suicide.[18] Another study of 600 middle-aged men who died from suicide in seven states between 2005 and 2010 found that common precipitating circumstances of suicide included intimate partner problems (58.3% of men), criminal/legal problems (50.7%), job/financial problems (22.5%), and health problems (13.5%). Men with intimate partner problems and criminal/legal issues were significantly more likely to experience suicide in an acute crisis than men with health or job/financial issues.[19]

Within 17 states reporting NVDRS data in 2012, farming, fishing and forestry occupational groups had the highest rate of suicide overall and among men. Occupations with the highest rates of suicides among women included protective service occupations.[20] DVP researchers also examined county-level distribution of suicides among current military and Veterans aged 18–35 years using NVDRS data from 16 states (963 counties or county-equivalent entities). Suicides were concentrated in a small number of counties, 1 in 3 current military suicides occurred in just ten (1.0%) counties, and 1 in 3 Veteran suicides occurred in just 33 (3.4%) counties. Targeting comprehensive suicide prevention efforts in the counties with the highest proportion of suicide deaths may be particularly beneficial.[21]

Examining the Economic Impact of Violence and the Efficiency of Prevention Strategies

Understanding and responding to public health problems includes recognizing the broad costs of violence and the cost-benefit of prevention strategies. DVP researchers collaborated with health economists in the Injury Center to develop the first national, comprehensive estimate of the societal costs of rape against women and men. The estimates, published in a 2017 report, indicated that the average cost accrued over the course of a rape victim's lifetime was $122,461 per victim.[22] DVP is also developing an updated national estimate of the societal costs of intimate partner violence, including estimates of the lifetime costs per case. This research informs our understanding of the economic impact of violence and can strengthen the ability to assess returns on investments in prevention.

Testing New and Innovative Prevention Strategies

Cross-cutting Violence Prevention

Replication of Cardiff Violence Prevention Model in the United States

DVP recognizes that violence is often concentrated in certain areas. In 2015, DVP researchers collaborated with the CDC Foundation, Grady Health System, and DeKalb County Police Department, with funding from the Robert Wood Johnson Foundation, to support the replication of the Cardiff Violence Prevention Model (Cardiff Model) in the U.S. The Cardiff Model is a cross-sector approach that has been shown to substantially reduce risk for violence and serious violent injuries in the city of Cardiff, UK.[23] The model uses real-time hospital and law enforcement data to help communities identify public areas where violence frequently occurs and to work as a partnership to implement prevention strategies. In 2016, the replication in DeKalb County, GA (part of the Atlanta metropolitan area) demonstrated that the majority of violent injuries treated in the emergency department were not reflected in law enforcement data. The partnership is expanding and using the integrated data to guide local prevention activities. Cardiff Model partnerships can improve data quality, and cross-sectoral relationships create shared responsibility and help ensure that prevention activities are being implemented appropriately. Healthcare organizations, law enforcement, public health and other governmental agencies and community groups can build on Cardiff Model data and shared knowledge and experiences to tailor prevention activities for their local communities. Future research will evaluate the effects of the model on rates of violence and injuries treated in emergency departments.

Preventing Child Abuse and Neglect

Intramural research and new research awards in 2016 will evaluate the effectiveness of policies and programs that provide economic and other support to high-risk families in order to prevent child abuse and neglect.

Preventing Neglect of Children with Special Health Care Needs

Child maltreatment, particularly neglect, disproportionately affects low-income children with special health care needs and has serious short- and long-term consequences. Few evidence-based preventive services exist for such families, particularly within the context of the patient-centered medical home. In 2016, DVP funded researchers at Boston Medical Center to examine the efficacy of Child Abuse Prevention Problem Solving (CAPPS), a targeted intervention that addresses specific stressors faced by low-income parents and enhances family strengths previously shown to prevent neglect. Specific research aims include decreasing referrals to child protective services for neglect and increasing adherence to recommended medical care; decreasing perceived social isolation, difficulty navigating complex services, and caregiver burden; and enhancing family strengths, social connections, access to support in times of need, and knowledge of parenting and child development.

Strengthening Economic Support Policies

Policies that improve the socioeconomic conditions of families tend to have large impacts on children's development, academic achievements, and health, including exposure to child abuse and neglect. In 2016, DVP researchers reported the effects of paid family leave (PFL) policies on hospital admissions for pediatric abusive head trauma by comparing California's 2004 PFL policy with seven comparison states without PFL policies. California's PFL policy showed a significant decrease in abusive head trauma hospital admissions in children less than 2 years old.[24] These promising results underscore the importance of policies that strengthen economic supports for families to help reduce child abuse and neglect.

In 2016, DVP funded two new rigorous evaluations of economic support policies for preventing child maltreatment. Researchers at the University of Wisconsin-Madison are examining the impact of Project GAIN (Getting Access to Income Now) on reducing rates of child abuse and neglect among 800 at-risk families in Milwaukee, Wisconsin. Families in the intervention will receive assessments of their economic needs, assistance in identifying and accessing resources, and support with financial decision-making. The second study, conducted by researchers at the University of Kansas-Lawrence, examines whether economic and social safety net policies impact rates of child abuse and neglect. The multi-phase study will investigate the association between reports of child neglect and changes in multiple state and county programs (including Temporary Assistance to Needy Families (TANF), Earned Income Tax Credits (EITC) and Supplemental Nutrition Assistance Programs (SNAP)) from 1995 to 2014.

Preventing Youth Violence

Youth violence is a significant problem that negatively impacts youth in urban, suburban, rural and tribal communities. Research and experience in neighborhoods show individual, family, and community strategies prevent youth violence.[25]

Since 2000, DVP has supported research investments in academic-community collaborations to advance the science and practice of youth violence prevention. Called Youth Violence Prevention Centers (YVPCs),[26] the collaborations rigorously evaluate prevention activities that have community-level impacts on youth violence. YVPCs have demonstrated substantial success in reducing youth violence in their target communities while also generating a body of generalizable science that can inform prevention activities in other communities.

Evaluating Comprehensive Evidence-based Approaches to Prevent Youth Violence in High-Risk Communities

From 2010–2016, six YVPCs were funded to implement comprehensive prevention strategies with multiple components to impact youth violence at the community level. Components were directed at risk factors at the individual (e.g., delinquency, substance abuse, lack of social skills); relationship (e.g., inadequate parental monitoring, supervision, discipline; peer norms supporting violence); and community (e.g., social disorganization, lack of cohesion, lack of economic or supervised recreational activities for youth) levels. YVPCs developed multidisciplinary and community partnerships, built community capacity to work collaboratively to prevent violence, and disseminated research findings to build knowledge on youth violence prevention.

YVPCs funded from 2010-2016 reported significant community-level decreases in youth violence.

- The ***Chicago Center for Youth Violence Prevention*** *(CCYVP)* collaborated with researchers, community representatives, practitioners, and policy makers committed to understanding and reducing youth violence in low-income, inner-city communities in Chicago, IL. Preliminary findings show that the Humboldt Park community that implemented comprehensive strategies (i.e., *Schools and Families Educating Children*, *GREAT Families*, and *Ceasefire*) recorded a substantial decline in homicides from 2010-2015. At the same time, homicides increased in other similar communities and across the city. The decline in Humboldt Park homicides was the result of the synergistic effect of all the implemented strategies and not the result of one single strategy.[27]

- The ***Michigan Youth Violence Prevention Center*** *(MI-YVPC)* partnered with the Genesee County Health Department, local health systems, community organizations and law enforcement agencies to implement and evaluate six programs for reducing assaults and injury among youth aged 10–24 in Flint, MI. Programs focused on individuals (*Youth Empowerment Solutions* and *Project Sync*), relationships (*Fathers and Sons* and *Targeted Outreach Mentoring*) and communities (*Community Policing Mobilization* and *Clean and Green*). An evaluation of the comprehensive program found that youth aged 10-24 in the intervention area were significantly less likely to be a victim of a violent assault than youth in a matched comparison area. The comprehensive program also resulted in a significant decrease in the overall expected number of assault-related injuries per month in the intervention area relative to the comparison area.[28]

- The ***Virginia Commonwealth University's Clark-Hill Institute for Positive Youth Development*** *(Clark-Hill)* focused on youth and their families living in Richmond, VA. The team worked with community partners and city agencies to coordinate and implement a set of school-based and family-focused programs. Spatial analyses of police reports on youth violence revealed that block groups receiving the school and family intervention had 13% lower risk of violence compared to those in block groups that did not receive the intervention.[29]

- The ***North Carolina-Youth Violence Prevention Center*** *(NC-YVPC)* implemented and evaluated a combination of interventions to change behaviors that can subsequently lead to reductions in youth violence. *Teen Court*, a prevention program aimed at diverting first time juvenile offenders from the juvenile justice system and reintegrating them back into their community, was evaluated. Findings indicate that the program decreased internalizing symptoms, externalizing behavior, violent behavior, parent-child conflict and the number of delinquent friends. The program increased self-esteem and school satisfaction.[30,31]

- The ***Johns Hopkins Center for the Prevention of Youth Violence*** *(JHCPYV)* employed a multi-sectored, public health framework for understanding and preventing youth violence. JHCPYV implemented a continuum of interventions, including *Safe Streets* (adapted CeaseFire/Cure Violence intervention), in two Baltimore City neighborhoods to provide outreach to high-risk youth aged 15-24. The interventions were designed to reduce violent conflicts and promote community-wide social norms discouraging violence. For example, Safe Streets used outreach workers to build trusting relationships with youth at greatest risk of being involved in gun violence, and to rapidly intervene in disputes with potential to lead to gun violence. The intervention was associated with a 43% improvement in attitudes toward gun violence assessed in the intervention community one year post-intervention compared to a 13% improvement in a control community.[32] Safe Streets was also associated with significant improvements in violent attitudes toward personal conflict resolution, and exposure to the intervention was associated with improved attitudes toward conflict.

- The ***University of Colorado Boulder's Youth Violence Prevention Center*** *(CU Boulder YVPC)* implemented the Communities That Care (CTC) operating system of prevention in the Montbello community of Denver, CO. Their initiative was called *Steps to Success*, and its hallmark was the remarkable community ownership, empowerment, and capacity that they generated. Preliminary analyses show positive, violence-reduction effects following the multi-year implementation of evidence-based individual and family level prevention programs (i.e., *Strengthening Families 10-14*, *Promoting Alternative Thinking Strategies (PATHS)*, and *Positive Family Support*).

DVP collaborated with the YVPCs funded from 2010-2016 to produce a special issue of the *Journal of Primary Prevention*. The issue shares methods and lessons learned for implementing and evaluating comprehensive evidence-based approaches to prevent youth violence.[33] Articles in the issue emphasize the importance of community partnerships and engagement, collection of youth violence data and indicators at the community level, development of "packages" of evidence-based approaches for youth violence prevention, and design options for evaluating community-level interventions.

Building on the Success of the Youth Violence Prevention Centers

To build upon the success of the YVPCs, DVP issued new funding opportunity announcements in 2015 and 2016 aimed at filling research gaps in youth violence prevention. These gaps include determining the effectiveness of community- and policy-level prevention strategies to reduce youth violence at the community level; understanding how and why prevention strategies may be effective in preventing youth violence; and examining how community readiness and capacity are related to the selection, implementation, and evaluation of evidence-based youth violence prevention approaches. Five YVPCs were funded to collaborate with local health departments and community partners to develop, implement and evaluate community-level youth violence prevention strategies in high-risk neighborhoods.

Chicago Center for Youth Violence Prevention *(CCYVP)* and a coalition of faith and community leaders will evaluate the process and impact of implementing Communities That Care (CTC) in Bronzeville, IL. CTC is a promising, community-level prevention system that provides a data-driven framework for community decision-making and implementation of evidence-based prevention programs that best address community needs, values, and resources. This study will be the first evaluation of CTC's impact on youth violence and neighborhood social organization in an inner-city community.

Michigan Youth Violence Prevention Center *(MI-YVPC)* will study how improving vacant properties can impact violence, property crimes, and intentional injuries among youth in Flint, MI, Youngstown, OH, and Camden, NJ. A community and youth-engaged approach to maintaining and improving environments will be compared to professional maintenance.

University of Louisville Youth Violence Prevention Center is changing norms about the acceptability of violence as a way to resolve conflicts. Researchers at the University of Louisville and Vanderbilt University partnered to develop, implement, and evaluate a mass and social media campaign to change norms about violence and reduce violence among youth in West Louisville, KY relative to youth in East Nashville, TN.

The Youth Violence Prevention Center–Denver will collaborate with partners in two communities with different levels of community readiness and capacity to implement *Communities That Care* (*CTC*)—an evidence-based, community-level prevention system that uses data to help communities understand how to best prevent violence. The Center will evaluate the impact of its activities on the communities' readiness and capacity to implement prevention activities and on decreases in rates of youth violence.

Virginia Commonwealth University's Clark-Hill Institute for Positive Youth Development will implement and evaluate *Communities That Care* (*CTC*) *PLUS*, an enhancement of *CTC* with *Walker-Talker* community outreach, to strengthen awareness, capacity, and collaboration. *CTC PLUS* will be evaluated in three urban neighborhoods in Richmond, VA for associated changes in rates of youth homicide and injury, neighborhood factors that affect the likelihood of violence, community capacity to implement effective strategies, and cost-effectiveness.

Preventing Sexual Violence and Intimate Partner Violence

Evaluating Primary Prevention Strategies to Build the Evidence Base for Sexual Violence and Intimate Partner Violence Prevention

Sexual violence and intimate partner violence are pervasive problems with broad and long-lasting impacts on victims and their family, friends and communities. DVP is committed to funding research that builds the evidence base of effective primary prevention programs, policies and strategies.

Ongoing research funded by DVP in previous years focuses on evaluating strategies that seek to influence social norms around sexual and dating violence by focusing on men and boys, bystander approaches, and community-level interventions. This research includes both adolescent and college-age samples, and holds promise for identifying additional evidence-based programs to prevent sexual and dating violence perpetration at both the relationship and school/community levels. However, gaps remain in our knowledge, particularly related to programs and policies to prevent sexual and intimate partner violence perpetration that have substantial uptake in practice and are evidence-informed but lack evaluation research evidence.

Evaluating Practice-Based Sexual Violence Primary Prevention Approaches from CDC's RPE Programs

Numerous prevention approaches are implemented in the practice field to address sexual and intimate partner violence without being evaluated to establish effectiveness. With this in mind, DVP funded rigorous evaluations of prevention approaches in the practice field. Through the Rape Prevention and Education (RPE) Program,[34] CDC funds health departments in all 50 states, the District of Columbia, and four U.S. territories to work with state sexual assault coalitions, rape crisis centers, and other community-based organizations to advance sexual violence prevention. The goal of the RPE Program is to strengthen sexual violence prevention efforts at the local, state, and national levels.

In 2016, five rigorous evaluation studies were funded. While the primary outcome of interest for this funding initiative is sexual violence perpetration, many of the funded projects also focus on cross-cutting outcomes such as teen dating violence and suicide.

- ***Testing the Efficacy of a Strengths-Based Curriculum to Reduce Risk for Future Sexual Violence Perpetration among Middle School Boys***
  The New York State Department of Health (RPE grantee) will collaborate with Cornell University to evaluate the efficacy of a strengths-based curriculum called the *Council for Boys and Young Men*. This program is designed to reduce risk for future sexual violence perpetration among middle school boys ages 12-14. The program's impact on a number of outcomes will be examined, including sexual assault perpetration, bystander behavior, attitudes related to gender roles and acceptability of sexual violence, interpersonal relationships, and youth-adult connectedness.

- ***Preventing Sexual Violence Through a Comprehensive, Peer-Led Initiative: A Process and Outcome Evaluation***
  The University of New Hampshire is collaborating with the South Dakota Network Against Family Violence and Sexual Assault, South Dakota Department of Health (RPE grantee) and Rapid City, South Dakota middle and high schools to evaluate the effects of *Teen Up–Enhanced* on sexual violence perpetration, bystander actions, bullying and suicidality. *Teen Up* is a youth-led initiative that builds youth civic engagement, collective efficacy, and leadership to promote well-being and protect against youth risk behaviors such as aggression, substance use, and mental health problems. *Teen Up* will be enhanced to include sexual violence prevention content.

- ***The Impact of Sources of Strength, a Primary Prevention Youth Suicide Program, on Sexual Violence Perpetration among Colorado High School Students***
  The University of Florida is collaborating with the Colorado Department of Public Health and Environment (RPE grantee) to evaluate *Sources of Strength*, a school-based program that builds connections between student leaders and adults to strengthen social connectedness, help-seeking, and healthy norms about behavior. The program will be evaluated in 24 high schools with 9th to 11th grade students. Outcomes include preventing sexual violence perpetration and reducing thoughts about suicide.

- ***A Randomized Trial of Wise Guys: The Next Level***
  The University of North Carolina at Chapel Hill is collaborating with the RPE-funded Children's Home Society of North Carolina and North Carolina Coalition Against Sexual Assault to evaluate the *Wise Guys: Next Level* program. *Wise Guys: Next Level* seeks to reduce sexual violence perpetration by addressing known risk and protective factors such as rape culture and unhealthy masculinity, gender stereotyping, communication, and consent in relationships. Program impacts are being evaluated by measuring perpetration of sexual violence, dating violence, bullying and harassment, and sexual risk behaviors.

- ***Youth Empowerment Solutions for Healthy Relationships: Engaging Youth to Prevent Sexual Violence***
  Wayne State University is collaborating with the University of Michigan and the Michigan Department of Health and Human Services (RPE grantee) to adapt the community-level *Youth Empowerment Solutions* for sexual violence prevention. *Youth Empowerment Solutions* is a primary prevention strategy focused on influencing community-level change through youth empowerment and positive youth development. The project will evaluate intervention effects on sexual violence and teen dating violence perpetration, youth empowerment, social connectedness, and social norms in six Wayne County (Detroit, Michigan) high schools.

Evaluating the Effectiveness of Teen Dating Violence Prevention Programs

Each year, approximately 25% of U.S. teens sustain physical, psychological, or sexual abuse by dating partners. Many victims of teen dating violence experience a host of devastating consequences, including acute and chronic mental and physical health problems, suicidality, delinquency, risky sexual behavior, substance abuse, and academic failure.

To prevent teen dating violence, DVP developed *Dating Matters®*, a comprehensive teen dating violence prevention program for youth, parents, educators, and communities. The program engages local health departments and reinforces skills taught to parents and youth through evidence-based programs with educator training. A communication campaign supports the program using social media and text messages. *Dating Matters®* was delivered to nearly 37,000 students in 45 middle schools and over 900 parents across four high-risk, urban communities. The program is being evaluated for effectiveness using a longitudinal cluster randomized controlled trial design. Outcomes include reducing the risk for physical, emotional, and sexual violence among teens in middle and high school. Challenges in evaluating the comprehensive *Dating Matters®* program include site variability, implementation versus evaluation responsibilities, school retention, parent engagement in research, and working within the context of high-risk urban schools and communities.[35] The implementation phase of the randomized controlled trial concluded with the 2015-2016 school year. DVP researchers are working on analyzing the data and examining outcomes on teen dating violence perpetration and victimization. DVP will continue to collect follow-up data as the students move to high school through the 2017-2018 school year. This work will help guide and strengthen national efforts to stop dating violence.

Preventing Suicide

Preventing Suicide with Connectedness

DVP is leading efforts to understand whether increasing social connectedness can lower the risk for suicide. DVP supported researchers at the University of Michigan to evaluate the effectiveness of *Links to Enhancing Teens' Connectedness (LET's CONNECT*), a community-based mentorship intervention for youth aged 12-15 at risk for suicidal behavior due to bullying perpetration/victimization, or low interpersonal connectedness. The intervention was based on a positive youth development framework and involved mentorship from a natural mentor (e.g., family member) and a trained community mentor. Analyses of baseline data from 321 youth in the study revealed that lower levels of social connectedness and higher levels of bullying victimization and perpetration were significantly associated with thinking about and attempting suicide.[36] Researchers also found youth involvement in private religious practices and organizational religiousness were associated with lower risk of suicidal thoughts.[37] Analysis of the intervention effects over time is still being conducted. However, in preliminary results, *LET's CONNECT* was associated with improved social connectedness compared to the control group. Effects for community connectedness, feeling an unmet need to belong, self-esteem, and depression were not significant but in the desired direction (manuscript under review).[38]

Social connections are important determinants of emotional and physical health in later life, and they may be key to preventing suicidal behaviors. DVP funded researchers at the University of Rochester to evaluate the effectiveness of *The Senior Connection (TSC)* in addressing risks for suicide, including suicide ideation and social connectedness, among adults over age 60. *TSC* promotes partnerships between health care providers and non-medical aging service agencies, and links disconnected seniors with peer companions. Preliminary results indicate that after a year people in TSC had significantly reduced perceived burdensomeness compared to the care as usual (CAU) group with effects most pronounced for people with greater functional impairments. The treatment group also had greater declines in depressive symptoms and anxiety symptoms compared to CAU. Both groups improved in measures of thwarted belongingness and thinking about suicide. Results at the two-year follow-up are forthcoming.[39]

Technical Packages for Violence Prevention

The Division of Violence Prevention released five technical packages in 2016-2017 covering the areas of child abuse and neglect,[40] sexual violence,[41] youth violence,[42] suicide,[43] and intimate partner violence.[44] These technical packages are based on a critical review of the research literature. They describe a collection of strategies that represent the best available evidence to prevent violence. Technical packages are valuable because they allow communities to prioritize interventions that are based on this evidence.[45] The technical packages include *strategies* (i.e., preventive directions), *approaches* (i.e., examples of specific ways to advance the strategies through programs, policies, or practices), and the *evidence* for given approaches. The purpose of these packages is to compile the best available evidence for a given violence topic to be a prevention resource for the field. These packages also help show gaps in knowledge that will inform future research. The topic-specific technical packages include examples of prevention strategies that can have benefits for multiple types of violence. DVP will be releasing guidance documents to help communities implement the strategies in the technical packages.

Looking Ahead

DVP's surveillance systems will continue to provide important insights into the latest trends in violence and the impacts on victims. This information is critical for understanding the subgroups at greatest risk and for guiding the development of prevention programs and policies and for monitoring effects over time. DVP's ongoing research will address the key gaps described in CDC's research priorities, including enhanced understanding of the effects of the most promising practice-based prevention strategies, the benefits of community- and policy-level prevention strategies, and the impacts of strategies that address shared risk and protective factors for multiple forms of violence. These surveillance and research activities have been informed by DVP's prevention programs and the experiences of grantees, health departments, and other stakeholders. The results will help shape prevention practice and ensure that violence prevention resources are used wisely and having the strongest impacts possible.

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