

2020-2025



# State of New Hampshire Violence and Injury Prevention 5-Year Plan



INJURY PREVENTION CENTER

**CHaD** Children's Hospital at  
Dartmouth-Hitchcock

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## An Open Letter to Our Stakeholders

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New Hampshire injury prevention advocates have been called to create a strategic plan to guide efforts over the next five years: 2020-2025. This has been a complex process in that partner input was highly sought and utilized to carry out a comprehensive examination of state and national data, bringing together multiple perspectives to identify NH's top injury and violence priorities. Utilizing both the Socio-Ecological Model of Health and the Center for Disease Control's (CDC) *Connecting the Dots* shared risk and protective factors framework, the process highlighted the need for all disciplines to come together, overcome real and perceived silos, and look further upstream to affect the changes we are seeking to make New Hampshire a safer place to live, work and play.

Through the year-long strategic planning effort, we have started a new journey to align strategies, programs and outcomes that will lead to improved health for New Hampshire. While the evidence describing linkages between risk and protective factors and injury is still emerging, the field of injury control is continuing to deepen its research base on "what works" by building upon guidance coming out of the more-developed violence prevention field.

Focus areas discussed in this plan are driven by data and attempt to capture the rich and diverse partnerships that are necessary to improve prevention efforts both state wide and across the northeast region. Some of these partnerships are in their infancy and others well established. Some topics covered in this Plan, such as suicide and intimate partner violence, have their own state plans but are included here to call out their place in NH's broader injury prevention landscape, highlight shared risk and protective factors, and showcase proven strategies to affect change that may have overlap with other injury prevention priorities.

Strategies presented in each topic area are either currently underway or supported by evidence to decrease injury and its most final consequence, death. Funding and other resources (e.g., data, personnel, leadership) to support these strategies may not be fully developed, coordinated or guaranteed New Hampshire's ever dynamic fiscal reality. Much of what happens within the field of injury control is done through a public health lens and public health has not traditionally been well funded in New Hampshire.

In order to appreciate the role of injury in the lives of New Hampshire residents, this document will serve as a guide to help stakeholders look at the data and facts behind why we focus on these topics, where we aim to be in five years, and how we will know we are making progress.

We welcome your comments, your input and your support as we embark on the next five-year journey to make New Hampshire the safest state to in the country to live, work and play.

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A special thank you to April Simonds, IPC Program Manager for assistance in creating this plan, and to Victoria Eickelberg, MPH, Title V MCH Student Intern, School of Public Health at the University of Illinois Chicago, who conducted a national inventory of State Violence & Injury Prevention Plans, review of CDC planning frameworks, and interviews with nine state injury programs, June-Aug. 2018 in support of this plan.

## Introduction

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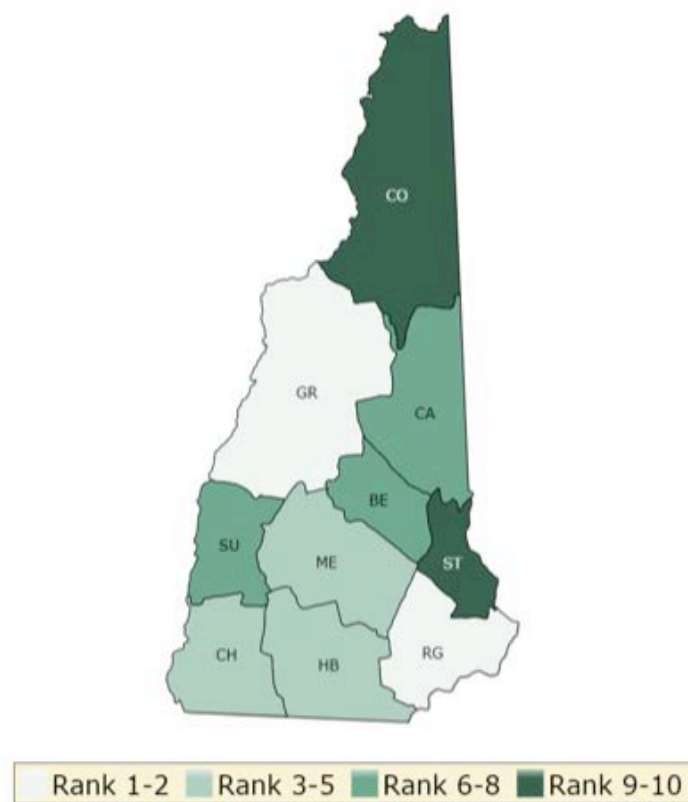
The state of New Hampshire is located in the northeast corner of the United States and has a population of approximately 1.36 million people according to US Census data. It is projected that the population will increase by 8% by 2040. Of note is that the older adult population is projected to increase substantially and the birth rate will decline slightly.<sup>1</sup>

The state has a land mass of 8,952.65 square miles with a population density of 147 per square mile. There are ten counties with approximately 64% of the population residing in three counties, Hillsborough, Merrimack, and Rockingham. New Hampshire is known for its regional diversity with vast mountains to the north, seacoast to the east and extensive forests, lakes and streams bordering our central region with urban settings to the south.

Approximately 93.6% of the population is white with the remaining 6.4% representing all other populations (i.e. black/African American, Indian, Asian, Hispanic, all others). The NH Kid Count Data report notes that “New Hampshire is rapidly diversifying. Children under age five represent the highest share of non-white residents of the Granite State, at 15.5 percent, compared to just 3.5 percent of seniors over 65. This shift in demographics will force our state to adjust to give these non-white children what they need to thrive. According to national data, people of color have a significantly higher chance of experiencing adversity in childhood, which can cause lifelong health detriments.”<sup>2</sup>

New Hampshire has a low unemployment rate of 2.6% as of October 2019. Educational attainment in New Hampshire is above the national average with 92.8% becoming high school graduates or higher, and 36% have a

Figure 1. NH's County Health Rankings, lighter green and lower rank indicates better health.



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<sup>1</sup> <https://www.census.gov/quickfacts/fact/table/NH/PST045218>

<sup>2</sup> <https://datacenter.kidscount.org/data#NH/2/0/char/0>

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Bachelor's degree or higher.<sup>3</sup> Overall, the number living in poverty account for 7.7% of the population, but according to County Health Rankings State Report, in 2017, over 20,000 children were living in poverty in NH.<sup>4</sup>

County health rankings are shown in Figure 1 and illuminate the disparity between NH counties. Rockingham and Grafton counties have the best health outcomes while Strafford and Coos counties rank lowest in residents' health outcomes. Injury deaths are factored into the health rankings under community safety. Over the last five years, injury deaths in New Hampshire have been climbing at a steeper rate than nationally. In 2018, NH had many more injury deaths than the national average, with a rate of 88.5 per 100,000 population compared to the national rate of 70 per 100,000.<sup>5</sup> Moreover, NH has been facing several public health challenges in recent years, including the third highest opioid overdose rate, large disparities in health by education level, and a high prevalence of excessive drinking and tobacco use, the latter now affecting more teens. These issues position injury prevention as a top public health issue and demands a strategic response to keep New Hampshire citizens safe where they live, work and play.

In recent years, a shift has been underway in the approach toward Violence and Injury Prevention on the national level. Initiated in large part by the Centers for Disease Control (CDC) and their adoption of a shared risk and protective factor approach,<sup>6</sup> NH has joined a number of states in drawing upon new guidance from the CDC in revising its State Violence and Injury Prevention (SVIP) Plan. While the specific linkages between risk and protective factors and injury-related deaths and hospitalization have not been studied to the same degree as for violence, we worked with partners across the state to identify the main factors associated with injury in developing our five-year plan. Furthermore, our effort draws upon well-established public health frameworks and the recommended steps outlined in the CDC's Comprehensive Index Tool for state Violence and Injury Prevention planning including:

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<sup>3</sup> U.S. Census Bureau, American FactFinder. American Community Survey.  
<https://www.census.gov/acs/www/data/data-tables-and-tools/american-factfinder/>

<sup>4</sup> <https://www.countyhealthrankings.org/rankings/data/nh>

<sup>5</sup> Centers for Disease Control and Prevention, National Center for Injury Prevention and Control. Web-based Injury Statistics Query and Reporting System (WISQARS). Available from URL: [www.cdc.gov/injury/wisqars](http://www.cdc.gov/injury/wisqars)

<sup>6</sup> Wilkins, N., Tsao, B., Hertz, M., Davis, R., Klevens, J. (2014). Connecting the Dots: An Overview of the Links Among Multiple Forms of Violence. Atlanta, GA: National Center for Injury Prevention and Control, Centers for Disease Control and Prevention Oakland, CA: Prevention Institute.

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- Engagement of diverse stakeholders and partners in violence and injury prevention work
- Review of existing policies, laws, regulations, and state strategic plans
- Thorough examination of the last decade's trends and burden of violence and injury in NH across all age groups to identify top priorities
- Alignment of data monitoring efforts and performance metrics across multiple state and community agencies and partner organizations
- Consideration of funding, political will, current momentum, research evidence, data availability, and active partners in narrowing down specific violence and injury strategies for the next five years.

We view this Plan as just a beginning to a new way of approaching violence and injury prevention. As evidence builds for key risk and protective factors to injury, NH will be positioned to reflect on progress made through efforts in this plan. With continued engagement of a diverse and dedicated set of partners, combined with improvements in NH's data infrastructure, the next five years will be an important period for addressing the challenges facing all NH citizens.

## The Burden of Injury and Violence in New Hampshire

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Injuries – whether intentional or unintentional – make substantial physical, emotional, and economic impacts on society that can have lasting consequences. In 2018 there were 1,277 injury-related deaths in New Hampshire, affecting families, schools and workplaces, and communities. These fatal injuries cost over \$1 billion in lifetime medical expenses and work lost, which translates to \$771 per capita in New Hampshire.<sup>7</sup>

Over the past five years, unintentional injuries were the third leading cause of all deaths in New Hampshire, while suicide was the eighth leading cause of death.<sup>8</sup> New Hampshire has the nation's 9<sup>th</sup> highest rate of unintentional injury deaths and the 16<sup>th</sup> highest rate for suicide.<sup>7</sup> One measure of the impact of a death is the Years of Potential Life Lost (YPLL) which estimates the average years a person would have lived if he or she had not died prematurely (before age 70). Unintentional injury was the leading cause of premature death in New Hampshire between 2013 and 2017, accounting for 23.8% of YPLLs. Suicide was the fourth leading cause of premature death at 9.0% of YPLLs.

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<sup>7</sup> Centers for Disease Control and Prevention (CDC), Costs of Injuries for States 2013, accessed April 30, 2019, [https://www.cdc.gov/injury/wisqars/cost/state\\_costs.html](https://www.cdc.gov/injury/wisqars/cost/state_costs.html)

<sup>8</sup> Centers for Disease Control and Prevention (CDC), Stats of the State of New Hampshire, accessed May 1, 2019, <https://www.cdc.gov/nchs/pressroom/states/newhampshire/newhampshire.htm>



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Nationwide, in 2017, unintentional injury was the leading cause of death for children and adults between the ages of 1 and 45 and suicide was the second leading cause of death between the ages of 10 and 45.<sup>9</sup> These national patterns are echoed in our state, as unintentional injury is the leading cause of death for ages 1-4 and 15-44 in New Hampshire and suicide is the second or third leading cause of deaths from all causes between the ages of 10 and 45 (Table 1).

Table 1. Top 5 Leading Causes of All Deaths in NH by Age Group, 2013-2017

Rank	Age Groups										All Ages
	<1	1-4	5-9	10-14	15-24	25-34	35-44	45-54	55-64	65+	
1	Congenital Anomalies 37	Congenital Anomalies ---	Malignant Neoplasms 10	Malignant Neoplasms 13	Unintentional Injury 316	Unintentional Injury 700	Unintentional Injury 519	Malignant Neoplasms 939	Malignant Neoplasms 2,604	Heart Disease 10,790	Malignant Neoplasms 13,690
2	Short Gestation 33	Homicide ---	Homicide ---	Unintentional Injury ---	Suicide 142	Suicide 173	Malignant Neoplasms 214	Heart Disease 545	Heart Disease 1,298	Malignant Neoplasms 9,817	Heart Disease 12,821
3	Maternal Pregnancy Comp. 25	Unintentional Injury ---	Unintentional Injury ---	Suicide ---	Heart Disease 19	Malignant Neoplasms 74	Suicide 185	Unintentional Injury 540	Unintentional Injury 409	Chronic Low Respiratory Disease 3,011	Unintentional Injury 3,981
4	Circulatory System Disease 11	Influenza & Pneumonia ---	Benign Neoplasms ---	Benign Neoplasms ---	Malignant Neoplasms 15	Heart Disease 43	Heart Disease 116	Suicide 265	Chronic Low Respiratory Disease 366	Cerebrovascular 2,117	Chronic Low Respiratory Disease 3,492
5	Placenta Cord Membranes 11	Two Tied ---	Heart Disease ---	Congenital Anomalies ---	Homicide 12	Congenital Anomalies 12	Liver Disease 47	Liver Disease 155	Liver Disease 269	Alzheimer's Disease 2,010	Cerebrovascular 2,376

WISQARS™

Note: For leading cause categories in this State-level chart, counts of less than 10 deaths have been suppressed (---).

Produced By: National Center for Injury Prevention and Control, Centers for Disease Control and Prevention

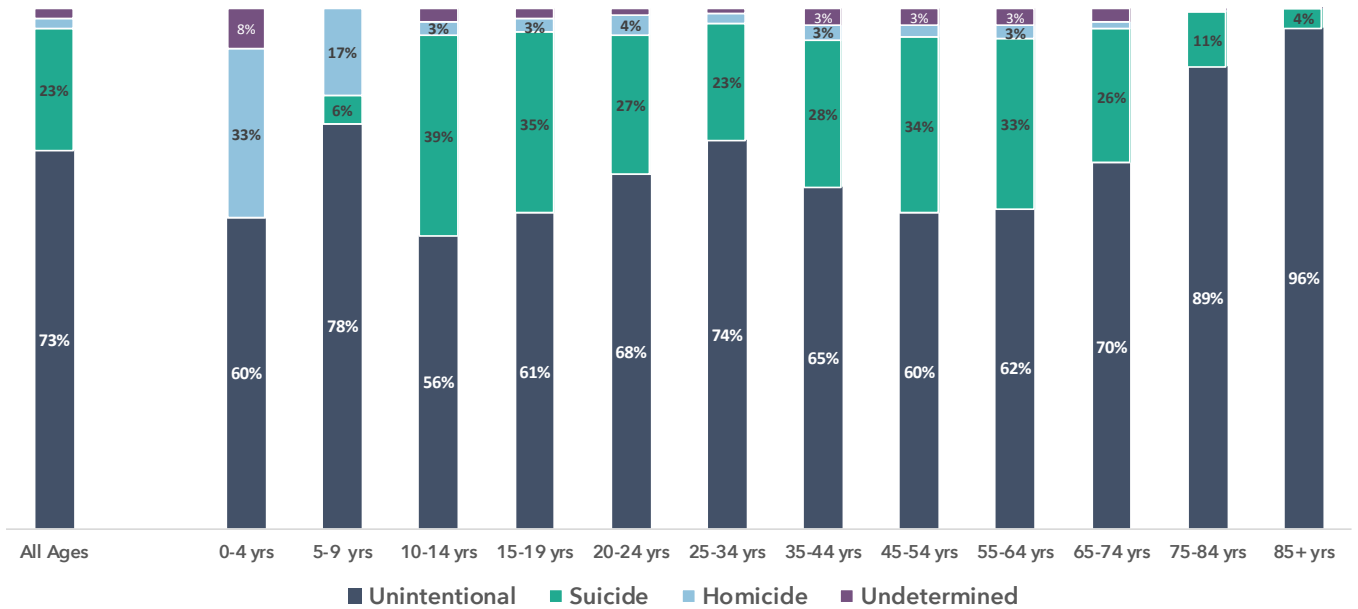
Data Source: National Center for Health Statistics (NCHS), National Vital Statistics System

When looking just at injury deaths during the past decade (Figure 2), the increased incidence of suicide (green fill, and green in Table 1 above) is quite apparent, now a cause of nearly 1 in 4 of injury deaths across all ages. Also troubling is the number of injury deaths due to homicide, abuse and maltreatment (blue fill; also red fill in Table 1 above) seen in children ages 0-4 (33% of injury deaths) and 5-9 years (17% of injury deaths) during the last decade (Figure 2).

<sup>9</sup> Centers for Disease Control and Prevention (CDC), 10 Leading Causes of Death by Age Group, United States - 2017, accessed April 30, 2019, <https://www.cdc.gov/injury/images/lc-charts/leading-causes-of-death-by-age-group-2017-1100w850h.jpg>



Figure 2. Causes of Injury Deaths in NH by Age Group, 2008-2017.

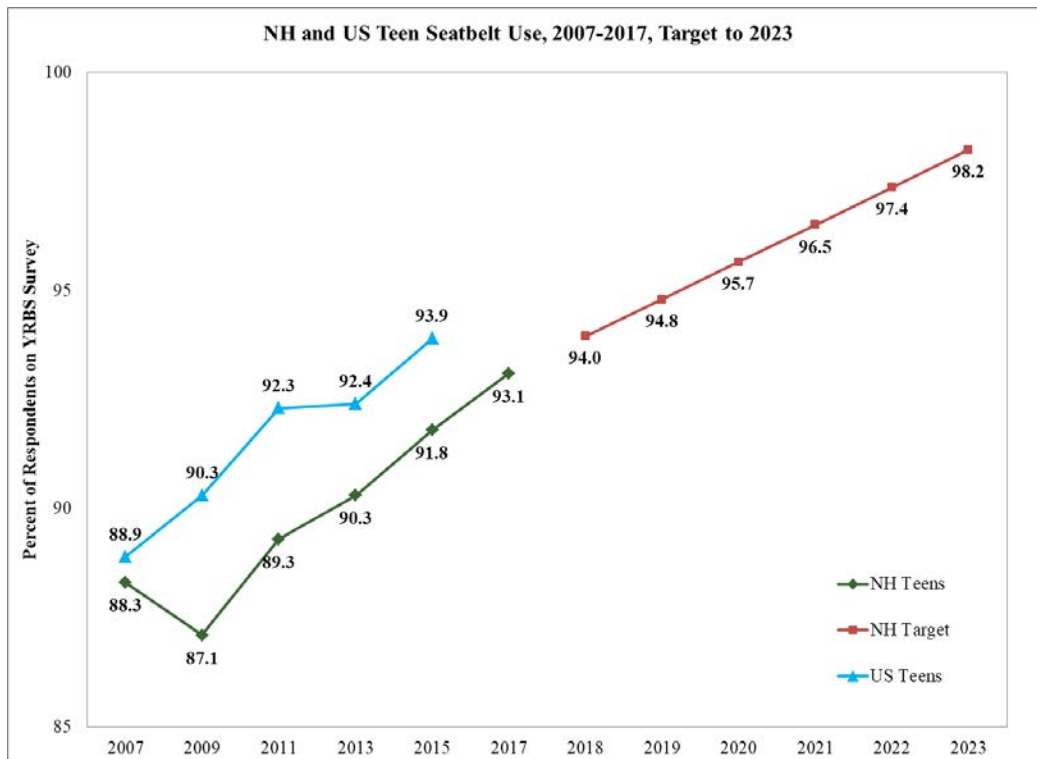


## Prevention Works

Public health practitioners recognize that injuries are not simply accidents or the result of bad luck. Because injuries are not random, they can be predicted, controlled, and in some cases, prevented. Prevention strategies aim to reduce risk factors for injuries and promote protective factors. Strategies are implemented through NH’s Violence and Injury Prevention infrastructure and partners. For example, over the past 11 years (2007-2017), prevention activities targeted at NH teens have resulted in a steady rise in the percent of youth ages 15-19 reporting wearing a seatbelt at least some of the time. (Figure 3).

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Figure 3. Teen Seatbelt Use on the Rise in NH



Yet new challenges have emerged in this same time. Opioid and other drug use in NH has swelled to epidemic proportions in the past decade. The popularity of off-road recreational vehicles has been an economic boost for NH's North Country, but contributed to a rise in traumatic injuries in youth and adults alike. The aging of NH's population combined with greater social isolation and other risks for older adults living alone have likely contributed to the increase in falls among those 65 years and older.<sup>10,11</sup> The following sections outline the direction that NH's Violence and Injury Prevention efforts will take over the next five years to address these and other challenges affecting the state's population.

<sup>10</sup> Burns E, Kakara R. Deaths from Falls Among Persons Aged  $\geq 65$  Years - United States, 2007-2016. *MMWR: Morbidity & Mortality Weekly Report*. 2018;67(18):509-514. doi:10.15585/mmwr.mm6718a1.

<sup>11</sup> Elliott, S. et al. (2009) Living Alone and Fall Risk Factors in Community-Dwelling Middle Age and Older Adults. *Journal of community health*. [Online] 34 (4), 301-310.

## Scope and Structure of the Plan

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This evidence-based plan describes strategies that New Hampshire will implement from 2020-2025 to prevent injuries in target areas. Separate plans exist for Suicide Prevention (<https://www.dhhs.nh.gov/dphs/bchs/spc/index.htm>) and Domestic and Intimate Partner Violence Prevention (pending on NH DHHS Injury Prevention Program website <https://www.dhhs.nh.gov/dphs/bchs/mch/injury.htm>). All other types of injuries were evaluated as potential target areas, considering all intents (*unintentional* vs. *intentional* (i.e., *violence*), mechanisms or causes, and outcomes (*fatal* vs. *nonfatal*). Patterns by age group powerfully informed target areas for prevention.

Based on CDC guidance<sup>12,13</sup> and interviews with other states who recently updated their State VIP plans, we considered six factors in determining the target areas for NH's Violence and Injury Prevention efforts for the next five years:

1. High rates of injury and violence deaths, hospitalizations, and/or emergency visits
2. Political will and priority of stakeholders, including the Injury Prevention Advisory Council
3. Availability of evidence-based interventions
4. Existing (or likely potential) momentum for the work through local and regional implementation partners
5. Funding availability and/or ability to leverage various funding sources to address multiple forms of violence and injury
6. Availability and quality of data to assess progress over a five-year period

As seen in Figure 4 below, from 2013-2017, overdose and poisoning (brown) caused the greatest proportion of injury deaths in NH adults ages 20-64, followed by motor vehicle crashes (blue). Motor vehicle crashes are the leading cause of injury death among NH teens, whereas falls (purple) cause the vast majority of injury deaths in those 65 year and older. In those ages 0-14, a mix of causes contribute to unintentional injury deaths, but referring back to Figure 2 above, one in three NH children under age 5 die from

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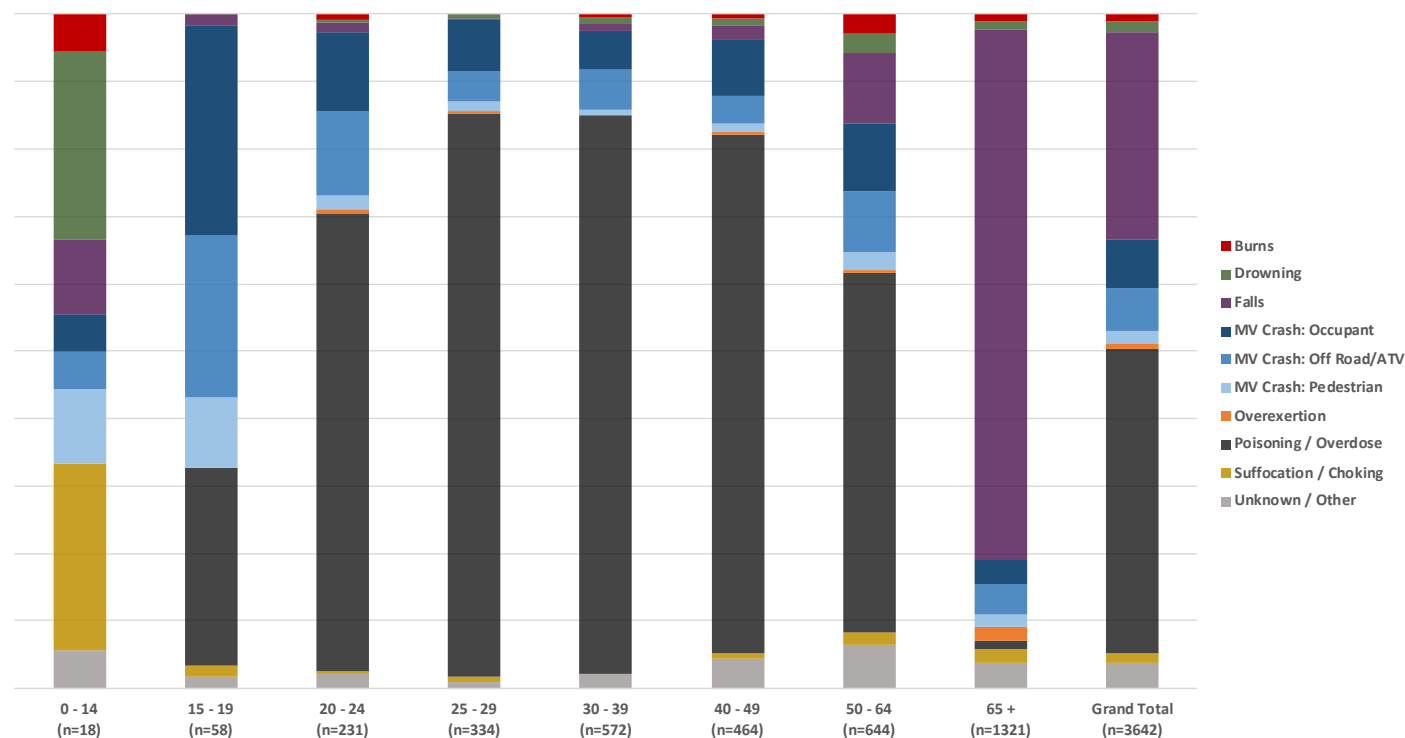
<sup>12</sup> Wilson, L., Deokar, A.J., Zaesim, A., Thomas, K. and Kresnow-Sedacca, M.J., 2018. Development of a comprehensive and interactive tool to inform state violence and injury prevention plans. *Journal of public health management and practice: JPHMP*, 24(Suppl 1 INJURY AND VIOLENCE PREVENTION), p.S59.

<sup>13</sup> Thigpen, S., Puddy, R.W., Singer, H.H. and Hall, D.M., 2012. Moving knowledge into action: developing the rapid synthesis and translation process within the interactive systems framework. *American journal of community psychology*, 50(3-4), pp.285-294.

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abuse and other forms of violence. These data inform our injury and violence priority areas for the next five years.

Figure 4. Causes of Unintentional Injury Deaths in NH by Age Group, 2013-2017



Between March 2018 and June 2019, we convened quarterly meetings with the Injury Prevention Advisory Council and other key violence and injury stakeholders around the state to review these and other trends in NH's violence and injury data, discuss current prevention efforts, and for each of the identified priority areas, consider the resources, partners, funding sources, and general momentum for ongoing work.

From this work, the following priorities were identified and will be the target of the current 2020-2025 State Violence and Injury Prevention (SVIP) plan:

### Unintentional Injuries:

- Motor vehicle crashes, with focus on seatbelt use, teen drivers, child passenger safety, driver inattention particularly related to commercial motor vehicle crashes, and the rising incidence of medical events behind the wheel
- Older adult falls
- Opioid overdose and other poisoning
- Childhood injury, including safe sleep, and prevention of concussions and traumatic brain injury (TBI) from sports and recreational injuries, and drowning

Violence / Intentional Injuries:

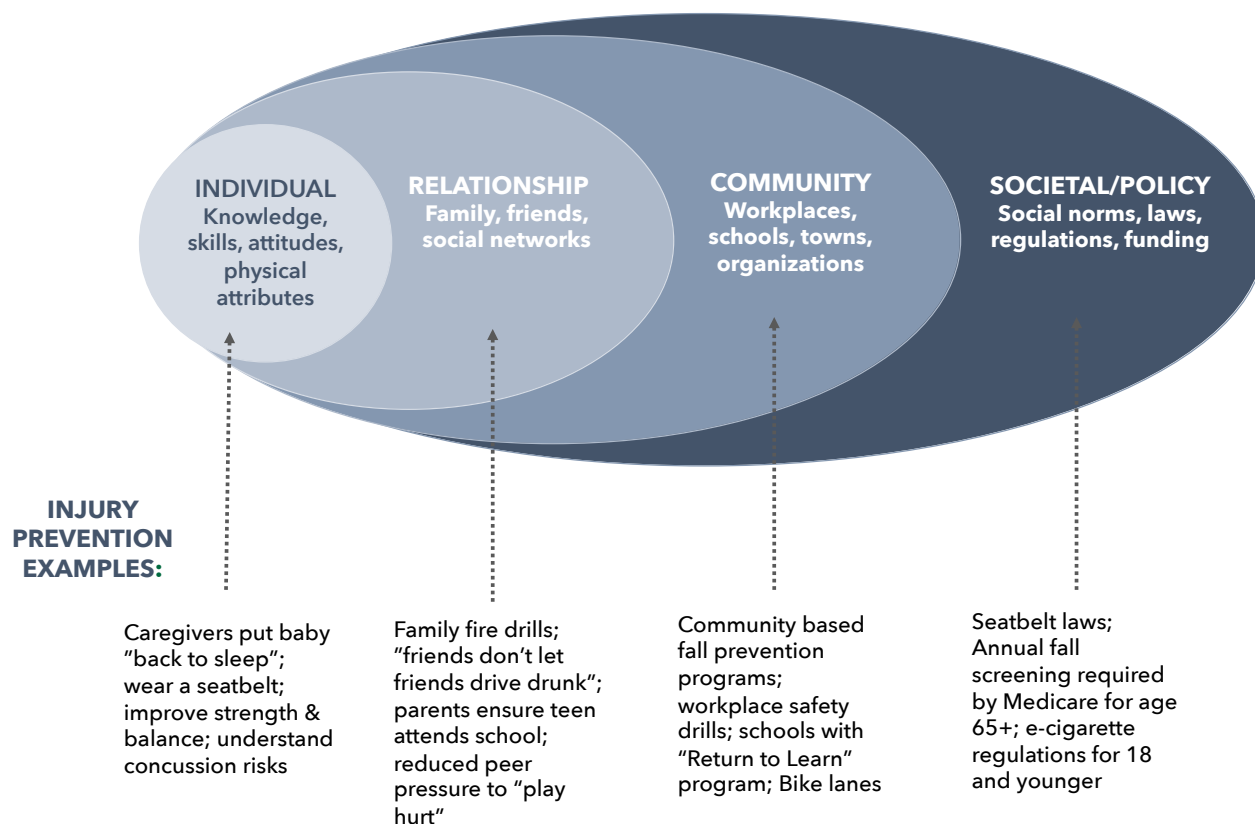
- with focus on infants and children birth to age 5
- In collaboration with our partners, leading to suicide and interpersonal violence

## Frameworks Guiding This Strategic Plan

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In creating this strategic plan, we relied on the Socio-Ecological Model (SEM) for prevention used throughout public health. The SEM recognizes that injury and violence interventions and prevention strategies can take place at many levels (Figure 5).

Figure 5. The Socio-Ecological Model (SEM) of Health

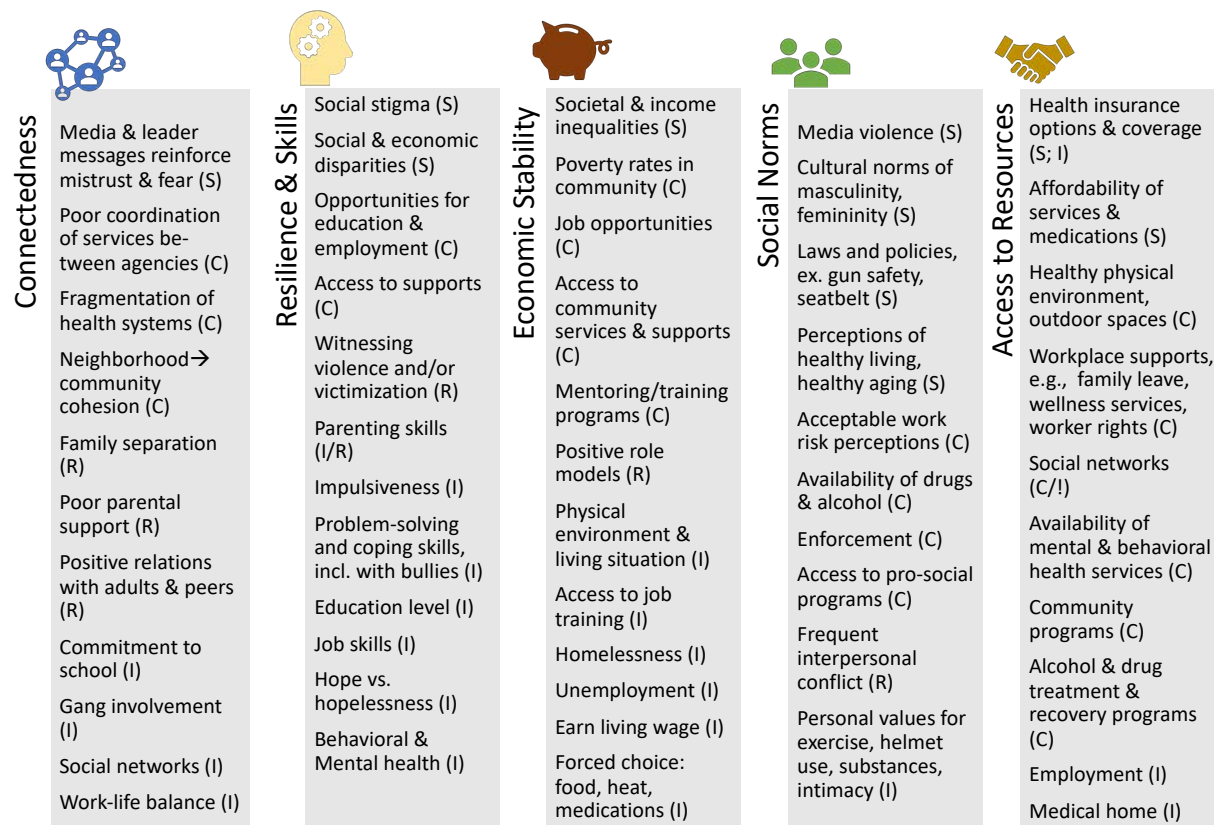


At the individual level, programs can promote greater awareness of risks, increase knowledge or skills, and address physical or behavioral attributes. At the interpersonal or relationship level, efforts can be targeted to parents, caregivers, peer or co-worker groups to enhance social supports, resiliency, attachment and nurturing. Violence and injury prevention strategies may also seek to effect change in organizations or communities by reducing environmental hazards or triggers for negative behaviors,

while strengthening support systems, access to services, and organizational structures to reduce injuries in schools, workplaces, and public areas. At the societal or policy level efforts may include media campaigns, advocacy work with state and national policymakers, new laws, and broader efforts to strengthen healthy social norms. We used the SEM to engage partners in considering the multiple levels at which violence and injury prevention efforts may be targeted, as well as the potential sources of risk and protective factors that may need to be mitigated or leveraged in reducing injury and violence at each level.

Figure 6 presents the five main domains of shared risks and protective factors that emerged in stakeholder discussions across all injury and violence target areas: Connectedness, Resilience and Skills, Economic Stability, Social Norms, and Access to Resources. This is not meant to be an exhaustive list, and risk and protective factors are mixed together to serve as examples of the favorable and negative influences on injury and violence within each domain. Historically, injury control programs have given more emphasis to efforts that mitigate or reduce risk factors, but in recent years, a more holistic approach has been advanced to promote and strengthen potential protective factors.

Figure 6. Risk & Protective Factors Shared across Injury and Violence Causes in NH



Level of Social Ecological Model: S=Societal/Policy; Community=C; Relationships=R; Individual = I



In identifying NH's shared risk and protective factors, stakeholders recognized a mix of risk and protective factors within each of the five domains and across the different levels of the SEM. For example, Connectedness encompasses risks associated with social isolation, family separation, and poorly coordinated or fragmented health systems. Protective factors within the Connectedness domain may include parental support, nurturing and healthy relationships in general, neighborhood cohesion and sense of community, and a commitment to school or work. By seeking strategies that address risk and protective factors that are shared across violence and injury prevention target areas, there is both a potential for greater impact and greater collaboration between partners, community organizations, and state agencies.

These frameworks were essential for guiding the development of the SVIP. We worked with partners leading efforts in each of the priority area to develop five-year goals based on current data trends while considering these risks and protective factors. Each topical group reviewed their current prevention strategies against available evidence, identifying additional supported interventions as able, and intermediate indicators to measure progress toward their goals.

In the sections that follow, we have compiled and summarized the work of our injury and violence stakeholders. For each main priority area, we present the overall burden to NH residents, specific risks and protective factors to consider in planning and implementation, goals for the next five years, strategies, partners, funding sources, and intermediate progress indicators.

## Motor Vehicle-Related Injuries and Deaths

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Motor vehicle crashes are the third leading cause of all deaths in New Hampshire, with 581 fatalities occurring in the last five years (2014-2018) at an average of 119 deaths per year. Not surprisingly, vehicle crashes in NH happen nearly twice as often in rural versus urban locations. For the past decade, the major cause of fatal motor vehicle crashes was impaired driving due to alcohol and/or other drugs (62% of 2018 fatal crashes). Second most common is operator error where in 2018, 31% of fatal crashes were due to failing to yield, recklessness, centerline breaches, and other driving errors. Medical events behind the wheel have been rising in recent years, accounting for 8% of fatal crashes in 2018 and occurring most often in older adults. The leading cause of non-fatal crashes is driver inattention or distraction.

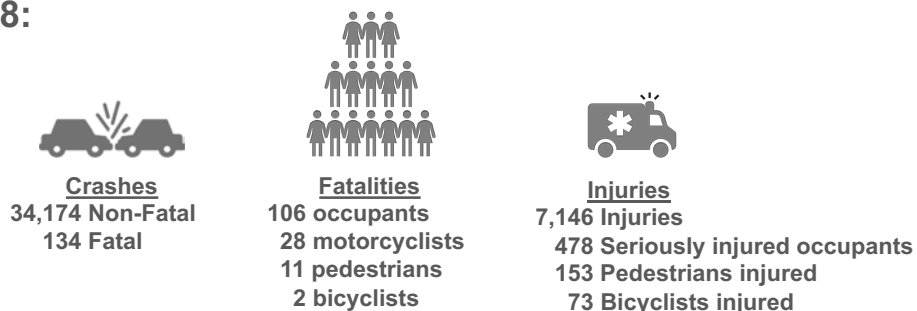


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The need for New Hampshire to take action to reduce injuries and deaths from motor vehicle crashes is clear. As seen in Figure 7, in 2018 alone, there were over 34,000 motor vehicle-related incidents resulting in 147 deaths and 7,146 injuries. The human and economic consequences of motor vehicle crashes are unacceptable, unaffordable, and preventable. As reported in NH’s Strategic Highway Safety Plan 2017-2021, over the past five years, traffic crashes have cost New Hampshire residents an estimated \$8.4 billion, though the loss of even one life is immeasurable.

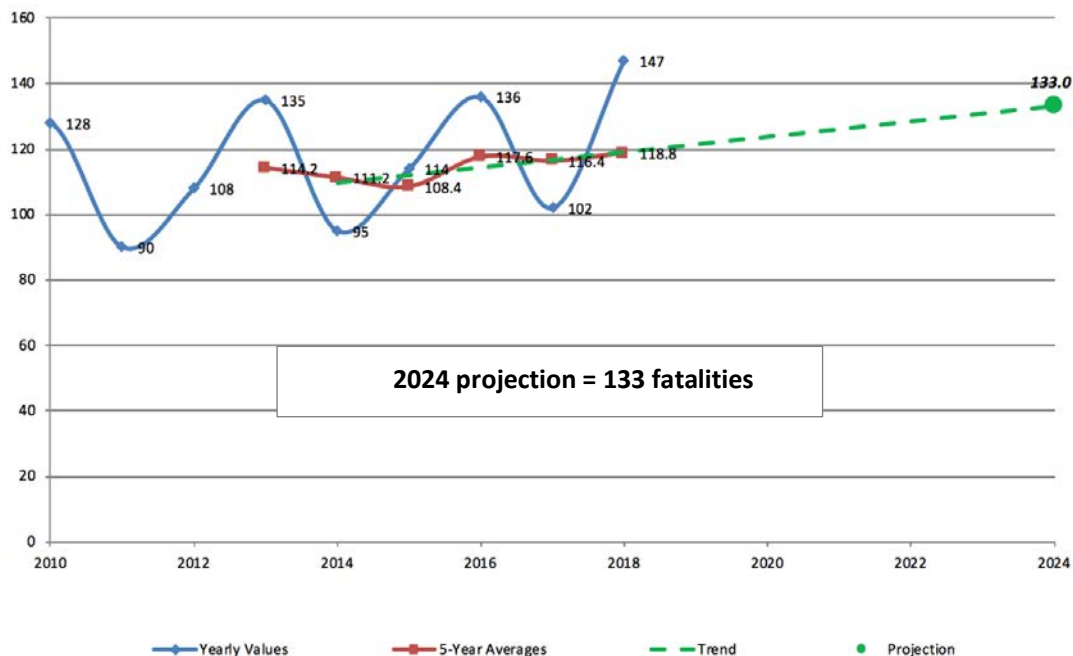
Figure 7. 2018 Motor Vehicle Related Crash Statistics (Source: NH Dept. of Safety Crashes Database)

### In 2018:



While the annual number of motor vehicle fatalities has fluctuated over the past 10 years, 5-year projections suggest that NH will experience slightly higher numbers by 2024 (133 crashes) even when population size is accounted for (Figure 8).

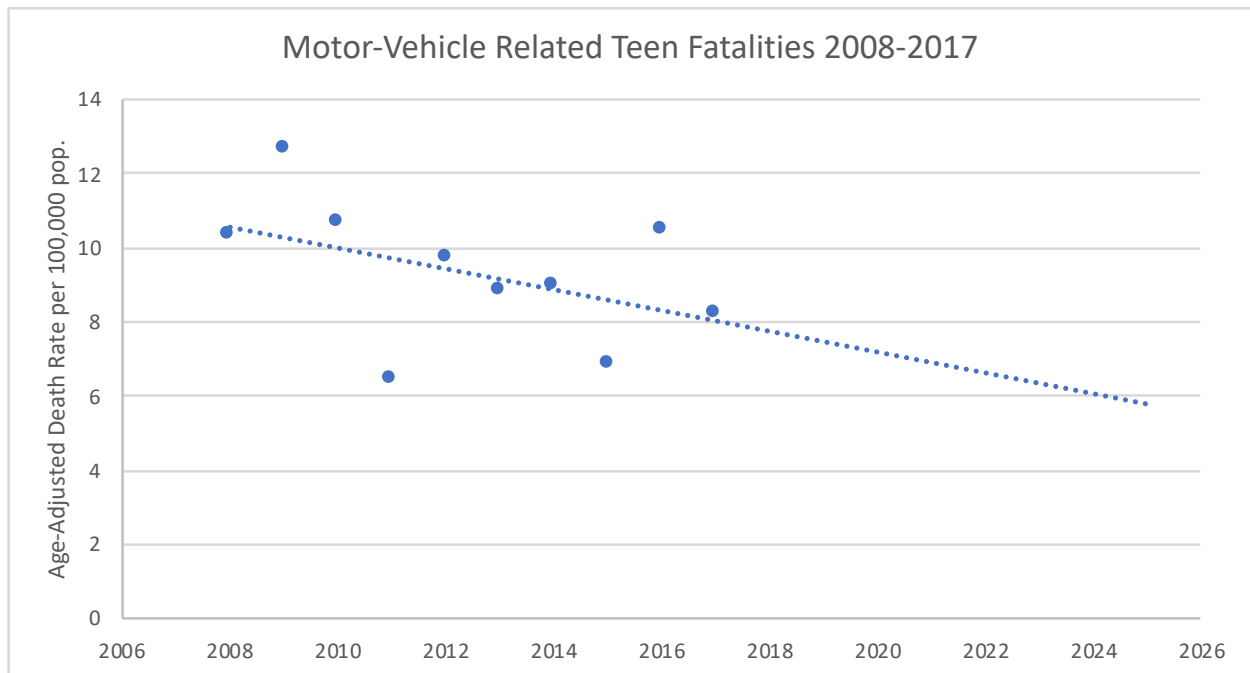
Figure 8. Motor Vehicle Fatalities in NH, 2010-2018, projected to 2024.



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Newly licensed drivers ages 15-19 and children ages 1-9 are most at risk of dying in a motor vehicle crash in NH. Speed and inexperience of novice drivers are the major causes of fatal crashes among adolescents in New Hampshire. While the rate of teen motor vehicle fatalities has been declining over the past 10 years (Figure 9), there were still 53 deaths of teens ages 15-19 over the past five years (2014-2018). Continued efforts in teen driving safety, including promotion of seat belt use and avoidance of distractions, remain a priority for the next five years with a main goal to expand the reach of education programs across the state to more high schools.

Figure 9. Rate of Motor Vehicle Fatalities per 100,000 Teens Ages 15-19, 2008-2017 with Projections to 2025



To address the higher risks of death in children ages 1-9 in motor vehicle crashes, in 2014, RSA 265:107a was passed to strengthen child passenger safety by more clearly defining the age and size requirements for use of car seats and booster seats, and requiring seatbelts for all children up to age 18 years. However, NH does not have an adult seatbelt law, and in a NH Office of Highway Safety-UNH 2018 observational study, almost 1 in 4 NH adults (24% of drivers and front seat passengers) still were not wearing restraints. NH's seat belt use rate has hovered around 70% for the last five years compared to a national rate of 90%. The absence of an adult seat belt law sends mixed messages to teen drivers and also translates into NH having one of the highest unrestrained fatality rates in the nation where in 2018, 68% of fatal crash victims were not wearing seatbelts.

## Child Passenger Safety

Overall, child passenger safety has been one of the great successes in injury prevention across the state. We see relatively few injury deaths in this area. Support from the New Hampshire Office of Highway Safety has enabled the NH Child Passenger Safety Program, at the Injury Prevention Center at the Children's Hospital at Dartmouth Hitchcock, to train and maintain over 200 child passenger safety techs in the state and 55 car seat fitting stations. This program also interfaces with organizations and stakeholders that work with and transport children such as the Division of Child, Youth and Families (DCYF), home visiting, hospitals, law enforcement and Emergency Medical Services. The infrastructure has been built but must be maintained to sustain these low mortality and morbidity levels. Many of the car seat technicians and fitting stations function in volunteer capacities so this workforce is fluid and in need of ongoing support and resources to remain viable.

Recently an emerging issue has been identified related to child passengers riding in utility task vehicles (UTVs) or Off Highway Recreational Vehicles (OHRVs) which causes great concern among child safety advocates. In September 2019 new legislation went into effect regarding transporting child passengers on OHRVs/UTVs. The concern stems from the design of UTVs as "off road vehicles" with adult-sized equipment, yet many are being driven on public roads with children on board. There will be a concerted effort over the next five years to work with partners such as NH Fish and Game Department, the Department of Safety, and law enforcement to address these concerns. Refer to the later section on unintentional childhood injuries for more about the consequences of OHRV/UTV crashes in children, including Traumatic Brain Injury (TBI), concussions, and bodily trauma.

## Work-Related Commercial Motor Vehicle Crashes

Work-related commercial motor vehicle crashes (CMVC) and exposure to road traffic hazards can result in serious injury and often in a worker's death. According to the National Institute for Occupational Safety and Health (NIOSH),<sup>14</sup> in 2017, "motor vehicle crashes made up 35% of all work-related injury deaths in the United States, and were the first or second leading cause of death in every major industry group<sup>15</sup> and 45% of the crash-

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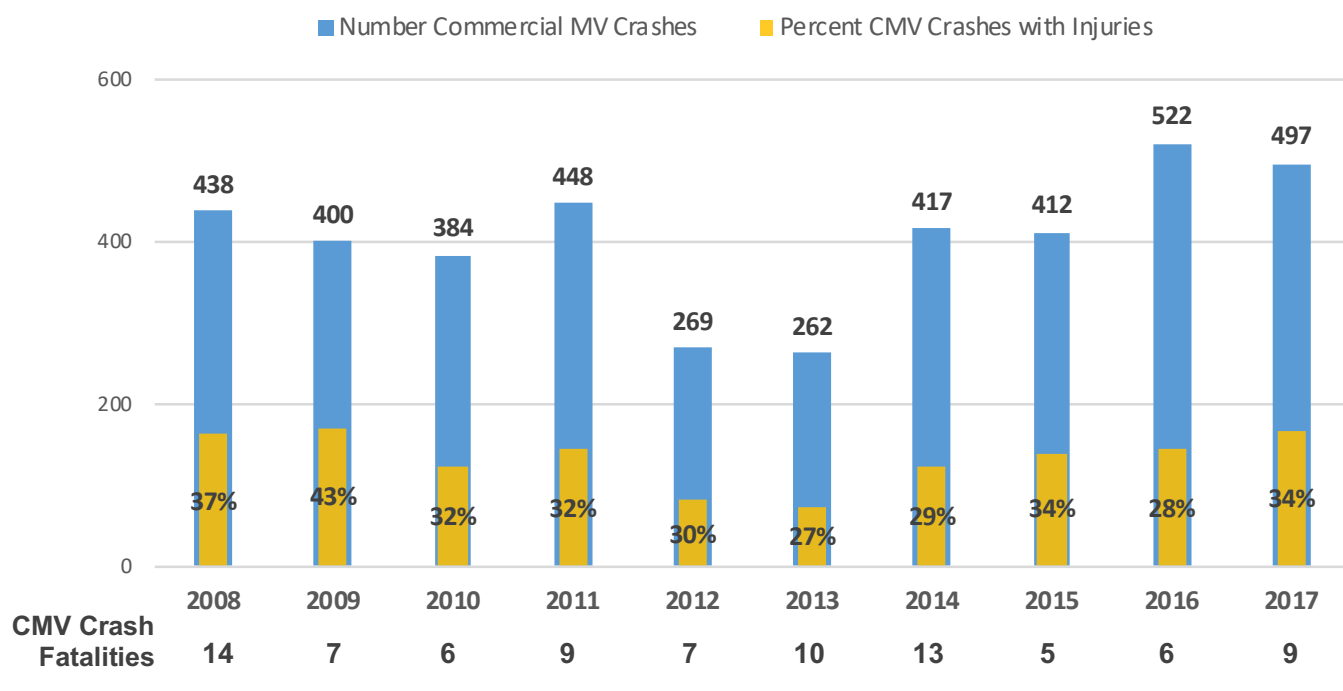
<sup>14</sup> NIOSH Center for Motor Vehicle Safety at: <https://www.cdc.gov/niosh/motorvehicle/ncmvs/bni.html>

<sup>15</sup> BLS [2018]. [Table A-2. Fatal occupational injuries resulting from transportation incidents and homicides, all United States, 2017](#). Washington, DC: U.S. Department of Labor, Bureau of Labor Statistics

related deaths involved workers employed as motor vehicle operators, with the remaining 55% employed in a range of other occupations.”<sup>16</sup> Although motor vehicle crashes are the leading cause of death in truck drivers, CMV crashes result in far more fatalities of other road users. In the past decade in NH, the majority (68%) of commercial motor vehicle crashes involved a collision with another motor vehicle demonstrating the impact that work vehicles have on the safety of the motoring public. Crash-related fatalities and serious injuries have a devastating impact on workers, their families, and the economic health and productivity of American businesses. In 2013 (the last-reported year of cost data), on-the-job motor vehicle crashes cost employers \$25 billion nationally, with an average cost of \$65,000 for non-fatal worker injuries, and \$671,000 per fatality.<sup>17</sup>

Between 2008 and 2017, NH saw a total of 4,049 CMV crashes, 86 (2%) of which involved fatalities, and 1320 (33%) where injuries occurred requiring medical assistance. A breakdown of NH CMV crash statistics are shown in Figure 10.

Figure 10. Number of Commercial MV Crashes in NH 2008-2017 and Percent of CMV Crashes with Injuries.

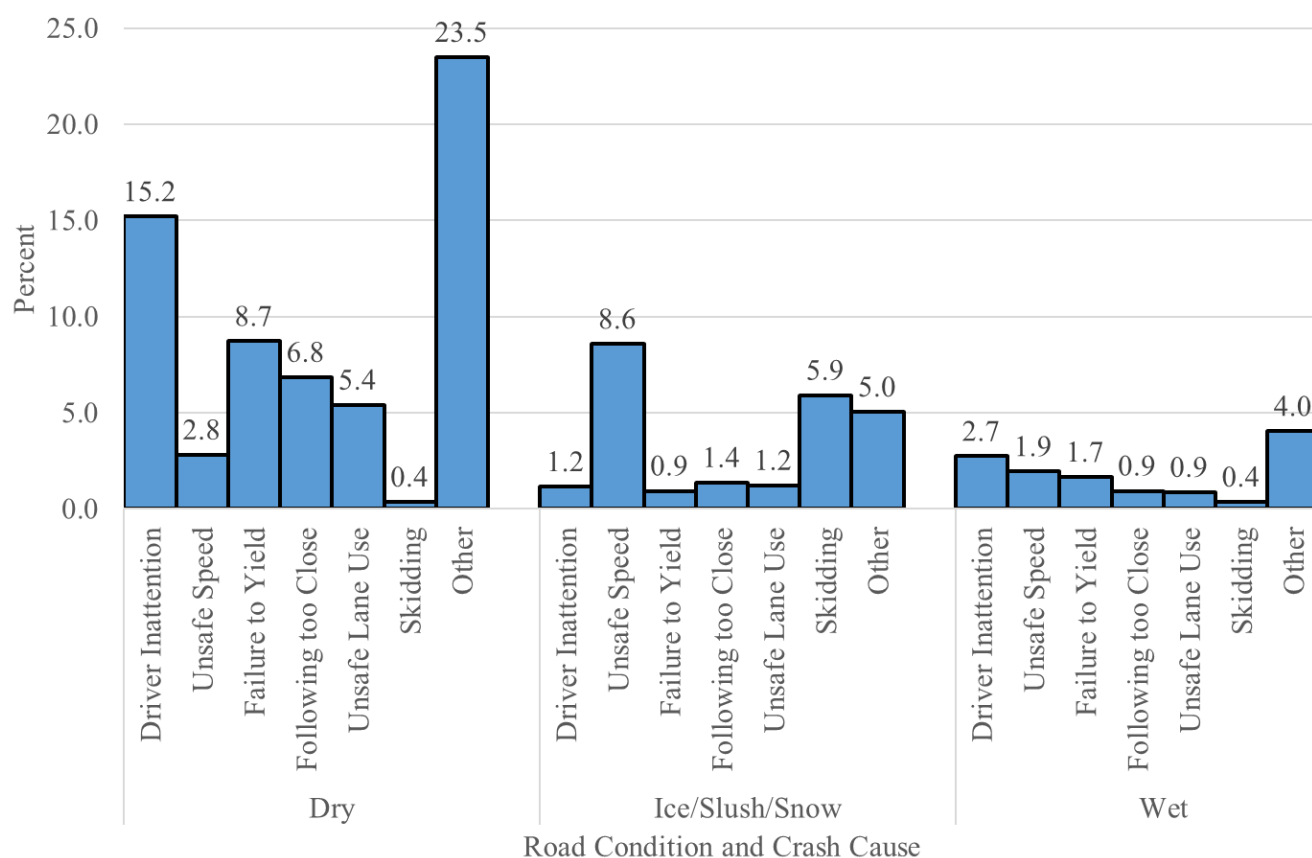


<sup>16</sup> BLS [2018]. [Table A-6. Fatal occupational injuries resulting from transportation incidents and homicides by occupation, all United States, 2017](#). Washington, DC: U.S. Department of Labor, Bureau of Labor Statistics

<sup>17</sup> <https://www.cdcfoundation.org/pr/2016/job-vehicle-crashes-cost-us-employers-25-billion-annually>

While there are many reasons behind CMV crashes (weather, driver inexperience, excessive speed, fatigue), there is growing concern about the effects of distracted driving on workers who spend their workdays on the road. One study has shown that drivers at work are more likely to be in a hurry, be tired, use a cell phone or are otherwise distracted while driving.<sup>18</sup> As seen in Figure 11, CMV crashes occurring in NH between 2015-2017 were more frequently associated with driver inattention, failure to yield, or unsafe speed in poor conditions (Note: "Other" causes include weather events and non-operator causes such as high wind, downed power lines, and flooded roads).<sup>19</sup> By understanding the contributing factors and actions that increase the risk of commercial motor vehicle crashes and resulting injuries, we can develop strategies to prevent them.

Figure 11. Percent of Commercial Motor Vehicle Crashes in NH 2015-2017 by Road Condition and Crash Cause.



<sup>18</sup> Salminen S, Lähdeniemi E [2002]. Risk factors in work-related traffic. Transportation Research Part F 5(1):77-86.

<sup>19</sup> <https://iod.unh.edu/sites/default/files/media/NHOHSP/Pubs/motorvehicle.pdf>



## Risk and Protective Factors for Motor Vehicle-Related Injuries

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### Social Norms

- Peer pressure and seatbelt or helmet use, esp. teens and young adults
  - No adult seatbelt law & decreasing cost of fines for motor vehicle offenses in NH
  - Child passenger restraint laws
  - NH's "Live Free or Die" motto
  - Risky driving behaviors, including speeding, esp. in young males
  - Roadway messaging offers opportunity to reframe social norms
  - The Federal Motor Carrier Safety Administration establishes safety standards for CMVs including a prohibition against texting and using a hand-held mobile telephone
  - Long-haul truck drivers are expected to drive long hours, increasing risk of drowsy and distracted driving
- 



### Economic Stability

- Families may have to choose buying food, heat, and housing rather than having money to repair an unsafe vehicle or purchase a new child safety seat
  - Few public transit options coupled with longer commuting distances and higher rates of driving alone compared to national average
  - Tension between promoting the state's economic growth (e.g., commercial highway use, recreational vehicles) while protecting worker rights and public safety
- 



### Resilience & Skills

- New drivers have less experience in reading road conditions, handling busy traffic situations, and controlling distractions or impulsiveness.
  - All drivers must exert impulse control to resist texting while driving.
  - Dashboard infotainment and navigation systems lead to greater distractions. NH's Hands Free law went into effect in 2015 but enforcement is challenging.
- 



### Access

- High schools offer Teen Driver Program
  - Access to free, public safety inspections can help families ensure their child's safety seat is properly installed and will protect the child in a crash.
  - More public transit options could reduce total miles driven
  - OSHA requires that all commercial motor vehicles be checked at the beginning of each shift to assure that equipment and accessories are
-

in safe operating condition and free of apparent damage that could cause failure while in use.

- Safety checks on the highway for commercial motor vehicles
  - Use of safety systems designed to assist commercial motor vehicle drivers in maintaining control of the vehicle and reducing crash risk.
- 



- Parental support and positive parent role models can reduce teen engagement in risky driving behaviors.<sup>20</sup>

## Connections

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## Goals & Objectives: 2020-2025

Based on the primary causes of fatal crashes in our state and the risk and protective factors for injuries due to motor vehicle crashes, the target areas for New Hampshire's prevention efforts related to motor vehicle crashes are:

- Teen driver safety
- Vehicle occupant protection including seatbelt use and child passenger safety
- Monitoring of the "medically at risk driver" and driver inattention, particularly in commercial motor vehicle crashes

### Where does NH want to be in 2025?

Reduce motor vehicle fatalities in all age groups to less than 133 per year, for a rate of less than 13 per 100,000.

Reduce motor vehicle-related fatalities in teens ages 15-19 to less than 7 per year, for a rate of 9 per 100,000.

Reduce the rate of hospitalizations due to motor vehicle crashes involving children and youth ages 0-14 to less than 215 per 100,000.

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<sup>20</sup> National Institute of Child Health Development  
<https://www.nichd.nih.gov/health/topics/driving/conditioninfo/risk-factors>

Strategies for Reducing Injuries due to Motor Vehicle Crashes	
Societal & Policy Level	<ul style="list-style-type: none"> <li>• Enhance NH occupant restraint law to include all occupants.</li> <li>• Incorporate best practice aspects of Graduated Driver Licensing for youth operators</li> <li>• Utilize media outreach efforts to educate the public about risk and protective factors, e.g., teen PSA contest for teen driving safety</li> <li>• Enforcement of hands-free law</li> <li>• Reactivate a Medical Review Board to assist Department of Motor Vehicles with medical event issues</li> <li>• Enhance child restraint law to incorporate best practice</li> <li>• Enhance laws to protect pedestrians</li> <li>• Increase fines for speeding, distraction and impairment</li> <li>• Enhance state efforts in crash investigation and reporting</li> </ul>
Community & Organizational	<ul style="list-style-type: none"> <li>• Teen driving safety program in schools</li> <li>• Child passenger safety program, incl. community car seat fitting stations, training of local first responders to be fit technicians</li> <li>• Bike helmet &amp; safety vest distribution</li> <li>• Promote organizational policies to ensure there are enough staff and resources to run a commercial MV safety program</li> <li>• Educate, reinforce community uptake of information disseminated at NH's Traffic Safety Conference</li> <li>• Signage / Environmental cues near pedestrians byways, bike lanes, unusual traffic patterns</li> <li>• Increased education to healthcare providers and school officials around protective factors</li> <li>• Increased enforcement around protective factors</li> </ul>
Interpersonal & Individual	<ul style="list-style-type: none"> <li>• Parent education about driving safety to help guide their teens in regards to risk and protective factors.</li> <li>• SAFE Kids 301 event – bike safety for kids</li> <li>• Drivers Education for all unlicensed drivers</li> </ul>

## Partners

- Division of Public Health Services, NH  
Department of Health and Human Services
- Injury Prevention Center at Children's Hospital  
at Dartmouth-Hitchcock
- Federal Highway Safety Administration
- National Institute for Occupational Safety &  
Health (NIOSH)
- Occupational Safety and Health Administration  
(OSHA)
- NH Department of Safety
- NH Department of Motor Vehicles
- NH Department of Transportation
- Driver Education Association
- Buckle Up New Hampshire
- Municipal Fire and Police
- Hospitals
- Schools
- Teen Driving Committee
- SAFE Kids New Hampshire
- Community Alliance for Teen Safety from Derry
- AAA of Northern New England
- National Safety Council of Northern New  
England
- New Hampshire Motor Speedway
- Driver Education Program

## Funding Sources

- Federal Highway Safety Administration
- New Hampshire Office of Highway  
Safety
- NH DHHS Maternal and Child Health  
Section
- Centers for Disease Control and  
Prevention
- Health Resources and Services  
Administration
- Dale Jr. Foundation
- National Highway Traffic Safety  
Administration
- Safe and Active Grant
- Kohl's
- Ford Corporation
- AT&T
- New Hampshire Auto Dealers  
Association

## How will we know we're making progress?

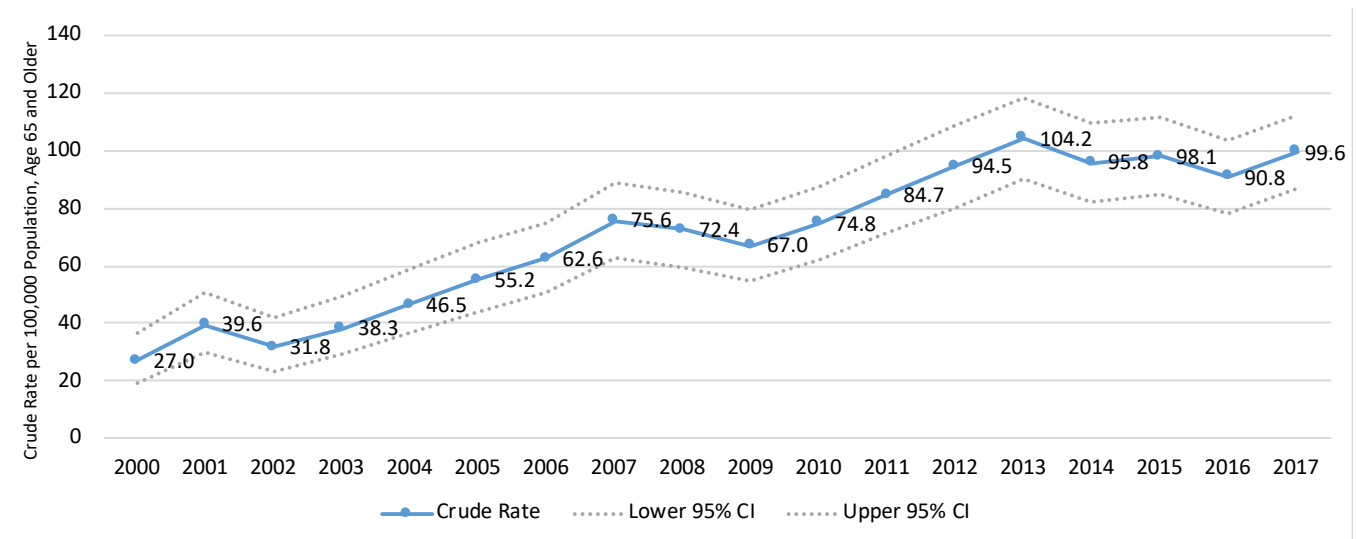
- 1) UNH seatbelt observation study shows > 80% use of seatbelts in front seat occupants (up from 76% in 2017).
- 2) Increase the percentage of teens reporting always or almost always wearing seatbelt to > 95% on the Youth Behavior Risk Survey.
- 3) Decrease the number of students reporting that they are texting and driving to less than 35% on the Youth Behavior Risk Survey.
- 4) Meet annually with NH DOS/DOT stakeholders to review crash statistics and performance data and assess progress on meeting core measures.

## Older Adult Falls

In 2016, 17% of New Hampshire residents were age 65 and older and by 2020 that number is projected to reach 20%.<sup>21</sup> NH ranks third among all U.S. states for the fastest growing older population.<sup>22</sup>

Unintentional falls are New Hampshire’s leading cause of death among those age 65 and over, and the fourth leading cause of death among those age 55-64. The rate of fall-related deaths has been increasing since the early 2000’s (Figure 12).

Figure 12. Fall-Related Deaths in NH 2000-2017 among those 65 years and older (Source: NH Vital Records)



For every 100,000 residents age 65 and over in NH, falls led to 97.1 deaths, 133.5 hospitalizations, and 523.3 visits to emergency rooms between 2012-2016. The most vulnerable are adults 85 and older who have the highest incidence of fall-related deaths and hospitalizations. Falls in NH older adults happen most frequently in winter months, and disproportionately affect those living in Strafford, Grafton and Coos counties.<sup>23</sup>

Nationwide, one in four adults age 65 and older fall each year. Of these, 20-30% sustain moderate to serious injuries, such as hip fractures and traumatic brain injuries. Such injuries are associated with functional decline and can make independent living

<sup>21</sup> New Hampshire State Plan on Aging, DHHS, BEAS 2015-2019, p. 7

<sup>22</sup> United States Census Bureau, A Snapshot of the Fast-Growing U.S. Older Population, accessed May 8, 2019.

<sup>23</sup> CDC Wonder, NH county fall-related Injury Deaths, 2013-2017.

impossible. Falls are a strong predictor of placement in a nursing home among older adults living in the community.<sup>24</sup>

A 2015 study found that 75% of the costs of nonfatal older adult falls are paid by government-funded programs, with Medicare paying 58% and Medicaid paying 18% of the \$50 billion total.<sup>25</sup> In 2016 over 10,155 New Hampshire older adults went to the emergency department and over 2,508 were hospitalized incurring hospital charges of \$144,152,517.00.

## Risk and Protective Factors For Older Adult Falls

There are a number of factors specific to individuals that increase the risk of falls, including loss of strength and balance, certain medications for common problems of aging, such as antihypertensives and diuretics, and environmental hazards, such as obstacles in pathways or on stairs, unsupportive or ill-fitting footwear, unsuitable assistive devices, inadequate lighting, slippery surfaces, cracked pavement or sloped yards.<sup>26</sup> Fall screening which assesses an individual's specific risks for falls is an important protective factor. Screening can lead to recommendations for intervention in high risk individuals.

Among the risk and protective factors shared across NH's main injury and violence areas, several are pertinent to falls. While most falls affect those age 65 and older, NH's Injury Prevention Program works through the NH Falls Risk Reduction Task force to engage with multiple partners including Occupational Health and Safety to monitor injuries and deaths occurring on the job. The Task Force itself is the oldest standing falls prevention task force in the country and has been the driving force behind the promotion of falls prevention awareness, education and promotion of evidence based programs such as *Tai Ji Quan: Moving for Better Balance* and *Matter of Balance* in NH. This work is ongoing due to the dedication and support of falls prevention advocates. More information about the Task Force and its efforts can be found at [www.nhfalls.org](http://www.nhfalls.org).

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<sup>24</sup> Gill TM, Murphy TE, Gahbauer EA & Allore HG. Association of injurious falls with disability outcomes and nursing home admissions in community-living older persons. *American Journal of Epidemiology*, 2013 Aug 1;178(3):418-25

<sup>25</sup> Florence CS, Bergen G, Atherly A, Burns E, Stevens J, Drake C. Medical costs of fatal and nonfatal falls in older adults. *Journal of the American Geriatrics Society*. 2018 Apr;66(4):693-8.

<sup>26</sup> Phelan EA, Aerts S, Dowler D, Eckstrom E, Casey CM. Adoption of evidence-based fall prevention practices in primary care for older adults with a history of falls. *Frontiers in public health*. 2016 Sep 8;4:190.



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	<ul style="list-style-type: none"><li>• Social stigma around aging can be a barrier to seeking fall screening and prevention</li><li>• Normalization of falls in older adults in media, TV and even medical providers</li><li>• Perceptions, messages about exercise benefits to counter effects of aging</li><li>• Lack of awareness of individual risk and protective factors associated with falls (among seniors; providers)</li></ul>
Social Norms	
	<ul style="list-style-type: none"><li>• Economic hardship; difficulty buying medications vs. food, heat and other necessities</li><li>• Lack of prescription drug insurance</li><li>• Hoarding associated with long-term economic hardship</li><li>• Poor quality living situation with environmental hazards</li><li>• Homelessness or limited housing options</li><li>• Transportation to exercise or community programs</li></ul>
Economic Stability	
	<ul style="list-style-type: none"><li>• Strength, balance, flexibility and overall fitness</li><li>• Knowledge of fall prevention strategies</li><li>• Participation in fall prevention and balance programs</li></ul>
Resilience & Skills	
	<ul style="list-style-type: none"><li>• Access to transportation assistance</li><li>• Access to evidence-based fall prevention programs</li><li>• Access to fall screening, or providers knowledgeable in fall screening and prevention</li><li>• Medicaid expansion</li></ul>
Access	
	<ul style="list-style-type: none"><li>• Neighborhood support and cohesion</li><li>• Intergenerational supports</li><li>• Fragmented health systems; poor coordination of services between agencies limit regular screening</li><li>• Community programs, e.g., senior meals</li><li>• Fire and police periodic checks on seniors</li></ul>
Connections	

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## Goals and Objectives: 2020-2025

Where does NH want to be in 2025?	
Reduce the rate of increase in fall-related deaths in older adults by 11% resulting in a projected death rate in 2025 of 107 per 100,000 instead of current trend of 127.3.	

Strategies for Reducing Injuries due to Older Adult Falls in NH	
Societal & Policy	<ul style="list-style-type: none"> <li>• Expand Northeast regional networks &amp; resources for fall prevention</li> <li>• Create Statewide Fall Prevention Referral Hub</li> <li>• Promote fall screening best practices with providers by utilizing the CDC’s STEADI toolkit.</li> </ul>
Community & Organizational	<ul style="list-style-type: none"> <li>• Expand number of fall prevention programs (e.g., Matter of Balance (MOB) and Moving for Better Balance (TJQMMB) in all regions of state</li> <li>• Train providers in fall screening and area fall prevention programs</li> <li>• Sustain NH Falls Task Force with meetings &amp; expanded partnerships</li> <li>• Encourage fall risk screening within primary care at Community Health Centers (15 contracts with DHHS)</li> <li>• Embed fall screening in Electronic Medical Records</li> <li>• Encourage partnerships with fire prevention and emergency services to utilize “Remembering When” programs to reduce fire and fall risk for older adults.</li> <li>• Establish housing association activities aimed at preventing falls</li> <li>• Systematize fall screening, e.g., at Community Balance Days and Primary Care visits</li> </ul>
Interpersonal & Individual	<ul style="list-style-type: none"> <li>• Train caregivers in fall screening and prevention opportunities</li> <li>• Create awareness among seniors and their caregivers about fall prevention programs (e.g., MOB &amp; TJQMMB)</li> <li>• Ensure access to fall prevention programs</li> </ul>

## Partners

- Statewide Trauma Registry
- Medicaid Managed Care in NH (potential PACE program)
- NH DHHS Bureau of Elderly & Adult Services
- NH Falls Risk Reduction Task Force
- Hospitals, Accountable Care Organizations & primary care providers
- NH Regional Public Health Networks
- Northern New England Geriatric Education Center (NNEGEC) and Dartmouth Centers for Health and Aging
- Meals on Wheels
- Visiting Nurse Associations, homecare providers, Parish nurse programs
- Fitness gyms/businesses
- Dartmouth Hitchcock Medical Center Ambulatory Falls Risk Reduction Task Force
- Senior Centers & Community Action Programs
- Local fire, police, and Emergency Medical Service agencies
- Local housing authorities
- National Fire Protection Association "Remembering When" program
- Service Link, transportation services
- NH Fire Marshal Office
- Bureau of Elderly and Adult Services
- Foundation for Healthy Communities

## Funding Sources

- NH DHHS Maternal and Child Health Section
- Centers for Disease Control and Prevention
- Administration for Community Living (ACL)
- Northern New England Geriatric Research Center
- Foundation for Healthy Communities

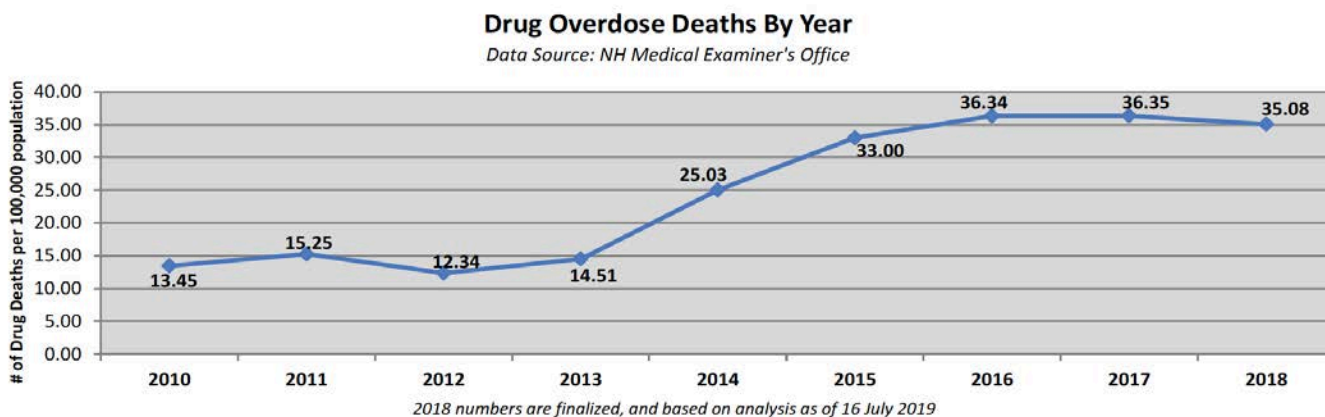
## How will we know we're making progress?

- 1) Increase the number of instructors trained, participants reached, and programs utilizing evidence-based fall prevention practices in NH.
- 2) Fall Risk Performance Measures at 13 Community Health Centers in NH will show improvement.
- 3) Will track participation of Bureau of Elderly and Adult Services participation with Task Force meetings as a link to NH Plan on Aging.
- 4) We will have gone from zero to at least one Managed Care Contract in NH that includes fall prevention programming for older adult clients.
- 5) Secure funding toward a statewide Fall Prevention Network Hub referral system.

## Opioid Overdoses and Other Poisoning

Drug use, especially use of opioids, has become a serious national crisis that affects social and economic welfare. According to the National Survey on Drug Use and Health, NH ranks among the highest in the country for illicit drug use among 18 to 25 year olds.<sup>27</sup> In 2016, the CDC ranked NH third in the nation for the number of opioid-related deaths relative to its population. With a steep incline in overdose deaths beginning in 2014 (Figure 13) , NH experienced its highest number of overdoses on record in 2017 at 484 deaths, equating to 36.35 deaths for every 100,000 persons. Nationally, the overdose death rate is 21.7 per 100,000. While 2018 saw a slight decrease in the total number of deaths (472), nearly 90% were from opioids, with more than 90% of those involving Fentanyl.<sup>28</sup>

Figure 13. NH Drug Overdose Death Rate per 100,000 Population, 2010-2018.



In 2018, Belknap County had the highest suspected drug use resulting in overdose deaths per capita at 4.75 deaths per 10,000 population, while Cheshire and Hillsborough County were nearly tied for the second highest, with 4.14 and 4.09 deaths per 10,000 population, respectively.

NH's workforce has been severely impacted by the state's opioid crisis in recent years. All age groups of workers have been affected by opioids, but in 2018, those in their prime working age of 30-49 accounted for 55% of lethal overdose deaths in workers. In the last five years in NH (2014-2018), those working in the construction industry have had

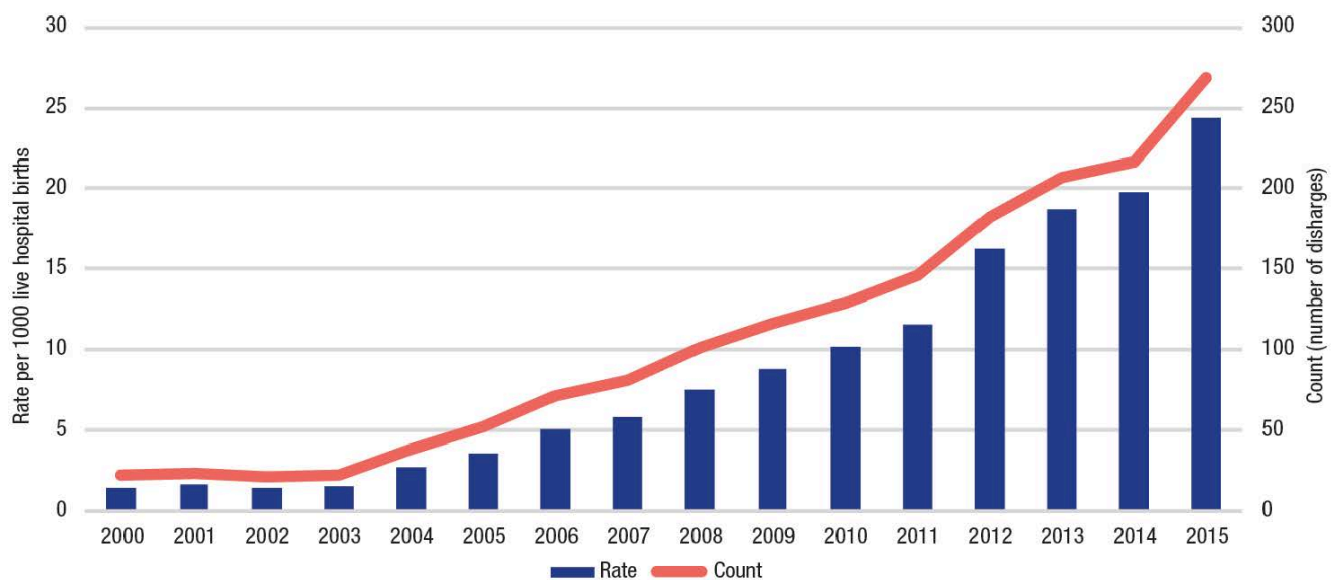
<sup>27</sup> Anyone, Anytime. Facts about NH's heroin, fentanyl, & other opioid crisis. Retrieved [05/14/18] from [https://www.nhshp.org/resources/Documents/Opioid%20Crisis%20FACTSheet\\_FINAL.pdf](https://www.nhshp.org/resources/Documents/Opioid%20Crisis%20FACTSheet_FINAL.pdf).

<sup>28</sup> May 2019 Drug Environment Report, NH Drug Monitoring Initiative, NH Information & Analysis Center. NHIAC Product # 2019-3751. NH.IAC@dos.nh.gov

the highest incidence of opioid overdose deaths, accounting for one-third (36%) of all overdose deaths among workers.<sup>29</sup>

The opioid crisis has not only affected the state’s workforce, but also babies born with neonatal abstinence syndrome (NAS), or neonatal opioid withdrawal syndrome (NOWS). A recent national study revealed a fivefold increase in the incidence of NAS/NOWS between 2004 and 2014, from 1.5 cases per 1,000 hospital births to 8.0 cases per 1,000 hospital births.<sup>30</sup> This is the equivalent of one baby born with symptoms of NAS/NOWS every 15 minutes in the United States. In NH, rates have also been on the rise (Figure 14), with 269 babies diagnosed with NAS/NOWS or 24.4 cases of NAS/NOWS per 1,000 hospital births.<sup>31</sup>

Figure 14. Neonatal Abstinence Syndrome Among NH Infant Discharges, 2000-2015.



While the State’s opioid crisis has dominated the attention of numerous public health and safety agencies across the state, a parallel concern has started to emerge in the rising trend in e-cigarette use among NH’s youth. In 2017, 24% of NH youth reported having used electronic vaping products in the past month which is nearly double that

<sup>29</sup> Northern New England Poison Center, 2018 Report.

<sup>30</sup> Winkelman, T. N., Villapiano, N., Kozhimannil, K. B., Davis, M. M., & Patrick, S. W. (2018). Incidence and costs of neonatal abstinence syndrome among infants with Medicaid: 2004–2014. *Pediatrics*, 141(4), e20173520.

<sup>31</sup> Smith, K. As Opioid Use Climbs, Neonatal Abstinence Syndrome Rises in NH. Winter 2017, Regional Brief #51, <https://carsey.unh.edu/publication/opioid-nas-nh>

of the national rate of 13% (Youth Behavior Risk Survey, 2017). While NH became one of the first states to prohibit the sale of e-cigarettes to minors under 18 back in 2010 (HB 1541), youth e-cigarette use continued to climb. Sparked also by a number of recent deaths nationally linked to vaping, in July 2019, NH House Bill 511 was signed into law to improve the NH statute *Youth Access to and Use of Tobacco Products* (NH RSA126-K) and expand definitions of devices, e-cigarettes and e-liquid to align with those developed by the U.S. Food and Drug Administration. This plan will include efforts to educate, monitor and enforce e-cigarette use among youth.

While the incidence of childhood poisoning continues to go down, 46% of calls from non-health care facilities (e.g., homes, schools, childcare centers, first responders, workplaces) to Northern New England Poison Center (NNEPC) in 2018 were for children under age 6. The vast majority (94%) were treated on site with poison center advice. Exposure to cardiovascular drugs, drugs to treat ADHD, nicotine-containing products and analgesics such as buprenorphine were the substance categories most frequently precipitating referral to a healthcare provider and/or treatment among children under 6 years.<sup>32</sup> As Medication Assisted Treatment (MAT) services expand to address NH's opioid crisis, the NNEPC will be closely monitoring unintended exposures to buprenorphine.

Overall, the NNEPC managed over 8,500 human exposures from NH in 2018, or 6.4 cases per 1,000 persons. The number of more serious poisonings in New Hampshire remained high. About 27% of poison center cases (n = 2,333) during this period were generated by calls from hospitals and physicians' offices; nationally, calls from health care facilities accounted for slightly less, or 24% of cases in 2017. Calls from first responders have seen the greatest increase in volume in recent years.

Occupational exposures accounted for 158 of the calls to NNEPC in 2018, or 807 cases over the last four years (2015-2018). Occupational poisonings happen most frequently through inhalation, contact with the skin or eyes, or accidental ingestion. NH workers come into contact with a wide range of toxic chemicals, fumes, cleaners and industrial products that are associated with a diverse variety of job roles and industry settings. The NNEPC provides a vital service to occupational health and safety officials in NH workplaces as well as healthcare providers treating exposures on the job and efforts to support the work and financial stability of the NNEPC will be important over the next 5 years. Given NH's rural setting and geographic distance to access emergency

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<sup>32</sup> The Northern New England Poison Center, Annual Report for NH. July 1, 2018-June 30, 2019.

healthcare in many regions of the state, coupled with an aging population and opioid crisis, the NNEPC is a critical component of NH's injury prevention infrastructure.

Moreover, the NNEPC provides important monitoring of substances involved in suicide attempts. Among NH youth ages 13-19, the most common substance groups involved in suicide attempts were antidepressants (21%) and non-opioid analgesics without sedatives (19%). Antidepressants top the list for those ages 20-59 and 60 and older at 16% and 18% respectively. NNEPC reports a rising prevalence of the use of cardiovascular drugs involved in suicide attempts, and given the greater risk of death associated with misuse of this class of medications, additional education and monitoring is called for.

## Risk and Protective Factors for Overdose and Poisoning

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### Social Norms

- Popularity of cannabis use among NH residents; recent legalization of recreational use in neighboring states.
  - Popularity of e-cigarettes & vaping with youth, and concern of being a gateway to later tobacco and cannabis addiction.
  - Stigma associated with substance misuse
  - Media messages and marketing campaigns targeted to youth
- 



### Economic Stability

- Reduced supply of prescription opioids force many to seek out cheap alternatives, including potent lab-created fentanyl analogues and heroin
  - Lack of insurance to treatment and recovery programs
  - Sense of hopelessness from few employment options and limited job training opportunities
  - Homelessness or limited housing options
- 



### Resilience & Skills

- Lack of job skills and safety training
  - Depression
  - Poor impulse control and consequences, e.g., motor vehicle crashes, domestic violence (partner, child maltreatment), occupational injuries
  - Life skills in problem-solving, coping, conflict resolution, and non-violent ways of handling disputes all protective
  - Feelings of purpose in life
-





Access

- The Doorway / 211
- Well-child / adolescent visits to primary care provider
- Limited treatment and recovery centers and/or longer wait times to see counselors or mental health providers
- Low reimbursement rates for providers
- Medicaid expansion and extended coverage for SUD services
- Limited access to recovery friendly workplaces
- 24/7 access to free poison center services and guidance



Connections

- Neighborhood support and cohesion
- Positive family relationships and other healthy role models
- Job training, internships, business-school partnerships
- Positive models and activities at schools
- Recovery support programs in the workplace

## Goals & Objectives: 2020-2025

### Where does NH want to be in 2025?

Decrease NH's overdose death rate to align with national average.

Reduce percent of youth reporting e-cigarette use in last 30 days by half to align with national average (YRBS data).

Reverse the trend in the number of infants born with NAS toward pre-2014 levels.

### Strategies for Reducing Overdoses and Other Poisonings

Societal & Policy Level

- E-cigarette and tobacco cessation apps, e.g., mylifemyquit.com
- Media campaigns, e.g., bus posters
- Raise the legal age for tobacco sales to 21 to match federal law
- Ban internet sales of devices and e-juices.
- State Opioid Response "The Doorway" program
- Medicaid coverage for treatment & recovery programs
- NH DHHS contracted community health centers screen for drug and alcohol misuse at PCP visits
- Stabilize funding of Northern New England Poison Center

<p>Community &amp; Organizational</p>	<ul style="list-style-type: none"> <li>• NH Project FIRST (First Responders Initiating Recovery, Support &amp; Treatment) with municipal EMS agencies</li> <li>• School based Substance Abuse Prevention (SAP) counselors for school based prevention &amp; education, and peer to peer support.</li> <li>• Recovery Friendly Workplace initiative to reduce stigma and increase employment opportunities for people in recovery</li> <li>• NH DHHS Tobacco Cessation program workgroup - create guidelines and gather resources for Electronic Nicotine Delivery Devices (EENDs) education in schools</li> <li>• NNEPC and Breathe NH provide education on ENDDs to schools, community groups, employers</li> <li>• Doorways of NH: 9 portals across the state for individuals seeking help with substance use disorder</li> <li>• Doorways 211 call center connects users to a portal within a one hour drive; intake assessment; assignment to a Certified Recovery Support Worker</li> <li>• Community prescription medication "Take Back" days</li> </ul>
<p>Interpersonal &amp; Individual</p>	<ul style="list-style-type: none"> <li>• Home Visitors provide safety equipment, poison prevention education</li> <li>• Remember When program; older adult medication safety</li> <li>• Education at schools, workplaces</li> <li>• 1:1 counseling, treatment and recovery programs</li> <li>• Project FIRST provider training in compassion fatigue</li> <li>• Moms in Recovery programs</li> <li>• Promote MyLifeMyQuit phone app for teens to quit vaping</li> </ul>

## Partners

- NH Department of Safety, and Bureau of Emergency Medical Services (EMS)
- NH Bureau of Drug and Alcohol Services (BDAS)
- Municipal Fire, EMS and Law Enforcement agencies
- NH Doorways, including Granite Pathways, Riverbend, LRGH, etc.
- Statewide network of substance misuse prevention specialists and care coordinators in agencies such as Making it Happen, CADY, North Country Health Collaborative, etc.
- Breathe NH
- NH DHHS Tobacco Cessation and Prevention
- Citizens Health Initiative (CHI)
- NH Charitable Foundation
- NH School Nurse Assn
- NH Doorways program
- NH DHHS, Injury Prevention Program
- CHaD Injury Prevention Center
- Hospitals, community health centers, community mental health centers
- Moms in Recovery program
- The Recovery Friendly Workplace Initiative
- Making it Happen

## Funding Sources

- SAMHSA
- NH State Opioid Response Grant
- NH Bureau of Drug & Alcohol Services
- NH Charitable Foundation
- NH Recover Friendly Workplace
- CDC – Overdose to Action (OD2A) grant

## How Will We Know We're Making Progress?

- 1) NH Doorway data: Increase in number of calls to 211; Increase number of unique individuals served by NH Doorway program; Increase number of clinical evaluations and treatment referrals through Doorway program.
- 2) NH Project FIRST data: Increase number of kits distributed; increase number of first responders trained.
- 3) NNEPC NH Major Effect and Opioid reports: monitoring of substances at highest risk of poisoning, overdose, and suicide attempt.
- 4) More NH businesses commit to becoming a recovery friendly workplace.

## Unintentional Childhood Injury: Drowning, Concussion and TBI

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Unintentional injuries contribute to over three-fourths of deaths in NH children ages 5-9 and to more than half of the deaths of youth ages 10-19 (refer back to Figure 2). The most common causes of unintentional childhood injury deaths are shown below. These same causes contribute to non-fatal injuries, such as traumatic brain injuries (TBI) and concussions that send children and teens to hospitals and emergency departments.

### Causes of Unintentional Injury Deaths: Ages 1-9

1. Drowning
2. Motor vehicle crashes
3. Burns
4. Suffocation

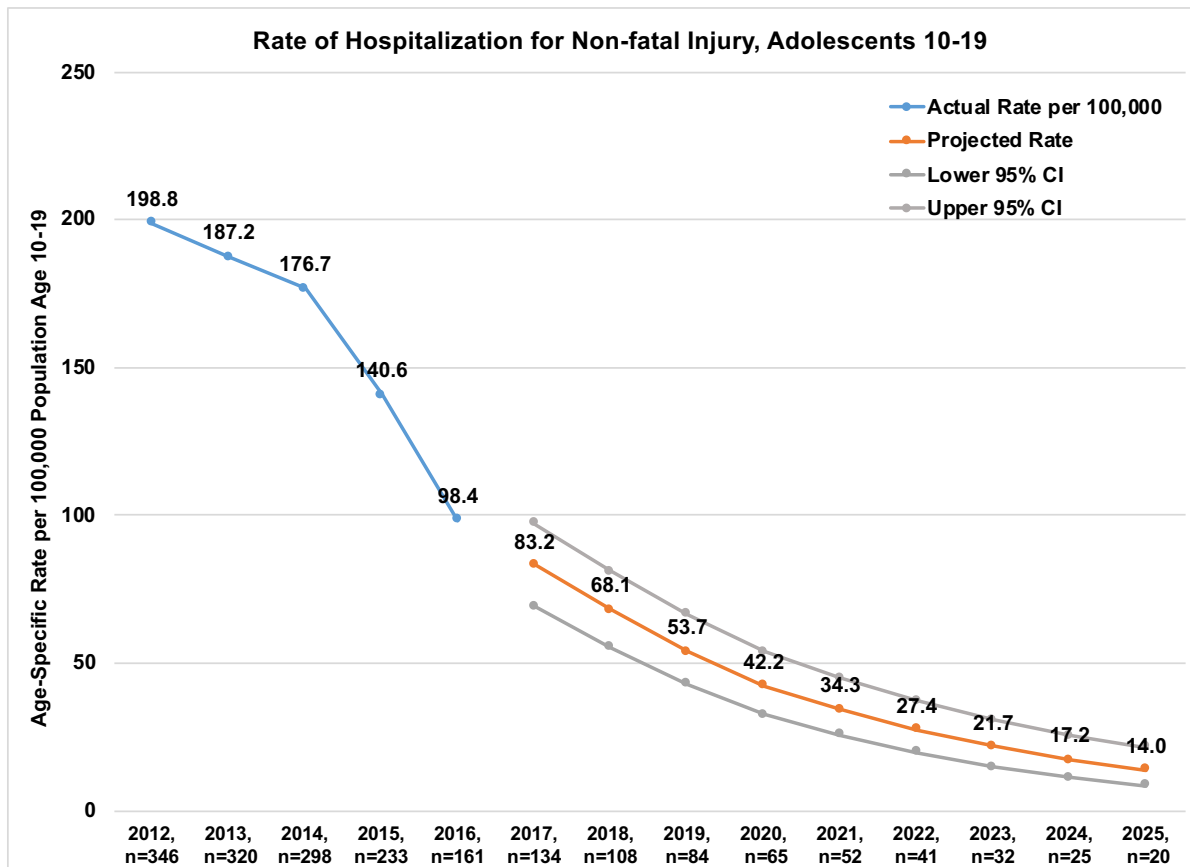
### Causes of Unintentional Injury Deaths: Ages 10-19

1. Traffic incidents & motor vehicle crashes
2. Poisoning
3. Drowning
4. Falls

Since 2008, childhood mortality rates from unintentional injuries in NH have fluctuated up and down between 9 and 15 deaths annually per 100,000 children ages 1-9, and between 18 and 29 deaths annually per 100,000 children ages 10-19. However, the rate of injury-related inpatient hospitalization for those ages 10-19 has been declining in recent years (Figure 15). Projections based on the last five years of data suggest hospitalization rates will continue to drop with sustained injury prevention efforts and as the number of children ages 0-19 decline in NH.

Based on these trends, as well as existing momentum and resources for addressing unintentional childhood injuries in NH, this five year plan will focus on strategies to address two main priorities in the 1-19 year old age group: 1) drowning, and 2) concussions, traumatic brain injury and other injuries caused by on- and off-road vehicle crashes, recreational activities, and sports.

Figure 15. Current and Projected Rate of Inpatient Hospitalization for Non-Fatal Injury, Ages 10-19.



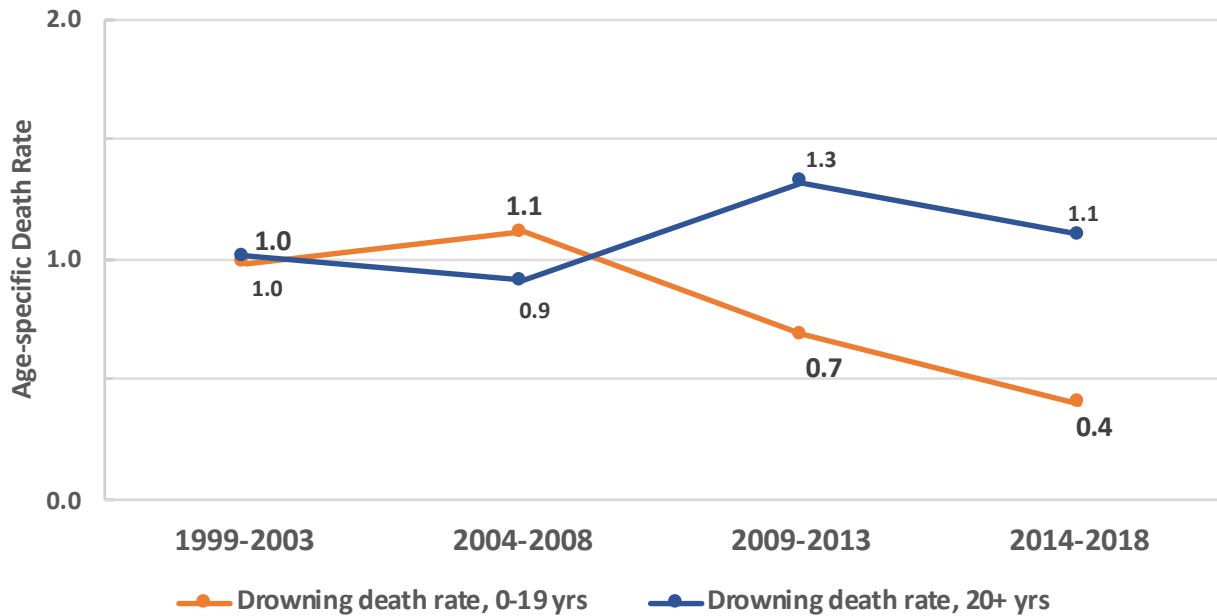
### Drowning

In the U.S., drowning is the second most common cause of unintentional death for children ages 1 to 14 after car crashes.<sup>33</sup> Nationally, 43% of childhood drownings occur in open water (e.g., lakes, rivers, ocean) and 38% in pools and hot tubs. Fewer than 10% of drownings occur in bathtubs. NH mirrors the national data with the highest percentage of drownings occurring in open water or in non-traditional swimming areas, such as swimming holes or rivers. Drowning deaths happen most often in the spring and summer months in NH. More than 50% of drowning victims treated in emergency departments (EDs) require hospitalization or transfer for further care (compared with a

<sup>33</sup>Hidden Hazards: An Exploration of Open Water Drowning and Risks for Children, May 2018, Safe Kids Worldwide accessed June 8, 2018, <https://www.safekids.org/research-report/hidden-hazards-exploration-open-water-drowning-and-risks-kids>

hospitalization rate of about 6% for all unintentional injuries).<sup>34</sup> These nonfatal drowning injuries can cause severe brain damage that may result in long-term disabilities such as memory problems, learning disabilities, and permanent loss of basic functioning (e.g., permanent vegetative state).<sup>35-36</sup>

Figure 16. Age-Specific Death Rate due to Drowning in NH, 1999-2018.



Between 2009 and 2018, there were 18 drowning deaths affecting NH children and teens ages 0-19 years. Seven additional out-of-state youth drowned in NH during that same period for a total of 25. As seen in Figure 16, the rate of drowning deaths among 1-19 year-olds has been declining over the past 10 years, however the small numbers hamper the accuracy of using rates to draw firm conclusions in the trends. The rate of adult drowning deaths, however, has remained relatively stable for the past 20 years.

Five major factors have been associated with child and young adult drownings in NH: 1) inadequate supervision including from technology distractions, 2) cold water

<sup>34</sup> Centers for Disease Control and Prevention, National Center for Injury Prevention and Control. Web-based Injury Statistics Query and Reporting System (WISQARS) [online, accessed Sept. 3, 2019].

<sup>35</sup> Cummings P, Quan L. Trends in Unintentional Drowning: The Role of Alcohol and Medical Care. JAMA, 1999; 281(23):2198-2202.

<sup>36</sup> Spack L, Gedeit R, Splaingard M, Havens PL. Failure of aggressive therapy to alter outcomes in pediatric near-drowning. Pediatric Emergency Care 1997; 13(2):98-102.

immersion with corresponding loss of mental and physical control, 3) unsafe conditions including fluctuating depths, fast moving currents and murky water, 4) risk taking, especially by male teens and young adults, and 5) little to no swimming or self-rescue skills.

Despite the low numbers in NH, all drownings are preventable with education, including swimming and rescue skills, and safety precautions. With NH's lakes, rivers, and beaches a popular destination for summer vacations, drowning remains a priority for state injury prevention efforts in the next five years. Moreover, the costs associated with drownings are staggering. In 2015 alone, drowning-related inpatient and emergency department costs in the U.S. exceeded \$61 million, while drowning fatalities amounted to \$6.65 million. Taking into account these medical costs combined with years of potential life lost and impacts to the workforce, the total estimated cost of child and adolescent drowning in the U.S. in 2015 was nearly \$9 billion.<sup>37</sup>

### Traumatic Brain Injury (TBI) and Concussions

The most common causes of non-fatal TBI and concussions in children ages 10-19 years in NH are from on and off-road motor vehicle accidents, falls and sports injuries. Between 2012 and 2016, off-highway recreational vehicle (OHRV) crashes in NH caused 716 hospitalizations and emergency department (ED) visits among those ages 0-24 years (Figure 17). Speed, inattention and inexperience are the top three leading causes of OHRV crashes according to data from the NH Fish and Game Department. Injuries to the head, torso, and arm, including fractures and dislocations are the most common consequences of OHRV crashes in adolescents.<sup>38</sup> Inconsistent use of helmets by both parents and children increases the risk of greater injury,<sup>39</sup> and without safety-conscious role modeling by parents, potentially sets up the conditions for greater risk-taking behaviors in the future.<sup>40,41</sup>

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<sup>37</sup> <https://www.who.int/news-room/fact-sheets/detail/drowning>

<sup>38</sup> <https://www.nhpr.org/post/when-it-comes-atv-safety-nh-rules-buck-danger-warnings#stream/0>

<sup>39</sup> Brown, Rebecca L., et al. "All-Terrain Vehicle and Bicycle Crashes in Children: Epidemiology and Comparison of Injury Severity." *Journal of Pediatric Surgery*, vol. 37, no. 3, Elsevier, Mar. 2002, pp. 375–80.

<sup>40</sup> Adams, Lauren E., et al. "Barriers and Facilitators to All-Terrain Vehicle Helmet Use." *The Journal of Trauma and Acute Care Surgery*, vol. 75, no. 4, Lippincott Williams & Wilkins, Oct. 2013, pp. S296–S300.

<sup>41</sup> House T, Schwebel DC, Mullins SH, et al. Video intervention changes parent perception of all-terrain vehicle (ATV) safety for children. *Injury Prevention*. 2016;22(5):328.

Injuries and deaths due to OHRV incidents have become a bigger issue in the state in the last decade with the dramatic increase in the number of OHRV options available to youth and families, the marketing of these vehicles for family recreation, and the expansion of trails and byways where these vehicles are now allowed to operate in NH. With many towns seeking an economic boost by opening their roadways to OHRV use, the issue has moved beyond one of recreation and environmental impact to a highway safety issue that will require greater collaboration over the next five years to improve data collection, enforcement, and public safety across multiple agencies.

Figure 17. Number of ATV and Snowmobile-related hospitalizations and ED visits for 0-24yo, 2012-2016.

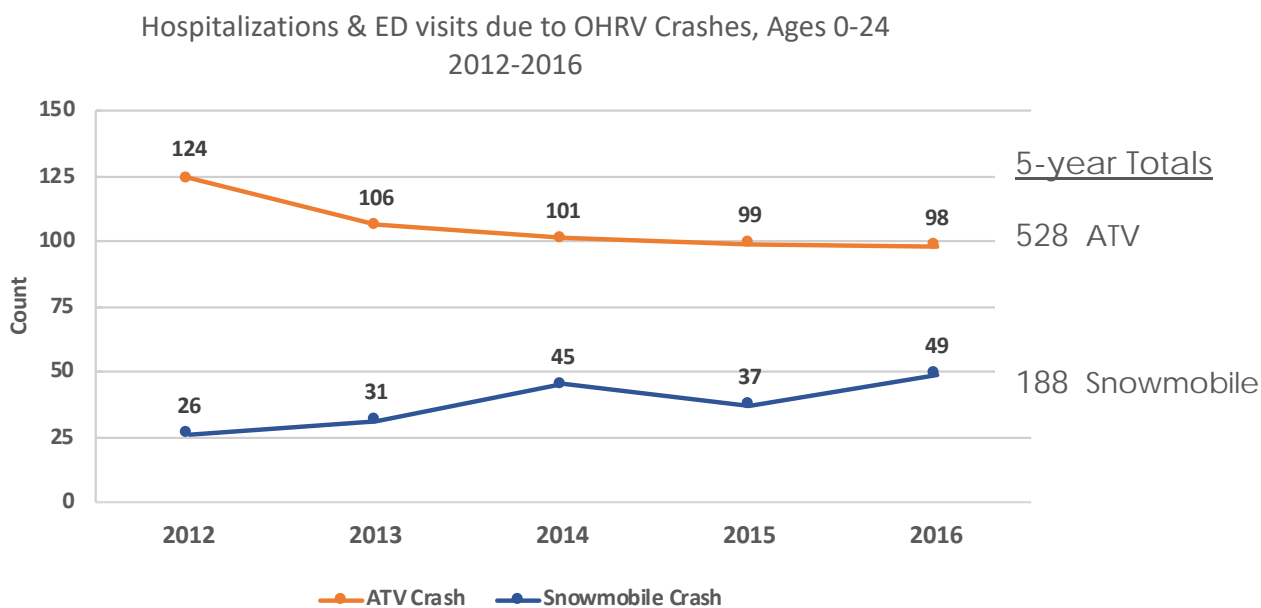


Table 2 (next page) shows the incidence of TBI-related inpatient hospitalizations among NH youth ages 10-19 over the last five years of available data. While the number of TBI-related hospitalizations are staying fairly consistent, per patient costs have risen steeply in recent years. Both TBIs and concussions among youth are preventable with the use of helmets and other protective gear, education in sports safety, proper technique, and vehicle operation, and appropriate adult supervision.

Table 2. Inpatient hospitalizations due to Traumatic Brain Injury in Adolescents age 10-19 and Costs in NH, 2012-2016.



Year	TBI Count	Total Medical Costs	Average Cost Per Patient
2012	33	\$1,559,000	\$47,242
2013	36	\$973,674	\$27,047
2014	39	\$1,799,849	\$46,150
2015	44	\$2,304,602	\$52,377
2016	39	\$3,619,190	\$92,800

In 2016, there were 874 emergency department discharges associated with concussion in NH residents ages 10 to 19, with an average cost per patient of \$3,235. These numbers do not include students who may have had a concussion and sought care by a team doctor or office visit to their primary care provider. Inpatient hospital care for more serious cases of concussion, often including additional injuries or complications, numbered 14 in 2016 at an average cost per patient of \$51,971. The overall count of concussions has been declining in recent years, yet the severity and cost for treatment has increased.

## Risk and Protective Factors: Unintentional Childhood Injuries



### Social Norms

- Return to Play law (RSA 200:49-52)<sup>42</sup>
- Schools adopt written policies to return to sports and learning
- Concussion Chalk Talk programs at schools
- Media messages & pop culture supportive of helmet use & other protective gear when biking, skateboarding, driving ATVs/OHRVs, horseback riding
- Increased support for drowning prevention strategies including safe boating and swim lessons
- Poor understanding of brain injury and how to recognize symptoms
- OHRVs allowed on public ways, sharing with other motorized traffic

<sup>42</sup> <https://www.accesssportsmed.com/news/governor-lynch-signs-nh-concussion-bill-into-law/>



Economic  
Stability

- Tension between economic benefits to communities in allowing OHRV use and passenger safety
  - Expensive and/or inadequate housing in NH
  - Free concussion prevention/treatment training
  - Affordability of protective gear, i.e., lifejackets, helmets etc.
  - Access to free protective equipment, e.g., window stops, baby gates
- 



Resilience &  
Skills

- Youth receive helmet education
  - Parents ensure installation of safety features in home to limit falls, e.g., stair rails, non-skid surfaces, window gates, safety gates by hazards
  - Parenting education on importance of supervision, role modeling
  - Educational attainment
  - Lifesaving training skills, e.g., CPR
  - Ability to swim
  - Children under 16 using OHRVs despite safety recommendations
  - Little or no training on OHRV operation, riding skills
  - Understanding risks of cold water immersion
- 



Access to  
Resources

- Access to off-highway bikeways, designated bike lanes, maintained trails, and swim areas with lifeguards
  - Access to affordable swim lessons
  - Life jacket loaner stations at public swim areas
  - Access to emergency services in off-highway situations, and healthcare generally esp. primary care provider/medical home
  - Impact & neuropsychological testing in schools
  - Lack of OHRV safety classes
  - Many schools don't have athletic trainers and team medical personnel
  - Lack of resources and services in areas with low population density
- 



Connections

- Parents reinforce use of helmets & protective gear
  - Level of family cohesion
  - Parental supervision of appropriate OHRV usage for child's age, ability
  - Schools lack time/resources for safety education and concussion awareness/testing
  - Coordination of resources and services for childhood injuries
  - Community isolation from state services and/or healthcare
-

## Goals & Objectives: 2020-2025

### Where does NH want to be in 2025?

Reduce emergency department visits caused by unintentional injuries by 3% or more (a statistically significant change) In children 0-19 years. [Source: Title V/MCH grant]

Reduce rate of non-fatal injury hospitalizations in adolescents ages 10-19 hospitalizations per 100,000 from 98.4 (2016) to 65.9 (2023). [Source: MCH block grant]

Reduce rate of non-fatal ED visits and hospitalizations due to OHRV/ATV crashes in youth/young adults ages 0-24 from 22.6 per 100,000 in 2018 to 16.7 per 100,000 (95% CI 12.7-21.4 per 100,000) in 2025.

### Strategies for Reducing Childhood Injuries

#### Societal & Policy Level

- Promote understanding of concussion and follow-up treatment
- Recognition of and implementation of 'Return to learn' policies
- Broad spectrum education of childhood development levels and impact on TBI treatment
- Enhanced OHRV legislation to require helmets
- Revise legislation on child passenger safety and use of car seats or other restraint in off-highway rec vehicles
- Explore age-appropriate considerations for use of DOT-approved helmets in children under 7 years esp. in OHRV settings
- Require safe boating classes for all ages and uses, e.g., personal non-motorized watercraft (paddleboards, wakeboards)
- Create social media commentary linking cold water with increased risk of drowning
- Increased enforcement of OHRV trail speed limits & use of OHRVs on public ways
- Convene stakeholders to review drowning deaths in NH and develop evidence-based strategies to reduce deaths and injuries

<p>Community &amp; Organizational</p>	<ul style="list-style-type: none"> <li>Analyze concussion policies within school systems and make recommendations</li> <li>Resources to schools from CDC &amp; Nat'l Federation of State High School Associations, e.g., NFHS Course: Concussion in Sports (FREE)</li> <li>Distribution of bike helmet &amp; reflective equipment / clothing</li> <li>Encourage funding for local initiatives for safer playgrounds</li> <li>Develop cooperative programs to support local safety initiatives</li> <li>Community swim lessons through local parks and recreation</li> <li>CPR training available at hospitals &amp; community programs for parents and caregivers</li> <li>Training coaches and school officials on concussion management, ImPACT™ Neuropsychological Testing, Heads Up, Chalk Talk</li> <li>Community education about OHRV ordinances, optimal zoning for use to minimize on-highway use</li> </ul>
<p>Interpersonal &amp; Individual</p>	<ul style="list-style-type: none"> <li>Parent education in childhood injury prevention, safety practices &amp; CPR</li> <li>SAFE Kids 301 event</li> <li>promoting bike safety for kids</li> <li>OHRV classes for all ages</li> <li>Fencing around swimming pools to separate from other play areas</li> <li><a href="#">Water watcher</a> safety program and promotion of “touch” supervision (i.e., an adult is in the water and able to reach and grab a child)</li> <li>Develop online and face-to-face training for families, medical community and school community on recognizing signs of brain injury and better identification of brain injury</li> <li>TBI and concussion prevention training, eg., <a href="#">A Parent's Guide to Concussion in Sports</a></li> <li>Home visiting program provides parenting support, follow-up on education, and free child safety equipment</li> </ul>



## Partners

- NH Brain Injury Association
- NH Pediatrics Society
- NH Interscholastic Athletic Association
- Injury Prevention Center at CHaD
- NH Fish & Game
- NH Bureau of EMS
- Department of Safety
- SAFE Kids NH
- Local and State Law Enforcement
- Maternal Infant Early Childhood Home Visiting (MIECHV) Program
- NH Schools and SAU Administrators
- National Safety Council of Northern New England

## Funding Sources

- NH DHHS Maternal and Child Health Section
- Centers for Disease Control and Prevention
- NH Motor Speedway (in-kind)
- DHMC & Children's Hospital at Dartmouth

## How Will We Know We're Making Progress?

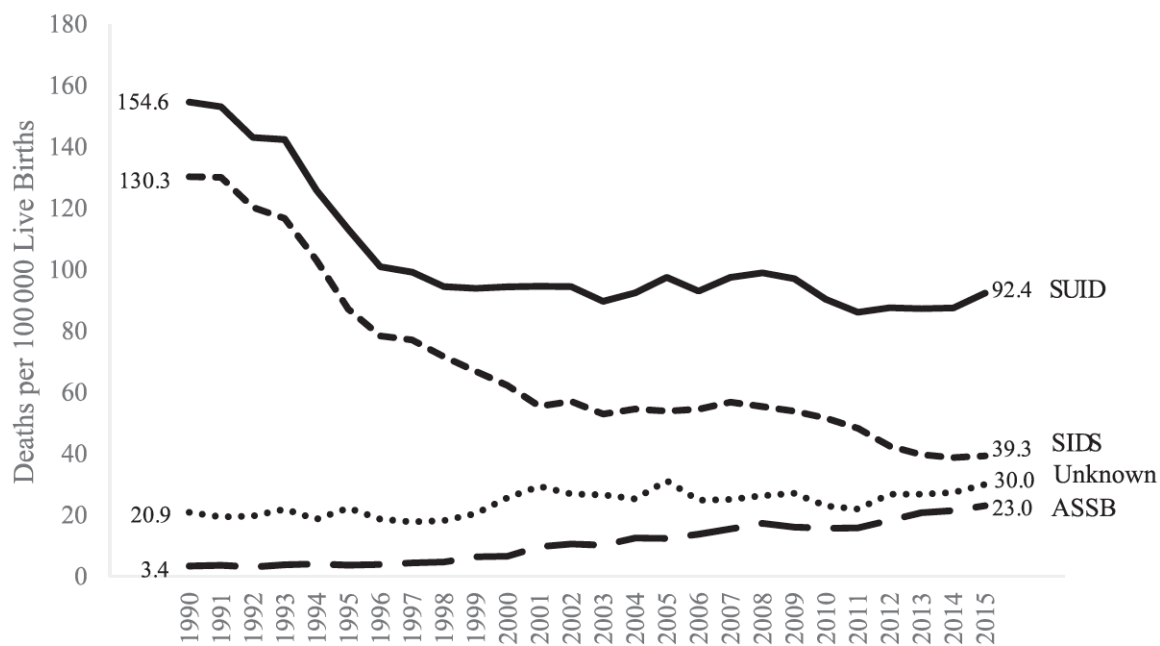
- 1) Increase percent of youth disclosing concussion history (sports; physical activity) on the YRBS to show increased awareness and reduced stigmatization.
- 2) Improved data collection from New Hampshire Fish and Game Trails Bureau, and Bureau of EMS including OHRV crash map, deaths and/or injuries, age of occupants, any helmet or restraint use.
- 3) Increase number of attendees at Safe Kids 30 who receive bike safety checks (45 in 2019) and helmet fittings (65 in 2019).
- 4) Number of families receiving Home visiting education and safety equipment annually.

## Sudden Unexpected Infant Death and Safe Sleep

The National Centers for Disease Control and Prevention (CDC) support Sudden and Unexpected Infant Death (SUID) Monitoring programs in 22 states and jurisdictions that participate in a SUID Case Registry. New Hampshire is fortunate to be one of the states that receives this funding to operationalize a registry and a SUID review committee.

SUID deaths include infants who die in a sleep-setting from: Sudden Infant Death (SIDS), accidental suffocation and strangulation in bed (ASSD), or those classified as “undetermined.” Nationally, sleep-related infant deaths have declined significantly from 1990-2001 (Figure 18), though still account for around 3500 deaths in the US each year. NH’s SUID rate in recent years has been about a third lower than the national average, though due to our small population of 1.3 million residents and approximately 12,000 live births per year, we have been cautioned against using annual mortality rates to assess trends as just a few deaths change our rates dramatically. However, it is concerning that NH’s SUID rates in more recent years (2013-2015) saw a nearly 8% increase over SUID rates from 2000-2002.<sup>43</sup>

Figure 18. National Trends in SUID and SUID subtypes per 100,000 live births, 1990-2015.



SUID: Sudden Unexpected Infant Death; SIDS: Sudden Infant Death; ASSB: Accidental Suffocation & Strangulation

<sup>43</sup> Erck Lambert AB, Parks SE, Shapiro-Mendoza CK. National and State Trends in Sudden Unexpected Infant Death: 1990–2015. *Pediatrics*. 2018;141(3):e20173519.

Examining a longer period of time, the eight years between 2011 and 2018, there were 62 sleep-related deaths involving NH infants. Fifteen of the 62 were SIDS, 42 were “undetermined” and 5 were due to ASSD.<sup>44</sup> Data from NH’s SUID registry reveals trends and characteristics to inform strategies to reduce future deaths. For example, of the deaths in NH’s SUID case registry:

- 84% were marked by a sleep environment with soft or loose bedding
- Over half (58%) involved the infant sharing a sleep surface with an adult, such as a bed, chair or couch
- In only 48% of cases reviewed, infants had been placed on their backs, despite the national “back to sleep” guideline
- 85% of sleep-related infant deaths occurred in a place other than a crib.

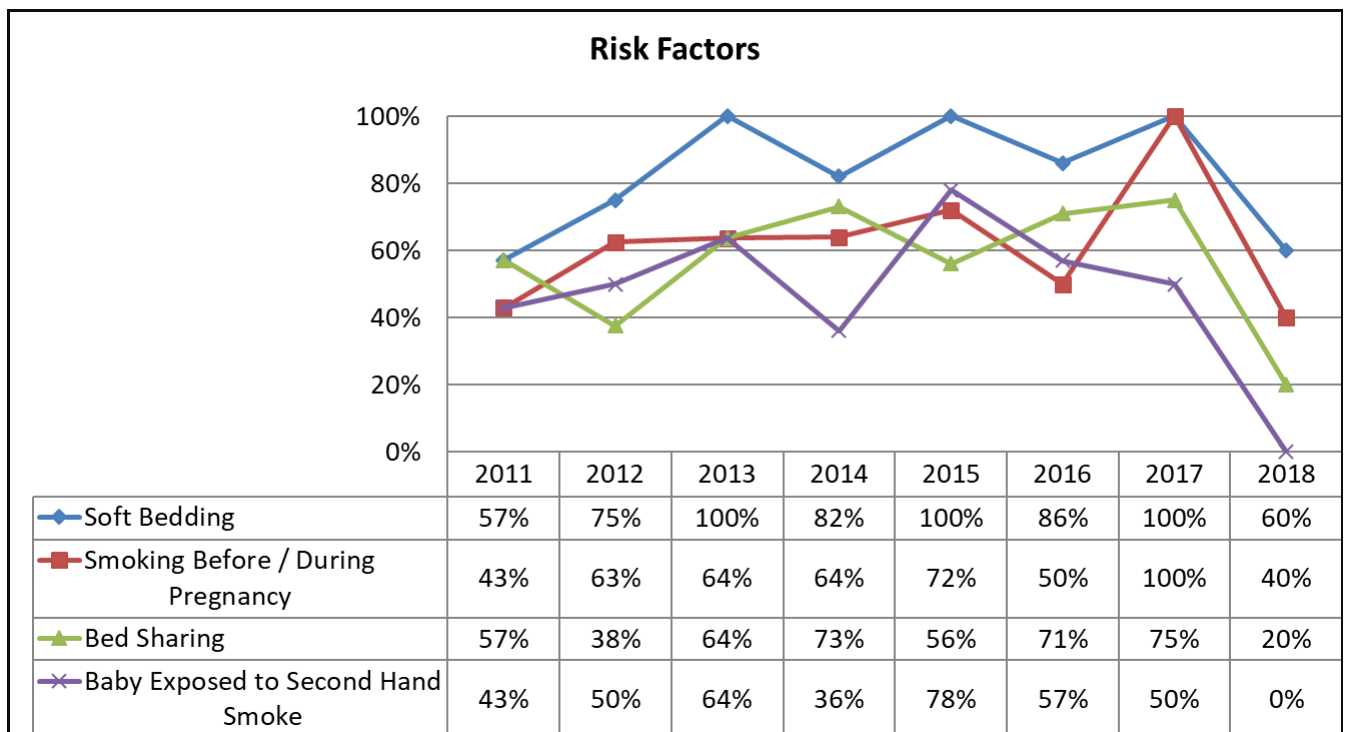
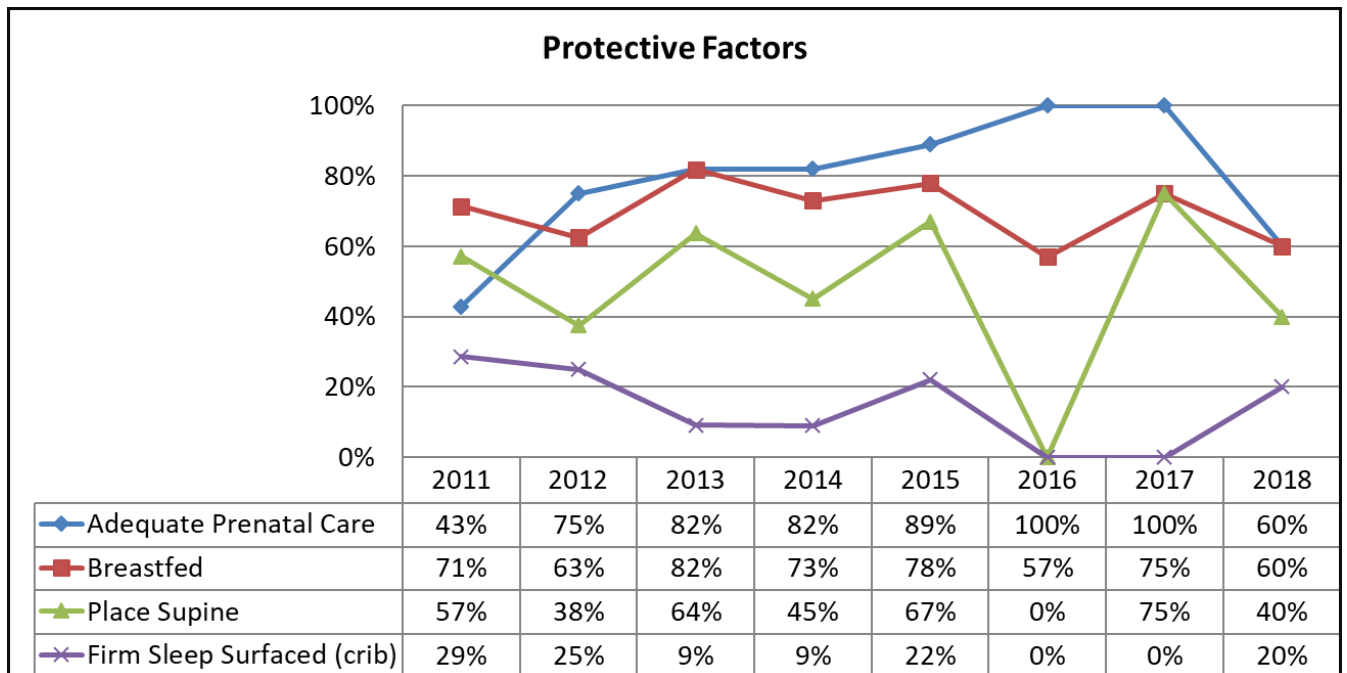
The shift toward measuring risk and protective factors to inform safe sleep strategies is supported by The American Academy of Pediatrics. Figure 19 follows four protective factors for safe sleep and four risk factors over the past eight years. Lower percentages of SUID are associated with protective factors, for example only 20% of SUID cases in 2018 were reported as happening on a firm sleep surface. In contrast, higher percentages of SUID are associated with risk factors, such as soft bedding (60% of cases in 2018) or smoking before or during pregnancy (40% of cases in 2018).

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<sup>44</sup> NH Public Health SUID Issue Brief 2019.

# NH Violence & Injury Prevention Plan 2020-2025

Figure 19. Percent of SUID cases in the U.S. associated with Key Protective and Risk Factors, 2011-2018.





## Risk and Protective Factors for SUID

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### Social Norms

- Cultural differences and norms about positioning of baby for sleeping
  - Norms and preferences related to sleep setting, e.g., crib vs. shared bed; preferences for blankets and plush toys
  - Keeping environment smoke free
- 



### Economic Stability

- Lack of adequate housing
  - Low income; unemployment
  - Homelessness
- 



### Resilience & Skills

- Parenting skills regarding providing safe sleep setting and soothing/coping mechanisms
  - Substance misuse, including alcohol, tobacco or other drugs
  - Maternal education level
- 



### Access

- Access to safe sleep setting equipment
  - Home visiting
  - Medical Home and adequate prenatal care
- 



### Connections

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## Goals & Objectives for Infant Safe Sleep: 2020-2025

Given the limitations of relying solely on mortality rates to track SUID trends, we will use a mix of sources to supplement the SUID registry, including data on live births and monitoring measures via Pregnancy Risk Assessment Monitoring System (PRAMS), the latter of which is collected annually.

Where does NH want to be in 2025?

Increase the percent of infants placed to sleep on their backs to 89% by 2024.

Increase the percent of infants placed to sleep on a separate approved sleep surface to 42% by 2024.

Increase the percent of infants placed to sleep without soft objects or loose bedding to 63% by 2024.

Strategies for Reducing Sudden Unexpected Infant Death

<p>Societal &amp; Policy Level</p>	<ul style="list-style-type: none"> <li>• Media campaigns regarding safe sleep</li> <li>• Plans of Safe Care for Neonatal Abstinence Syndrome infants</li> <li>• Survey birthing facilities regarding policy and offer best practice guidance</li> <li>• Promote American Academy of Pediatrics safe sleep policy</li> <li>• Continue review by SUID Death Review Committee of all NH SUID deaths</li> <li>• Child death review teams successfully transition from Attorney General’s Office to Department of Health and Human Services as noted in Senate Bill 118, effective July 29, 2019.</li> </ul>
<p>Community &amp; Organizational</p>	<ul style="list-style-type: none"> <li>• Implement the NH Sudden and Unexpected Infant Death Case Registry Work Plan as part of the CDC grant awarded to Department of Health and Human Services</li> <li>• Coordinate reviews with NH Office of the Child Advocate and DCYF</li> <li>• Re-convene Safe Sleep Work Group to review data &amp; discuss best practices in birthing hospitals; other prevention strategies</li> <li>• Promote training for birthing unit &amp; OB/GYN health care providers, NH home visitors, child care staff and DCYF case workers</li> <li>• Work with NH childcare provider licensing to for training requirements</li> </ul>
<p>Interpersonal &amp; Individual</p>	<ul style="list-style-type: none"> <li>• Parenting education to include risk and protective factors for SUID/Safe Sleep strategies</li> <li>• Injury 101 training to childcare/child care licensing/pre-school providers and safety equipment distribution</li> </ul>

## Partners

- Medical Examiner's Office/SUID Registry
- NH Division of Economic and Housing Stability
- NH DHHS MCH Program
- NH Division of Children Youth and Families
- Pregnancy Risk Monitoring System (PRAMS)
- SPARK NH
- NH Maternal Infant Early Childhood Home Visiting (MIECHV) program
- NH Childhood Advisory Council
- Safe Kids NH
- Injury Prevention Center at CHaD
- Maternal-Child drug treatment & recovery groups, e.g., Mom's in Recovery
- Child Care Licensing
- DCYF Home Visiting
- Visiting Nurse Associations
- Birthing Hospitals
- Child Birth Educators
- Family Resource Centers
- Nurse Midwives
- Women, Infant & Children (WIC) Program
- Managed Medicaid Care Companies

## Funding Sources

- NH DHHS Maternal and Child Health Section
- Centers for Disease Control
- Injury Prevention Center at CHaD
- DHHS Administration of Children and Families
- USDA (WIC)

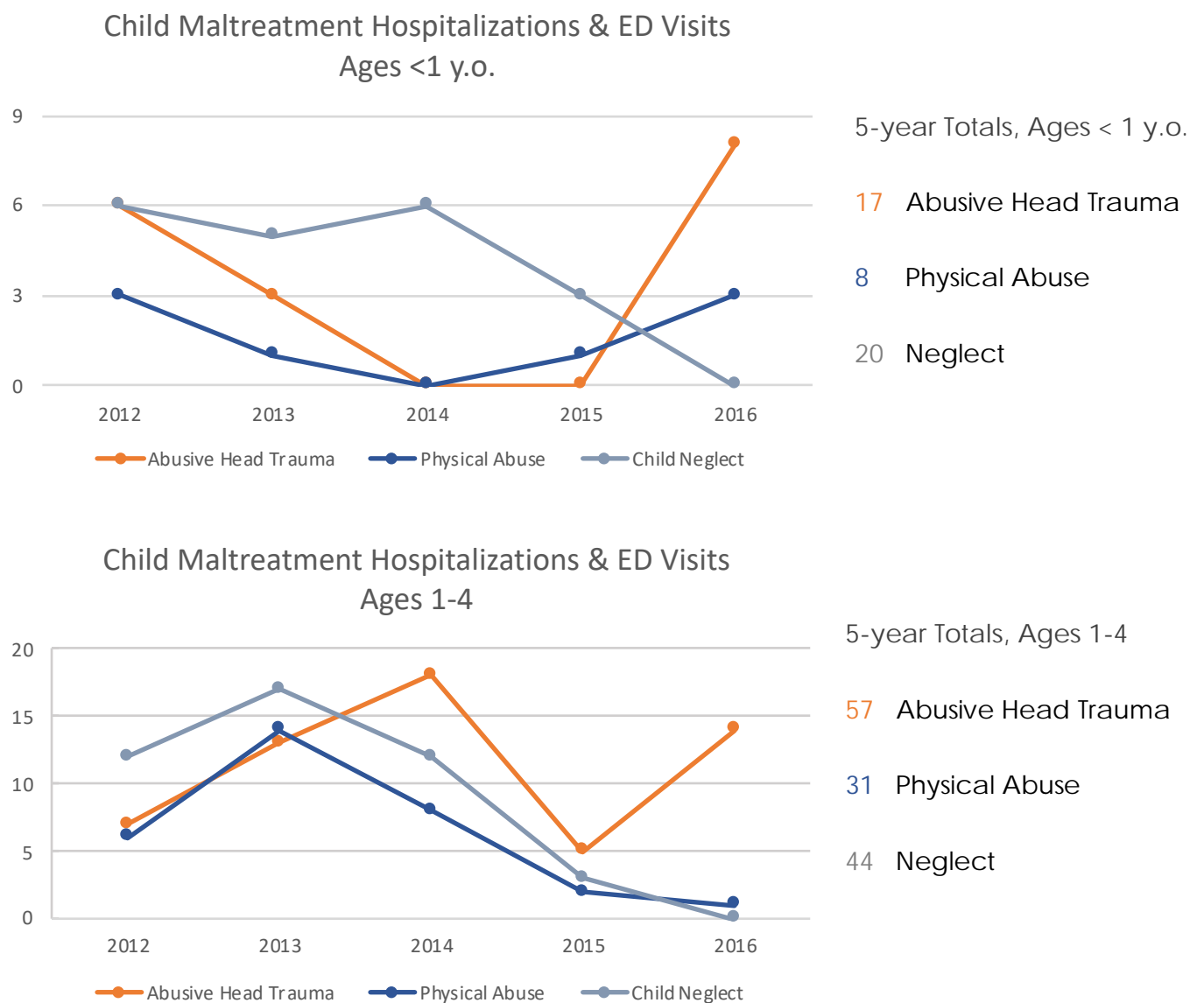
## How Will We Know We're Making Progress?

- 1) NH birthing hospitals will be resurveyed by January 2023 and 100% of NH birth hospitals will have a safe sleep policy in writing.
- 2) SUID Review Committee will meet at least twice/year to review deaths and make recommendations.
- 3) NH's Home Visiting program provides safe sleep materials to >90% of enrolled families and monitors the percent of infants placed on their backs, without bed sharing or soft bedding.

## Child Maltreatment

Violence affecting children, particularly the most vulnerable infants and children under age 5, is an ongoing concern for any violence and injury prevention program. In the last five years of available state data (2012-2016), NH has had 11 children under age 5 die from maltreatment including physical abuse (NH Vital Records). Over that same five-year period, a total of 177 children ages 0-5 were seen in the emergency department (ED) or hospitalized because of abuse, neglect, or head trauma. Figure 20 shows a breakdown of the hospital and ED data by age group and type of maltreatment.

Figure 20. NH Inpatient Hospitalizations & Emergency Dept. Visits due to Child Maltreatment, 2012-2016



However, because of the significant challenges identifying and coding these kinds of injuries and deaths, hospital data is viewed as vastly under-counting the number of child maltreatment cases. For example, electronic medical record data from one year of cases seen at NH’s Level I Trauma Center showed double the number of cases of abusive head trauma (using the CDC’s broad definition) than were noted in the state data. Similarly, data from NH’s Division of Children, Youth and Families (DCYF) from a four year period (2014-2017) reported 264 cases with at least one founded allegation of physical abuse and 2,154 cases of neglect versus 39 and 64 respectively from the hospital data. According to the NH DHHS Associate Commissioner’s Office, only 1 in 5 children suspected of child abuse and neglect in NH are known to DCYF. As seen in Figure 21, the number of calls received by NH DCYF has been rising over the past five years. The number of children served by Family Services (formerly, Child Protective Services) has more than doubled since 2014, in large part due to the state’s substance misuse crisis coupled with repercussions of the 2007-2008 recession, rising housing costs, and overall economic instability of NH families (Figure 22).

Figure 21. Rising number of calls to NH DCYF since 2015 (Source: NH DCYF Program & Case Tracking System).

### Calls to DCYF Central Intake by State Fiscal Year, 2015-2019

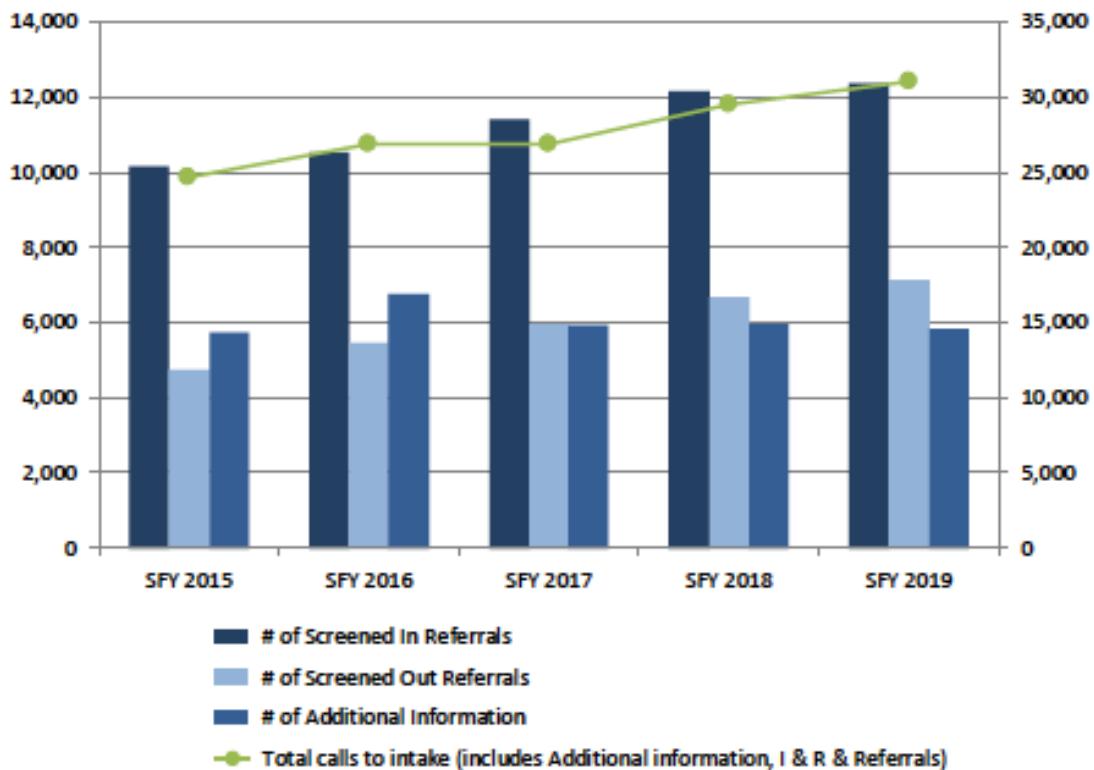
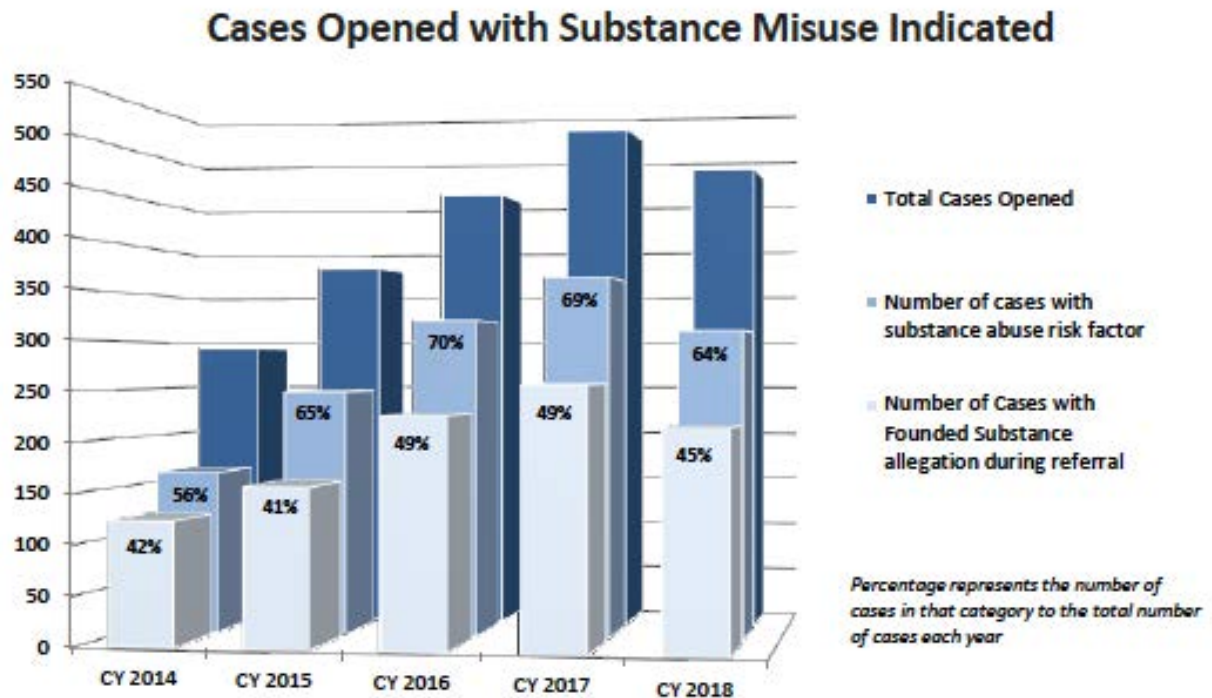


Figure 22. Percent of Family Services Cases with Substance Misuse Indicated (Source: NH DCYF SACWIS-Bridges Data)



These numbers underscore the wide variation in identifying and reporting child maltreatment cases in NH. What we do know is that countless other infants and children who are experiencing abuse and neglect may not be known to either NH’s healthcare system or to NH DCYF, raising more questions about how to better identify and serve them. These unidentified children are at the highest risk of repeated trauma, neglect, and multiple other adverse childhood experiences. A major goal for the next five years will be to explore options for improving the quality and coordination of data about this vulnerable population.

Recent federal legislation, the 2018 Families First Prevention Services Act, has brought about a shift in how states address child maltreatment by placing greater emphasis on primary prevention and earlier identification of child and family needs, risks and protective factors. NH DHHS, and particularly NH DCYF has undertaken a system transformation initiative, developing a new five-year Child and Family Services Plan, and creating a comprehensive strategic plan addressing five domains of organizational development, service array development, safety and risk mitigation, building

partnerships, and engagement and lifelong connections (pending publication)<sup>45</sup>. These efforts coupled with better integrated data and reporting systems, will help overcome NH's historical lack of specialized services including psychosocial evaluation, trauma and resilience assessment, and evidence-based mental/behavioral health interventions to better meet child and family needs within the communities in which they live, work and play.

There is substantial evidence that childhood abuse and neglect have adverse effects on physical, social and emotional development, affecting future academic and employment success, health outcomes and behaviors.<sup>46-47</sup> A 2018 report examined seven health indicators in NH adults and associations with adverse childhood experiences (ACEs) using 2016 Behavioral Risk Factor Surveillance (BRFS) data. The report showed that NH adults “who experience a range of negative health outcomes and/or engage in unhealthy behaviors often reported more ACEs than those who did not.”<sup>48</sup> (p. 2) Moreover, early adverse experiences perpetuate a cycle of inter-generational violence that has lasting effects across families and communities.

Up until the prior NH State Injury Prevention Plan (2014-2018), child maltreatment was not mentioned as a target for injury prevention efforts in New Hampshire. The impetus to include this topic came from reviewing 2009 trauma registry data at Dartmouth Hitchcock Medical Center (DHMC), the state's only Level One trauma center. It was determined that “non-accidental trauma” was a second leading cause of injury admission in the 0-4 year old age group. With the support of DHMC's trauma program, notably staff from the birthing unit, social work, child advocacy, and injury prevention, an evidence-supported primary prevention model was identified and implemented called the Period of PURPLE Crying® to specifically address abusive head trauma. This intervention focuses on infants and babies under 12 months, as nationally, this is the age group at highest risk for death from abusive head trauma<sup>49</sup>.

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<sup>45</sup> <https://www.dhhs.nh.gov/dcyf/publications.htm>

<sup>46</sup> Felitti, Vincent J et al. Relationship of Childhood Abuse and Household Dysfunction to Many of the Leading Causes of Death in Adults. *American Journal of Preventive Medicine*, 1998; 14(4), 245 – 258.

<sup>47</sup> Anda RF, Felitti VJ, Fleisher VI, Edwards VJ, Whitfield CL, Dube SR, Williamson DF. Childhood abuse, household dysfunction, and indicators of impaired worker performance. *Perm J*. 2004; 8(1):30–38.

<sup>48</sup> Health Indicators in Adults and Adverse Childhood Experiences (ACEs); Maternal and Child Health Section, Division of Public Health Services, New Hampshire Department of Health and Human Services; September 2018.

<sup>49</sup> Niederkrotenthaler, T. et al. Descriptive factors of abusive head trauma in young children-United States, 2000-2009. *Child Abuse & Neglect*. 2013; 37(7), July 446-455.

Costs associated with abusive head trauma in those under age 5, or the broader topic of “non-accidental trauma,” have been difficult to assess in New Hampshire. A 2009 analysis of five cases originally identified through the trauma program at DHMC were collectively found to have incurred over a half million dollars in hospital charges. These costs did not factor in subsequent healthcare hospitalizations or ongoing care for this form of preventable child abuse. In a recent study examining the lifetime costs associated with abusive head trauma in children, Miller and colleagues report an average cost of \$5.7 million for each death, and an average of \$2.6 million for surviving victims including medical care, special education, child protective services/criminal justice, lost work, and lost quality of life.<sup>50</sup> A 2019 cost analysis in British Columbia found similar costs per abusive head trauma death (adjusted for US / Canadian exchange rate). Moreover, those researchers reported that an investment of \$5 per newborn through the PURPLE program could return a \$273.52 cost savings to society and \$14.49 per child cost savings associated with later healthcare.<sup>51</sup>

## Risk and Protective Factors for Child Maltreatment

In 2014, a CDC task force conducted a comprehensive review of the literature surrounding risk and protective factors associated with violence toward children.<sup>52</sup> The *Connecting the Dots* brief shows the link between child maltreatment and a range of social and economic hardships, family and community factors, and personal resilience and skills.



Social Norms

- Norms around asking for help
  - Lack of positive social norms in parents' peer group
  - Community policing and safe neighborhoods programs
  - Social stigma associated with poverty, joblessness, substance misuse and mental/behavioral health issues
  - Technology and social media pressures
- 

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<sup>50</sup> Miller, Ted R., et al. Lifetime cost of abusive head trauma at ages 0–4, USA. *Prevention Science* 2018; 6:695-704.

<sup>51</sup> Beaulieu, E., Rajabali, F., Zheng, A. and Pike, I. The lifetime costs of pediatric abusive head trauma and a cost-effectiveness analysis of the Period of Purple crying program in British Columbia, Canada. *Child Abuse & Neglect*, 2019; 97: 104133.

<sup>52</sup> Wilkins, N., Tsao, B., Hertz, M., Davis, R., Klevens, J. *Connecting the Dots: An Overview of the Links Among Multiple Forms of Violence*. (2014). Atlanta, GA: National Center for Injury Prevention and Control, Centers for Disease Control and Prevention Oakland, CA: Prevention Institute.





Economic Stability

- Low state minimum wage and overall economic inequity
  - Parents holding multiple jobs to make ends meet
  - Lack of affordable housing; homelessness
  - Food insecurity
  - Family-friendly work policies
  - Lack of transportation; limited public transportation options
- 



Resilience & Skills

- Parenting skills; how to attach and nurture child, child development
  - Intergenerational trauma, abuse and neglect
  - Coping skills
  - Behavioral and mental health
  - Social & emotional competence of children
- 



Access

- Lack of knowledge of family resources
  - Access issues in getting concrete services in times of need
  - NH's child & family serving systems (DCYF) in process of transformation to better meet "upstream" needs of families
  - Home visiting programs and family resource centers
  - Well-child visits and access to maternal and child health care
- 



Connections

- Social isolation; families / multiple generations living separately
  - Poor ties to community
  - Breastfeeding is protective
  - Parents read to child daily
- 

## Goals & Objectives: 2020-2025

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### Where does NH want to be in 2025?

Reduce the number of deaths, hospitalizations and emergency department visits of infants and children under age 5 due to abusive head trauma, physical abuse, and neglect by 10% in the four-year period 2020-2024 (compared to 2015-2019 counts).

Strategies for Reducing Injuries due to Child Maltreatment	
Societal & Policy Level	<ul style="list-style-type: none"> <li>• Preserve Medicaid expansion to support perinatal care for parents and infants</li> <li>• Advocacy for paid family leave policies</li> <li>• NH Child Welfare Systems Transformation initiative and related policy work to strengthen DCYF organizational capacity and NH's child/family service array</li> <li>• Ongoing monitoring of ACEs through NH BRFSS</li> <li>• Trauma informed assessment and intervention practices in all systems of care (schools, health, social services, law enforcement, legal system, etc.)</li> </ul>
Community & Organizational	<ul style="list-style-type: none"> <li>• Maintain and expand Period of PURPLE Crying implementation in NH birthing centers</li> <li>• CLICK for Babies public awareness campaign (part of Period of PURPLE Crying practices)</li> <li>• Promote access to quality childcare &amp; early childhood education for all</li> <li>• Increase families' access to NH's home visiting programs</li> <li>• Engage more Family Resource Centers as "Family Resource Centers of Quality" through guidelines and oversight</li> <li>• NH DCYF workforce development initiatives, expanded partnerships &amp; community-based services for identifying and supporting children and families in need</li> <li>• Educating employers in family-friendly policies</li> <li>• Cross-train family support and strengthening professionals in recovery coaching and vice versa</li> <li>• Strategies informed by the UNH School of Nursing review of PURPLE fidelity</li> </ul>
Interpersonal & Individual	<ul style="list-style-type: none"> <li>• Child Fatality Review Committee - case reviews and follow-up</li> <li>• Parent support groups; New parent education</li> <li>• Injury 101 Workshops to preschool providers/teachers</li> <li>• Teach parenting skills to create stable nurturing relationships and environments for children</li> <li>• <i>Period of PURPLE Crying</i>® program implemented with new parents</li> <li>• Increase awareness and access to NH's home visiting programs</li> </ul>

	<ul style="list-style-type: none"><li>• <i>Essentials for Childhood and Strengthening Families Protective Factors</i> frameworks evidence based practices utilized by home visitors</li></ul>
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## Partners

- NH Children’s Trust
- NH Division of Children Youth and Families
- Spark NH
- NH DHHS Maternal Child Health and Maternal Infant Child Home Visiting (MIECHV) Program
- Family Support NH
- NH Childhood Advisory Council
- SAFE Kids NH
- NH Division of Economic and Housing Stability
- NH Wellness and Primary Prevention Council
- Abusive Head Trauma Coalition
- Community Collaborations Grantees
- NH Coalition Against Domestic & Sexual Violence (NH CADSV)
- Office of Child Advocate
- Family Resource Centers
- NH Birthing hospitals
- Injury Prevention Center at CHaD
- Maternal-Child Drug Treatment & Recovery programs, e.g., Moms in Recovery
- Pregnancy Risk Assessment Monitoring System (PRAMS)
- Child Fatality Review Committee
- Healthy Families America
- University of New Hampshire School of Nursing

## Funding Sources

- Centers for Disease Control (CDC)
- Federal Health Research Services Administration (HRSA)
- DHHS MCH program
- Community Based Child Abuse Prevention Grant
- NH Children’s Trust
- NH DHHS
- Preschool Development Grant
- Community Collaborations Grant
- Private Funders, e.g., Tillotson Foundation, NH Charitable Foundation

## How Will We Know We’re Making Progress?

- 1) Number of families involved with NH’s Home Visiting (MIECHV) program per year (as measured by number of active families as of Dec. 31<sup>st</sup> each year).
- 2) Total number of families who have been served by NH’s Family Resource Centers per year.

- 3) Number of parents receiving Period of PURPLE Crying® intervention per year.
- 4) Monitor data collected by NH DCYF, e.g., number of children and families served, time to permanency, and percent of high risk families receiving services and progress toward NH DCYF strategic goals.

## Intimate Partner and Sexual Violence

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The national Uniform Crime Reporting Program (UCR) shows an increasing trend in reports of sexual violence to law enforcement. Between 2010 and 2014, approximately 20% of all violent crimes (average 2,693 per year) reported in NH were cases of sexual violence (average 492 per year).<sup>53</sup> In the advent of the national “Me Too” movement, we can anticipate even greater reporting of sexual violence. However, social stigma and stereotypes still persist, and in the 2011 Governor’s Commission on Domestic and Sexual Violence report, “The Reality of Sexual Assault in New Hampshire,” focus group and interview analysis revealed that misinformation, myths and stereotypes about what is “real rape” or who is a real or deserving victim play a major role in the outcome of an adult sexual violence case.

Efforts to address intimate partner and sexual violence are challenged by these stereotypes, limited resources, and difficulty in gathering accurate and timely data on incidence, risks and protective factors. One data source, the Youth Risk Behavior Survey (YRBS), collects data every two years from NH high school students and includes two questions related to sexual violence.

As seen in Figure 23, NH YRBS data from 2017 show that 8.8% of female respondents and 2.8% of males answered YES to “having been physically forced to have sex when they did not want to.” These rates have remained stable since 2003. In 2017 a new question was added to the YRBS Survey, “Have you experienced sexual violence by anyone (being forced to do sexual things {counting such things as kissing, touching, or being physically forced to have sexual intercourse} they did not want to do by anyone, one or more times during the 12 months before the survey)?” As seen in Figure 24, female students responded YES to that new question at 11.4%, and male students only at 3.0%.<sup>54</sup>

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<sup>53</sup> U.S. Department of Justice, Federal Bureau of Investigation, “Uniform Crime Reporting Statistics.” <https://www.ucrdatatool.gov/Search/Crime/State/RunCrimeStatebyState.cfm>, reviewed on October 15, 2018.

<sup>54</sup> CDC, Youth Online, Youth Risk Behavior Surveillance System Data, <https://nccd.cdc.gov/Youthonline/App/Default.aspx>, reviewed on October 15, 2018.

# NH Violence & Injury Prevention Plan 2020-2025

Figure 23. Percent of NH High School Students Ever Forced to Have Sexual Intercourse



Figure 24. Percent of NH High School Students Experienced Sexual Dating Violence

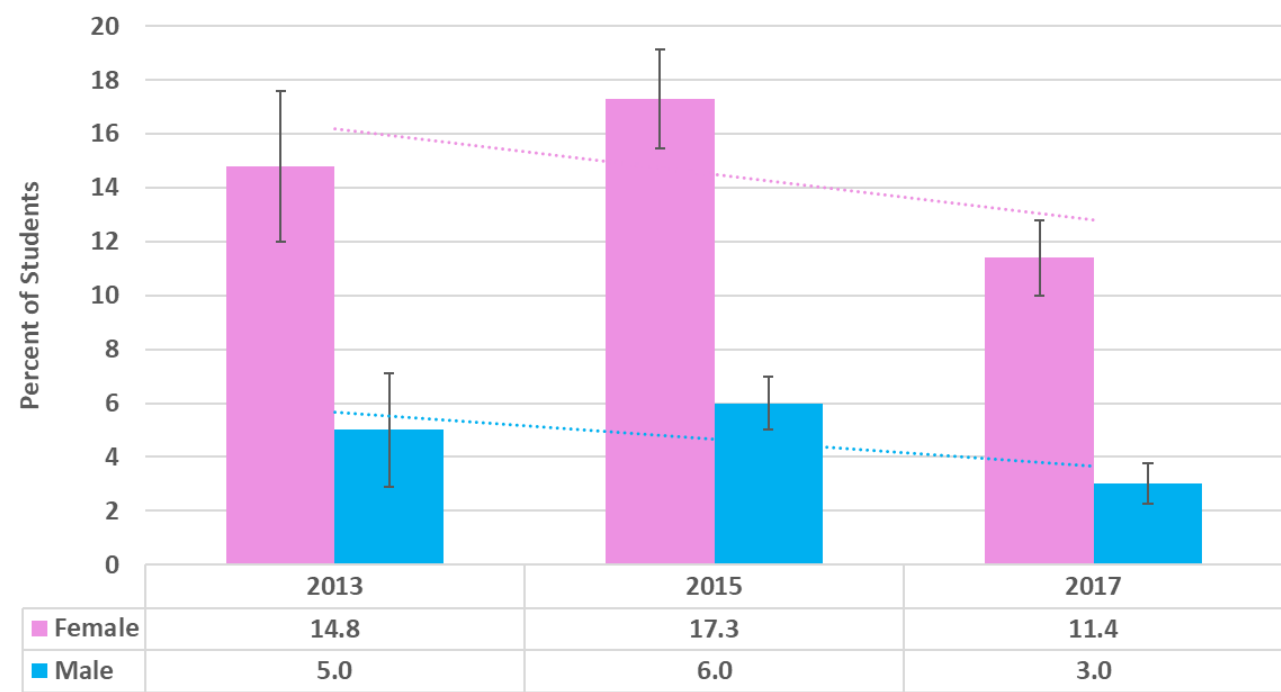
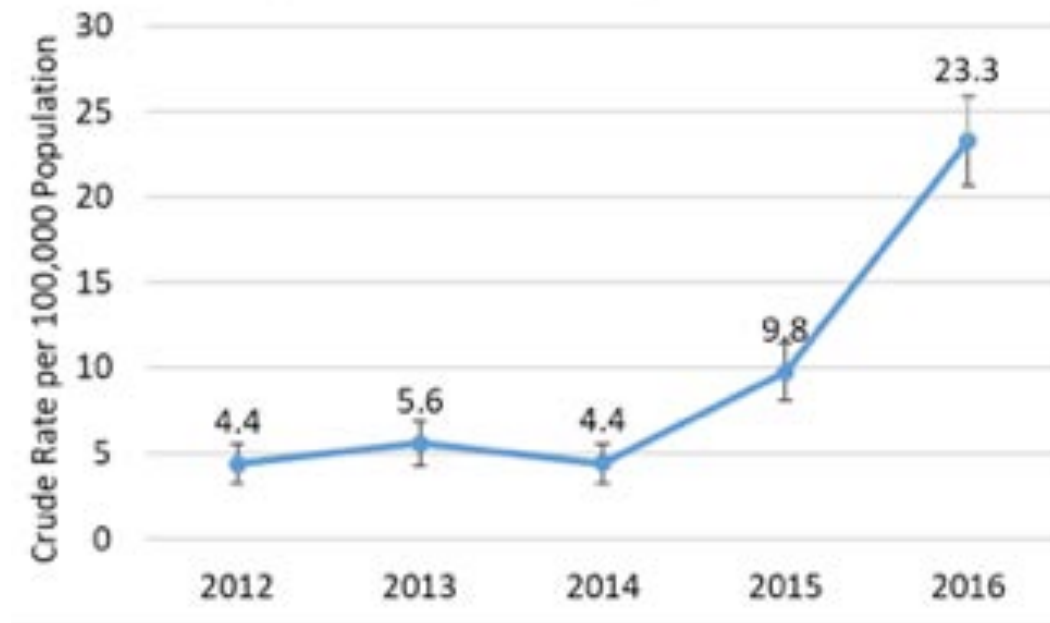


Figure 25. Rate of ED Visits due to Sexual Assault in NH Residents, 2012-2016.



As seen in Figure 25 and in Table 3, the last five years of available data reveal steeply rising counts of visits to NH emergency departments due to sexual assault. Costs per individual have dropped over that same time, suggesting along with the greater counts, that more individuals are seeking medical treatment even for less severe injuries. While this is hopeful in terms of individuals receiving the care needed including gathering evidence to support later legal action, the data likely underrepresents the actual burden of domestic and intimate partner violence in NH.

Table 3. Counts and Costs of Sexual Assault ED Visits in NH, 2012-2016.

Year	Count	Total Cost	Cost per Case
2012	58	\$198,015	\$3,414.05
2013	74	\$208,529	\$2,817.96
2014	59	\$236,554	\$4,009.39
2015	130	\$392,637	\$3,020.28
2016	311	\$494,643	\$1,590.49

## NH Violence & Injury Prevention Plan 2020-2025

The rate of emergency department (ED) visits for rape significantly increased from 9.8 per 100,000 population in 2015 to 23.3 in 2016. This may be due to increased reporting or may be a data anomaly as hospital billing codes changed from the ICD9 version to ICD10 mid-year in 2015 but it also coincides with when the state's opioid crisis began to heat up. Year 2016 should be used as a new baseline for trend analysis going forward. Between 2012 and 2016 the average total cost of medical care associated with rape was \$306,076 per year, or \$2,970 per each ED discharge (see table and graph above).<sup>55</sup>

NH's Rape Prevention and Education Program (RPE) receives funding from the Injury Prevention Program, Maternal Child Health Section under a grant from the Centers for Disease Control and Prevention (CDC). The majority of the funding and the grant's activities are contracted through a competitive bid process to the New Hampshire Coalition Against Domestic and Sexual Violence (the Coalition). Subcontracts are then issued to all of the 13 Coalition Member Programs that facilitate primary sexual violence prevention programming and crisis services. While this funding source focuses on sexual violence there is often a dual functionality in the utilized prevention strategies which addresses both sexual violence and intimate partner violence. Additionally there are other private and public funding sources which are utilized at the local level.

To augment efforts there has also been a large push towards implementing social and emotional learning curricula in NH schools. While not directly geared towards intimate partner and sexual violence prevention, it does address related risk and protective factors.

There is a *Sexual Violence Prevention Plan* and a separate evaluation plan from which this information was gleaned. This plan is currently under review and when finalized will be hosted on the NH Department of Health and Human Services web site at <https://www.dhhs.nh.gov/dphs/bchs/mch/injury.htm>. The Sexual Violence Prevention Advisory Committee will monitor implementation and metrics of this plan.

## Risk and Protective Factors for Sexual Violence

Risk and protective factors associated with intimate partner and sexual violence mirror many of those contributing to other forms of violence, including to children. Financial pressures, joblessness (or instability), and low community supports can put undue stress on families. Perceived social norms and media messages around treatment of women,

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<sup>55</sup> Health Statistics and Data Management Section, Division of Public Health, NH Department of Health and Human Services, Uniform Hospital Discharge Data Set (UHDDS), years 2012-2016.

sex, and physical attraction coupled with low self-esteem, lower education and unequal power dynamics in relationships can also predispose women to violence in the home.<sup>56,57</sup>

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Social Norms

- Norms around asking for help
  - Lack of positive social norms in peer group
  - Community policing and safe neighborhoods programs
  - Social stigma associated with poverty, joblessness, substance misuse and mental/behavioral health issues
  - Media messages around sex and female-male relationships generally
- 



Economic Stability

- Low state minimum wage and overall economic inequity
  - Working multiple jobs to make ends meet
  - Lack of affordable housing; homelessness
  - Food insecurity
  - Family-friendly work policies
  - Unreliable transportation; limited public transportation options
- 



Resilience & Skills

- Low self-esteem
  - Perceived unequal power dynamic
  - Intergenerational trauma, abuse and neglect
  - Coping skills
  - Behavioral and mental health
- 



Access

- Lack of knowledge of domestic violence supports/ resources
  - Access issues in getting concrete services in times of need
  - Access to home visiting programs and family resource centers
  - Access to health care
- 



Connections

- Social isolation
  - Poor ties to community
  - Positive female and male role models
- 

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<sup>56</sup> Wilkins, N., Tsao, B., Hertz, M., Davis, R., Klevens, J. (2014). Connecting the Dots: An Overview of the Links Among Multiple Forms of Violence. Atlanta, GA: National Center for Injury Prevention and Control, Centers for Disease Control and Prevention Oakland, CA: Prevention Institute.

<sup>57</sup> Stop SV: A Technical Package to Prevent Sexual Violence, CDC, Division of Violence Prevention (2016).



## Goals & Objectives: 2020-2025

### Where does NH want to be in 2025?

Reduce the number of hospitalizations and emergency department visits due to intimate partner and sexual violence by 10%.

Decrease the percentage of youth who experience forced sexual intercourse by 10% (YRBS).

Reduce the percent of NH high school students reporting dating violence to less than 10% (YRBS).

### Strategies for Reducing Injuries due to Domestic & Intimate Partner Violence

Societal & Policy Level	<ul style="list-style-type: none"> <li>• Advocacy for Inclusive anti-discrimination policies</li> <li>• Public awareness campaigns</li> <li>• School and workplace policies for reporting sexual harassment and / or sexual violence</li> <li>• Create and distribute media / messaging regarding intolerance for harassing behaviors, community and school "Safe Zones"</li> </ul>
Community & Organizational	<ul style="list-style-type: none"> <li>• Improved safety and monitoring in schools, e.g., safety officers, Safe Zones</li> <li>• Granite State Respect Week within high schools across the state, including bystander training and other awareness activities</li> <li>• Promote strategies for schools to educate students, parents, teachers and staff on school sexual harassment and sexual violence protocols</li> <li>• Identify large employers and inventory harassment policies and procedures, providing assistance if modifications needed</li> <li>• Facilitate "townhalls" &amp; trainings on new workplace guidelines</li> <li>• Identify alcohol dense zones and offer trainings to local bar staff</li> <li>• Inventory community parks and recreation areas for high risk areas</li> <li>• Promote installation of safety call boxes in high risk areas</li> <li>• Promote increased monitoring of high-risk areas by law enforcement</li> <li>• Open gym times for community members during high risk times (e.g. after school, evening, weekends)</li> </ul>

<p>Interpersonal &amp; Individual</p>	<ul style="list-style-type: none"> <li>• Preventative parenting workshops</li> <li>• Trainings for school administrator, teachers, and staff, including how to respond to students who disclose</li> <li>• Trainings in prevention and 'postvention' to students, e.g. how to address harassing behavior, how to respond to peers that disclose, recognition of common warning signs</li> </ul>
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## Partners

- NH Coalition Against Domestic & Sexual Violence (NH CADSV)
- NHDHHS
- NH DHHS Maternal Child Health and Maternal Infant Child Home Visiting (MIECHV) Program
- Family Support NH
- Division of Economic and Housing Stability
- NH Wellness and Primary Prevention Council
- Family Resource Centers
- NH Division of Children Youth and Families
- Spark NH
- NH Birthing hospitals
- Maternal-Child Drug Treatment & Recovery programs, e.g., Moms in Recovery

## Funding Sources

- CDC
- NH DHHS MCH program

## How Will We Know We're Making Progress?

- 1) Demonstrate tracking and impact to state-level Sexual Violence indicators (Will be presented on the DHHS Wisdom Dash Board).
- 2) Increase percentage of community/ societal level approaches implemented by sub-recipients of Rape Prevention and Education funds. (As reported to Education and Outreach Data Base).
- 3) Increase data driven decision making for program selection and implementation (member programs are required to demonstrate their process).

## Suicide

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Based on 2018 suicide data, NH has the 20<sup>th</sup> highest rate of suicide deaths in the U.S.<sup>58</sup> As seen in Figure 26, NH's death rate due to suicide in the past decade has been consistently higher than the national rate, most notably since 2014 when NH suicides rose significantly. The most common method used in NH suicides are firearms, followed by poisoning, cutting, and strangulation (hanging). Depression is a major contributing factor to suicide death. In 2015 and 2016, 83% and 71% respectively, of suicide death victims in NH had suffered from depression or reported having depressed moods.<sup>59</sup>

From 2008-2017, at least 2100 lives were lost to suicide in NH. Because the manner of death cannot always be determined and victims are no longer alive to confirm, the actual number of suicides is likely higher than what is reported. Deaths that were not initially accepted under the jurisdiction of the Office of the Chief Medical Examiner, or deaths that have been finalized as a manner of death other than suicide (e.g., undetermined or accident) are examples of this possible discrepancy.

Of these 2100 suicide cases in the last decade in NH, 47% involved firearms.<sup>60</sup> In 2017 alone, in the 144 NH deaths involving firearms, 90% were related to suicide.<sup>61</sup> These findings clearly position the use of firearms in NH as key factor for suicide much more so than a homicide. Moreover, NH's data shows that suicides, particularly those with firearms, are more highly associated with co-occurring alcohol abuse or overuse. In 2016, one-third of suicides had a positive toxicology screen for alcohol.<sup>62</sup>

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<sup>58</sup> Centers for Disease Control, National Center for Health Statistics

<sup>59</sup> NH Suicide Annual Report 2017, page 58, [https://theconnectprogram.org/wp-content/uploads/2018/11/2017\\_annual\\_suicide\\_report\\_-\\_10-30-2018.pdf](https://theconnectprogram.org/wp-content/uploads/2018/11/2017_annual_suicide_report_-_10-30-2018.pdf)

<sup>60</sup> NH Suicide Annual Report 2017, page 28.

<sup>61</sup> CDC Wonder, accessed Sept. 20, 2019

<https://wonder.cdc.gov/controller/datarequest/D76;jsessionid=34B3AD3986CB9C6B1912EFCCF84A5428>)

<sup>62</sup> National Violent Death Reporting System, 2016

# NH Violence & Injury Prevention Plan 2020-2025

Figure 26. NH and US Suicide Rate per 100,000, 2008-2017 (Source CDC, except 2017 – NH OCME)

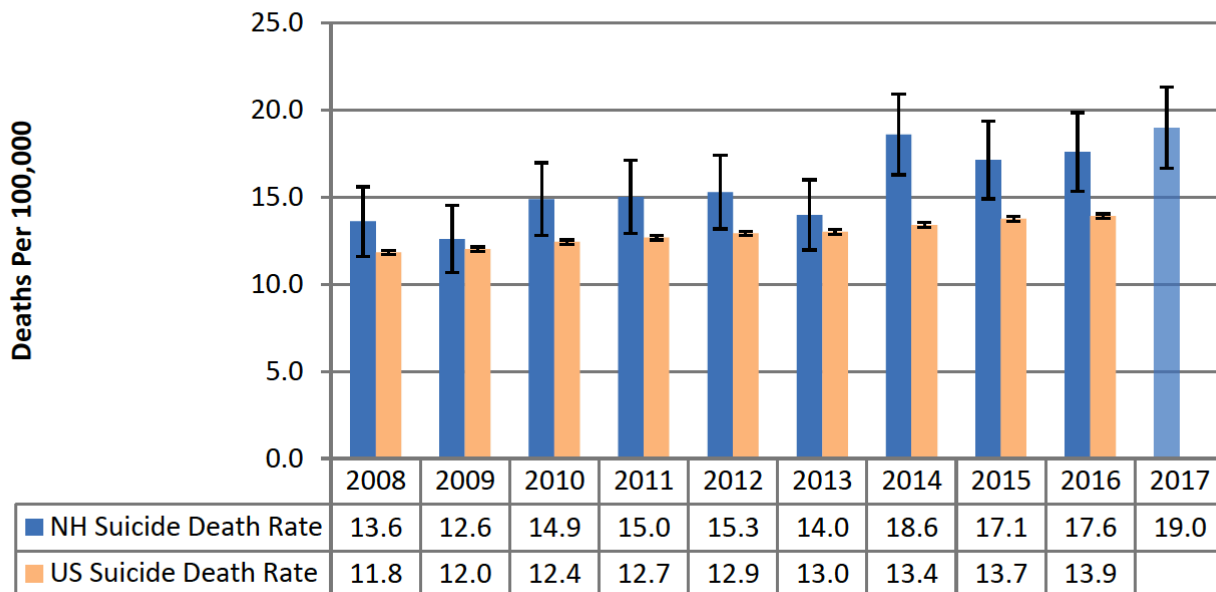
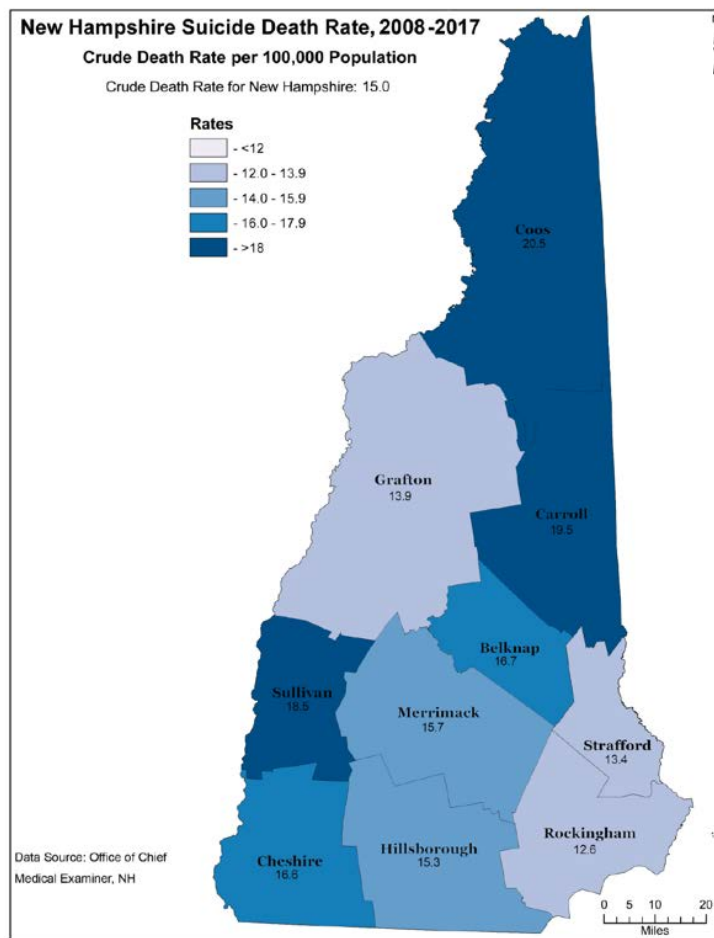


Figure 27. Suicide Rates per 100,000 by NH County, 2008-2017.

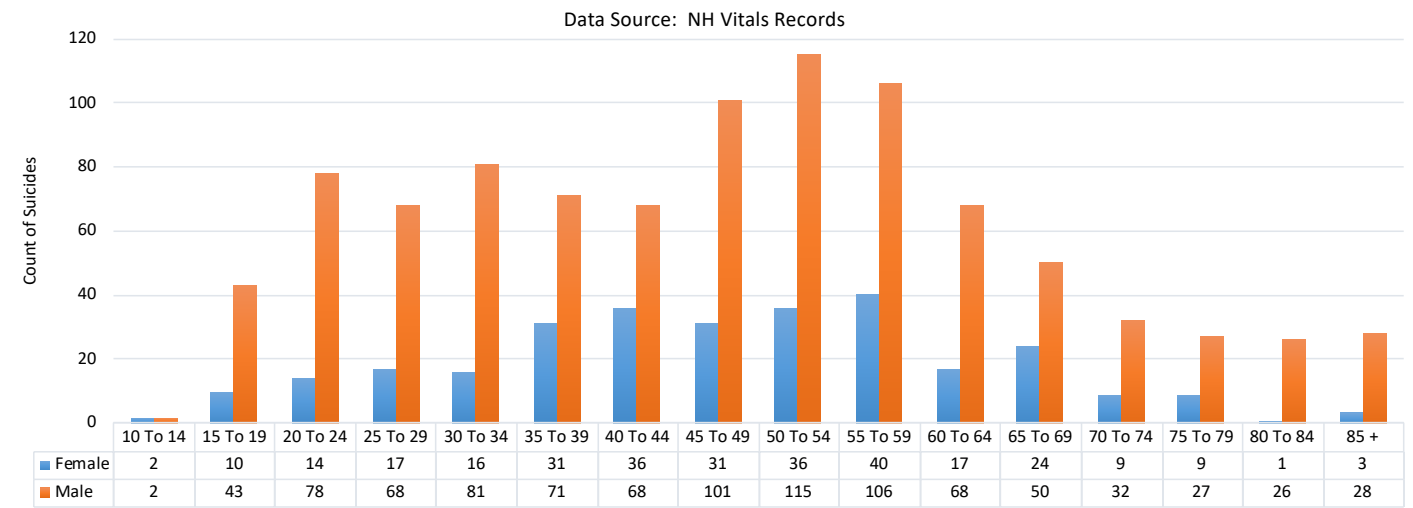
The highest rate of suicide deaths in the population occur in NH’s most rural counties: Coos, Carroll, and Sullivan counties. (Figure 27). Men are at least three times more likely to die from suicide than women, with the highest rates occurring in men 85 and older, followed next by elevated rates during transitions from adolescence to adulthood and in middle life (Figure 28). However, NH women ages 15-34 are more than twice as likely than men to attempt suicide (NH YRBS, 2017; NH ED and Hospital discharge data). The gender difference in suicide deaths versus attempts may be explained in part by the fact that males, in general, use more lethal means. Of NH male youth and young adults who died by suicide between 2013 and 2017, 50% used firearms compared to 17% of females.



## NH Violence & Injury Prevention Plan 2020-2025

Suicide is now the second leading cause of death in the 10 to 19-year old age group in NH. Between 2008-2017, 245 NH youth and young adults aged 10-24 lost their lives to suicide. Of great concern is the rising trend in suicide deaths in NH youth as the number of youth suicides has doubled that of prior years.

Figure 28. Number of NH Suicide Deaths by Age Group and Gender, 2013-2017



Data examining suicide incidence across different occupations in NHs, shows that in the last five years (2014-2018), those working in construction had the highest incidence of suicide. While not a causal link, we know that construction jobs in NH are typically associated with several suicide risk factors including a lack of regular medical insurance, lower / less stable wages, longer commutes, transient work settings affecting relationships, and as noted in previous sections, higher incidence of substance misuse.

There were between 31,020 and 41,607 years of potential life lost to suicide from 2012-2016 in NH.<sup>63</sup> Suicide's most obvious cost is the loss of individuals and their potential contribution to their loved ones and to society. For each suicide death, there are many survivors of suicide loss (the family and close friends of someone who died by suicide) who are then at higher risk for depression and suicide themselves. It is estimated that as many as 135 individuals are impacted by one suicide death "resulting in 5.5 million U.S. residents exposed to suicide in a given 12-month period."<sup>64</sup>

Nationally, suicide attempts treated in emergency departments and hospitals represented an estimated \$3.9 billion in health care costs in 2010. This does not include





<sup>63</sup> CDC WISQARS

<sup>64</sup> Cerel J, Brown MM, Maple M, Singleton M, van de Venne J, Moore M, Flaherty C. How many people are exposed to suicide? Not six. *Suicide and Life-Threatening Behavior*. 2019 Apr;49(2):529-34.

the costs associated with mental health services on an inpatient or outpatient basis.<sup>65</sup> In NH, suicide deaths where the individual received treatment in a hospital or emergency department and subsequently died, resulted in an estimated \$500,000 in medical expenses in 2010. Harder to measure is the cost to employers of lower or lost productivity due to suicide attempts or deaths by employees or their loved ones. An estimate provided by the CDC indicates that there is an average work loss cost of \$1.1 million for each suicide death in NH.

## Risk and Protective Factors for Suicide

As summarized in the CDC *Connecting the Dots* brief, many risk and protective factors for suicide are also common to other types of violence such as child maltreatment and domestic and intimate partner violence. The table below lists the main risks and protective factors identified in the literature as well as by NH suicide prevention stakeholders.

 Social Norms	<ul style="list-style-type: none"> <li>• Cultural and religious beliefs that suicide is a noble resolution of a personal dilemma</li> <li>• Local “epidemics” of suicide</li> <li>• Stigma of seeking help for mental health issues, substance misuse, or suicidal thoughts</li> <li>• Media violence including videogames</li> </ul>
 Economic Stability	<ul style="list-style-type: none"> <li>• Financial hardship</li> <li>• Neighborhood poverty is a risk factor</li> <li>• Lack of job opportunities or job skills</li> <li>• Transient work and/or long commutes to job sites</li> </ul>
 Resilience & Skills	<ul style="list-style-type: none"> <li>• Loss (e.g., relational, social, work, or financial)</li> <li>• Aggression and poor impulse control</li> <li>• Life skills in problem-solving, coping, conflict resolution, and non-violent ways of handling disputes all protective</li> <li>• Feelings of purpose in life</li> <li>• Prior attempt of suicide</li> </ul>
 Access	<ul style="list-style-type: none"> <li>• Access to mental &amp; behavioral health treatment (Lack of is a risk; Easy access is protective)</li> <li>• Easy access to firearms and other lethal methods</li> <li>• High alcohol outlet density is a risk factor</li> </ul>

<sup>65</sup> CDC WISQARS



Connections

- Depression, social isolation and hopelessness
- Family history of maltreatment is a significant risk, as is a family member's suicide (or attempted suicide)
- Family & community support an important protective factor
- Supportive relationships at school, work, with health care providers

## Goals & Objectives: 2020-2025

Over the last few decades, NH has built a robust infrastructure for suicide prevention and postvention coordinated by several key partners, including the NH office of the National Alliance for Mental Health (NAMI), the state's Community Mental Health Centers, the state's Disaster Behavioral Health Response Team (DBHRT), the state's Integrated Delivery Networks (IDNs), the State Suicide Prevention Council (SPC), the Youth Suicide Prevention Assembly, and the Chief Medical Examiner's Office. The mission of the State Suicide Prevention Council (SPC) is to reduce the incidence of suicide in New Hampshire by accomplishing the goals of the NH Suicide Prevention Plan, which are to:

- Raise public and professional awareness of suicide prevention;
- Address the mental health and substance abuse needs of all residents;
- Address the needs of those affected by suicide; and
- Promote policy change.<sup>66</sup>

A major accomplishment of the council in 2016 was the revision of the NH Suicide Prevention Plan (2017-2020). A copy of the updated Plan is available from <https://www.dhhs.nh.gov/dphs/bchs/spc>.<sup>67</sup> A key addition to the revised Plan is the concept of a Zero Suicide approach to prevention in the state. Zero Suicide is a national initiative to reduce risk for suicide in health and behavioral health care settings. A Zero Suicide Academy training for healthcare organizations occurred in Exeter New Hampshire in November of 2017. This initiated projects, programs and resources for healthcare settings to engage in reducing suicide risk. This concept was built into the overall goals of the Plan, as well as the goals of the individual SPC subcommittees. More information about Zero Suicide is available from <http://zerosuicide.sprc.org/>. The State Suicide Prevention Plan is not a static document and will continue to evolve over time to incorporate promising concepts and initiatives, such as Zero Suicide, that may help prevent suicides in the state.<sup>68</sup>

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<sup>66</sup> NH NAMI, NH Suicide Prevention 2017 Annual Report, [www.TheConnectProgram.org/annual-reports](http://www.TheConnectProgram.org/annual-reports).

<sup>68</sup> Ibid.

## NH Violence & Injury Prevention Plan 2020-2025

Reducing risk for suicide is a high priority for New Hampshire over the next five years. There have been several recent developments that need to be noted in this injury and violence prevention plan as they impact diverse stakeholders and prevention partners' future efforts.

1. The Joint Commission is an independent, not-for-profit organization that accredits and certifies over 22,000 health care organizations and programs in the United States. Joint Commission accreditation and certification is recognized nationwide as a symbol of quality that reflects an organization's commitment to meeting certain performance standards. National Patient Safety Goals are a series of specific actions that accredited organizations are required to take in order to prevent medical errors and harm to patients. In July of 2019 a new national patient safety goal 15.01.01 was introduced which affects hospitals regarding suicide risk and recommendations. This will impact New Hampshire hospitals and help provide guidance on how to reduce risk in the healthcare setting. For more information go to:  
[https://www.jointcommission.org/topics/suicide\\_prevention\\_portal.aspx](https://www.jointcommission.org/topics/suicide_prevention_portal.aspx)
2. The American Foundation for Suicide Prevention (AFSP) has launched *Project 2025* which is a nationwide initiative to reduce the annual rate of suicide in the U.S. 20 percent by 2025. They are collaborating with the country's largest healthcare systems and accrediting organizations to accelerate the acceptance and adoption of risk identification and suicide prevention strategies we know work. The four critical areas they are focusing on to have the largest impact on reducing deaths are: firearms, healthcare systems, emergency departments and correctional systems. New Hampshire has previously been involved in creating and implementing training called *Counseling on Access to Lethal Means* and has the NH Firearms Safety Coalition, which produced the nationwide "*Gun Shop Project*." We expect this national focus from AFSP to help augment and lend more resources to working with the firearm community and healthcare to reduce suicide deaths in New Hampshire. For more information go to: <https://project2025.afsp.org/>.
3. New Hampshire passed landmark legislation regarding schools and suicide prevention in 2019. Senate bill 282 was signed by Governor Sununu in August of 2019 and becomes effective July 1, 2020. This bill mandates that schools provide training on recognizing the warning signs for suicide and effective prevention strategies not only for teachers, but for all staff members, such as food service employees, janitors and volunteers. As suicide remains one of the leading causes of death for New Hampshire youth this work positions suicide prevention as a



priority for youth. Unfortunately, there was no funding attached to this bill. How this will be actually implemented will require more work and support to make it happen. Currently there are organizations in New Hampshire who support training in schools and the state's Suicide Prevention Council will be working to help coordinate and facilitate discussions to move this forward.

4. New Hampshire has been fortunate to receive funding from the CDC for the National Violent Death Reporting System which is housed in the Office of the Chief Medical Examiner. This data is a rich source of information and as this system matures it will be used to inform prevention efforts moving forward.
5. The National Alliance on Mental Illness in NH (NAMI NH) has been awarded a \$735,844 Garrett Lee Smith federal grant to support the organization's youth suicide prevention efforts throughout the state over the next five years. .

#### Where does NH want to be in 2025?

Reduce the number of suicide deaths so that NH's rate approximates the national suicide rate of < 14 deaths/100,000 per year.

#### Strategies for Reducing Suicide

##### Societal & Policy Level

- Increase Medicaid reimbursement for mental & behavioral health services
- Implement 10 year Plan for Mental Health Services which calls for an increase in inpatient beds and use of evidence-based suicide prevention strategies
- National Suicide Prevention Lifeline and text line
- Implementation of the NH Suicide Prevention Plan with a focus on building awareness across systems and promotion of the 7 concepts of Zero Suicide
- Increase access to workplace support systems such as EAP (Employee Assistance Program)

<p>Community &amp; Organizational</p>	<ul style="list-style-type: none"> <li>• State Suicide Prevention &amp; NAMI NH annual conferences</li> <li>• CALM (Counseling on Access to Lethal Means) training</li> <li>• NAMI NH’s Connect Suicide Prevention Program – consultation, training, technical assistance, information, and resources</li> <li>• Connect Youth Leader training</li> <li>• NH Hospital suicide prevention task force</li> <li>• Mental Health First Aid</li> <li>• Mobile Crisis Response Teams</li> <li>• SOS (Signs of Suicide) school-based prevention program</li> <li>• Department of Health and Human Services’ Suicide Prevention Integration Team</li> <li>• NH Hospital Association’s Learning Collaborative</li> </ul>
<p>Interpersonal &amp; Individual</p>	<ul style="list-style-type: none"> <li>• Next of Kin Suicide Survivor packets</li> <li>• Support groups, e.g., Survivor &amp; Attempt Survivor groups</li> <li>• Illness, Management and Recovery (IMR) services at the CMHCs</li> <li>• Wellness Recovery Action Plans (WRAP) at the Peer Support Agencies</li> <li>• Intentional Peer Support, an Evidence Based Program</li> <li>• Speaker programs, such as “In Our Own Voice”</li> <li>• Promotion of the MY3 suicide prevention mobile app</li> <li>• Out of Darkness walks and postvention trainings, e.g., Paddle Power, Compassionate Friends, Zero Suicide Academy</li> <li>• Gun Lock distribution projects</li> <li>• National Guard’s ASIST (Applied Suicide Intervention Skills) Training for military members and civilians</li> </ul>

## How will we know we’re making progress?

- 1) Increase number of annual Connect provider trainings in NH (NAMI NH data).
- 2) DART Adolescent Screening data about firearms in the home and safe storage (DHMC practices only).
- 3) Continued measurement of suicide risk factors with NH BRFSS and YRBS administration.
- 4) Track number of suicide-related calls per year to NH Suicide Prevention Lifeline (Head Rest) to monitor uptake of help-seeking behaviors.

## Partners

- Attorney General (AG)
- Behavioral Health providers
- Children's Hospital at Dartmouth-Hitchcock (CHaD)
- Community Mental Health Centers
- Department of Health and Human Services
- Fatality Review Committees
- Firearm Community
- Healthcare providers
- Integrated Delivery Networks
- Regional Public Health Networks
- Law enforcement
- National Alliance for Mental Illness (NAMI)
- New Hampshire Hospital
- NH Suicide Prevention Council
- Office of Chief Medical Examiner
- Peer Support Agencies
- Schools
- Suicide Prevention Integration Team of DHHS (NH Department of Health and Human Services)
- Youth Suicide Prevention Assembly
- National Violent Death Reporting System (NVDRS)
- Military & veteran groups

## Funding Sources

- NH Medicaid
- Medicare
- SAMHSA grants
- NH DHHS

## Potential Challenges and Considerations for this Plan

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There are a number of challenges in carrying out as comprehensive an injury and violence prevention plan such as this. The first challenge relates to the quality, reliability, and availability of data to both inform this plan and predict where NH will be in five years. While death data has been quite stable since 1999, hospital and emergency department data have experienced a number of changes in the last decade, including new vendors and methods for cleaning and analyzing data, as well as shifts from ICD 9 to ICD 10 diagnosis codes. These changes have yielded better quality data in recent years, yet newer data sets are not exactly comparable to older data sets, limiting the ability to examine longitudinal trends in some injury areas. Moreover, time lags in accessing some hospital data can be as much as three years so in some cases we are making predictions based on 2016 numbers.

In a small state like NH, we are fortunate to have relatively small numbers of injury-related fatalities and hospital visits. Yet these lower injury counts compounded with our smaller state population make the calculation of mortality and morbidity rates to monitor the success of injury prevention efforts less precise. In some topic areas, such as sudden unexpected infant death and violence against children, NH's numbers are so small that rates can fluctuate dramatically with just a handful more cases in a given year. Where data from the last 5-10 years have allowed, we have calculated projections to establish our goals for the next five years. In other areas we use more a mix of process and intermediate outcome measures such as engagement, outreach, and self-reported data to set our five-year goals. For more information on the quality, reliability and methodology used to construct the data displays in this plan, please contact the Injury Prevention Program Manager at NH DHHS.

The selection of data for inclusion in this plan was given much consideration. First, we prioritized data that a) best highlighted the burden of injury in the plan's priority areas or target populations, b) enabled us to view longitudinal trends in order to study the effects of past efforts and predict future progress, c) would be available and comparable in five years, and d) were relatively easy to access and interpret for stakeholders. There is a tremendous amount of additional data for those who are interested in delving deeper. It is our goal to create an addendum of data compiled for the creation of this plan during the next year. The longer term goal and recommendation for the State is to create a systematic data visualization and monitoring structure to make the state's injury and violence data more easily accessible and comparable over time to support partners engaged in this work.

Other challenges in undertaking this updated strategic plan include the generally limited resources, variable funding streams, and siloed structures for implementing the diverse prevention strategies described in this plan. Despite NH's centralized Injury Prevention Program within the Section of Maternal Child Health at NH DHHS, many of the State's injury prevention efforts are actually carried out by contractors, non-profits, various state agencies, and groups funded by a mix of federal, state and private grants and foundations. A main objective of the process used to develop this Strategic Plan was to seek out and engage as many of the State's injury and violence prevention stakeholders to breakdown any silos, identify natural synergies and new partnerships, leverage limited resources by identifying leaders in certain areas, and raise awareness generally across the state in how this important (yet often overlooked) work is implemented.

Continued engagement efforts will be needed, including opportunities to share data on a regular basis and discuss lessons learned, new evidence and best practices. To this end, this success of this Plan will hinge upon the ability to harness new resources while strengthening the existing infrastructure and leadership support to ensure stable guidance and continuity over the five years. We recommend that the State of NH:

- Hire a dedicated, full time injury epidemiologist to lead the collection, analysis and ongoing surveillance of injury and violence data across all priority areas;
- Provide adequate funding for injury prevention programming, leadership and evaluation;
- Develop a data infrastructure to measure the impacts of injury across the continuum of care from first responders to rehabilitation and return-to-work;
- Develop standardized metrics, tracking systems, and relational databases to increase the ease of comparing and sharing data across different agencies and partner organizations;
- Expand access to data about Medicaid recipient utilization of care to better inform injury and violence prevention efforts
- Create data sharing agreements and other collaborative structures to break down silos between departments that hinder data sharing and progress monitoring.

## Concluding Remarks

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This plan has been the labor of many and reflects the breadth and scope of injury prevention in New Hampshire. This plan set the stage for discussions with injury advocates and colleagues who had never heard the terms risk and protective factors before or for whom the concept of the socio-ecological model was new. As we undertook this process it gave us the opportunity to educate, inform and “Connect the Dots” for partners who were previously only focused on their topic and well insulated in their silos. This led to many conversations and realizations that there is a bigger picture and that “upstream” prevention is necessary to affect change.

We want to thank those that have gone before us and provided a road map on how to approach injury from a shared risk and protective factor approach. Many states have been extremely generous with their work and time to coach us through this process. We are only beginning this journey and realistically we are years away from full implementation of this strategy. Many stars will need to align for us to have to capacity to use this approach but we have started our journey.

In closing, our special partnership with the Center for Program Design and Evaluation at Dartmouth has helped shepherd this plan to fruition. Their guidance, expertise and artful skill in drawing out information and supporting those for whom this was very hard work is deeply appreciated.

Sincerely,



Debra Samaha, MPH, RN

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