

## What is an Unintentional Injury?

Unintentional injuries are injuries that are not caused on purpose and are free from harmful intent. Unintentional injuries can occur in the form of falls, poisonings/overdoses, motor vehicle crashes, firearms, fires/burns, cuts/piercing, drowning/suffocation, overexertion, and by being struck/against an object.<sup>1</sup> Unintentional injuries can vary in nature (e.g., dislocation, internal injury, fracture, open wound, burn, amputation) and can affect different bodily regions (e.g., torso, upper or lower extremities).<sup>2</sup>

In 2019, unintentional injuries were the third leading cause of death in the United States.<sup>3</sup> Over 24.8 million cases of non-fatal unintentional injuries and over 173,000 cases of fatal unintentional injuries occurred in 2019.<sup>1,4</sup>

## Risk Factors for Unintentional Injury

### Demographic Risk Factors

- *Age*
  - In the United States, unintentional injuries were the leading cause of death among individuals between 1-44 years old in 2019.<sup>5</sup>
  - Forms of unintentional injury vary by age groups:<sup>6</sup>
    - Unintentional drowning was the leading cause of unintentional injury death among individuals 4 years of age and younger.
    - Unintentional motor-vehicle traffic was the leading cause of unintentional injury death among individuals 5-24 years old.
    - Unintentional poisoning was the leading cause of unintentional injury death among individuals 25-64 years old.
    - Unintentional falls were the leading cause of unintentional injury death among individuals 65 years and older.
- *Race/Ethnicity*
  - Non-Hispanic American Indians/Alaska Natives were more likely to die from an unintentional injury compared to any other races/ethnicities.<sup>1</sup>
- *Sex*
  - Males were more than twice as likely to die from an unintentional injury (68.23 per 100,000 residents) compared to females (31.26 per 100,000 residents).<sup>1</sup>
  - Males were more likely to be hospitalized from and unintentional injury compared to females.<sup>4</sup>

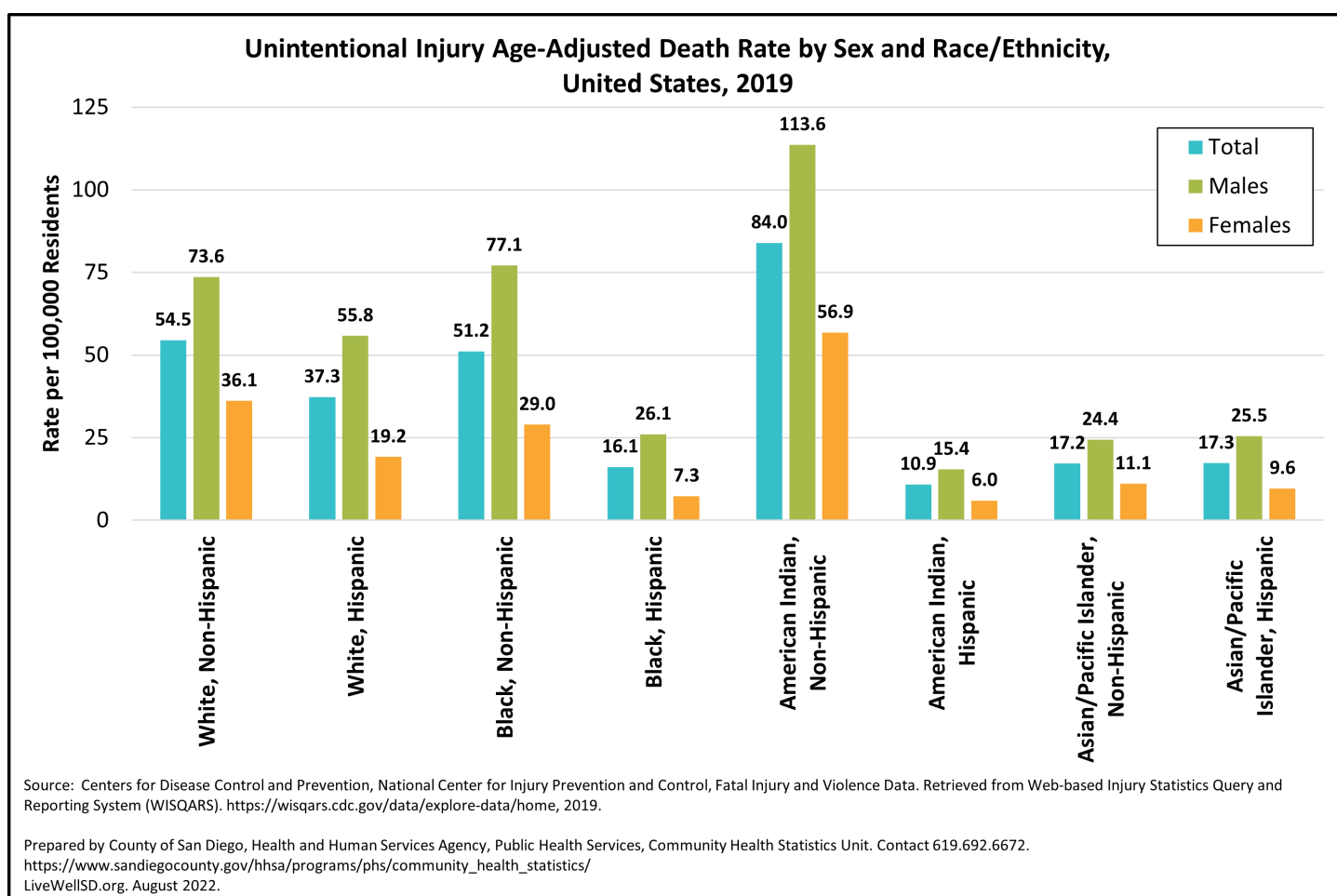
- *Socioeconomic Status (SES)*
  - Children and adolescents from low SES families may be more susceptible to unintentional injuries compared to children and adolescents from high SES families.<sup>7</sup>

## **Social and Behavioral Risk Factors**

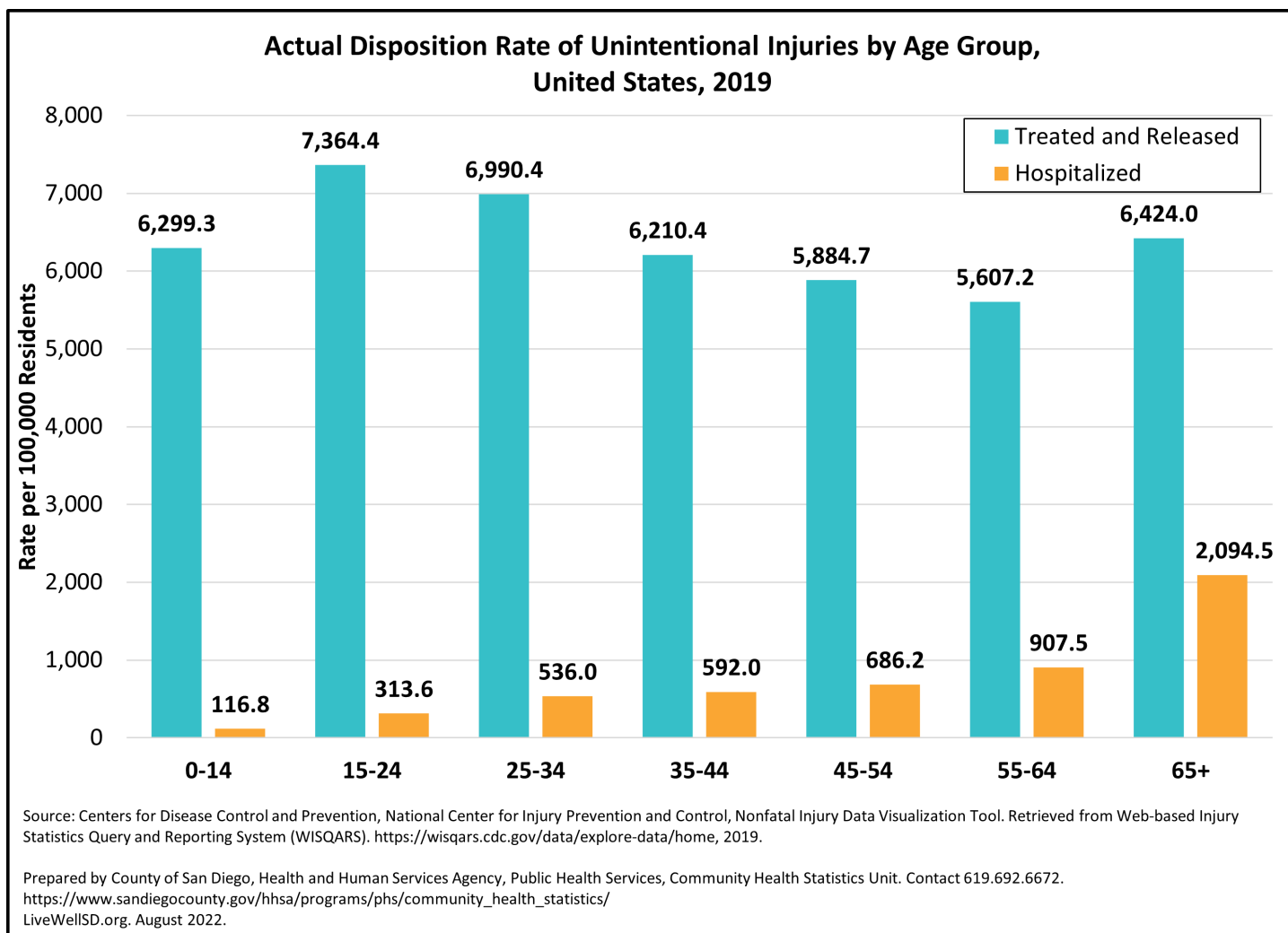
- *Alcohol and Drug Abuse*
  - Excessive alcohol use is associated with forms of unintentional injuries, such as motor-vehicle traffic crashes, falls, drowning, burns, and firearm injuries.<sup>8</sup>
  - Use of one or more substances such as alcohol, marijuana, prescription or over-the-counter medications, and other illicit drugs impair driving and increase the risk of a motor vehicle accidents.<sup>9</sup>
  - Over 1 in 3 deaths from unintentional injury were due to drug poisoning (35.9%).<sup>1</sup>
- *Lack of Physical Activity*
  - Physical inactivity weakens bone and decreases musculoskeletal health.<sup>10</sup>
  - Approximately 1 in 2 American adults and over 3 in 4 high school students do not get enough physical activity.<sup>10</sup>

## National Statistics and Disparities

- In 2019, falls (32.4%), being struck by/against an object (12.8%), and motor-vehicle related incidents (8.5%) were the leading causes of non-fatal unintentional injuries.<sup>4</sup>
- In 2019, the leading causes of death among unintentional injuries were unintentional drug poisoning (35.9%), unintentional falls (22.8%), motor-vehicle related incidents (21.7%).<sup>1</sup>



- In 2019, non-Hispanic American Indians had the highest age-adjusted death rate due to unintentional injury (84.0 per 100,000 residents) compared to all other races/ethnicities.<sup>1</sup>
- Non-Hispanic American Indian males had the highest age-adjusted death rate due to unintentional injury (113.6 per 100,000 residents) compared to males of all other races/ethnicities.<sup>1</sup>
- Non-Hispanic American Indian females had the highest age-adjusted death rate due to unintentional injury (56.9 per 100,000 residents) compared to females of all other races/ethnicities.<sup>1</sup>

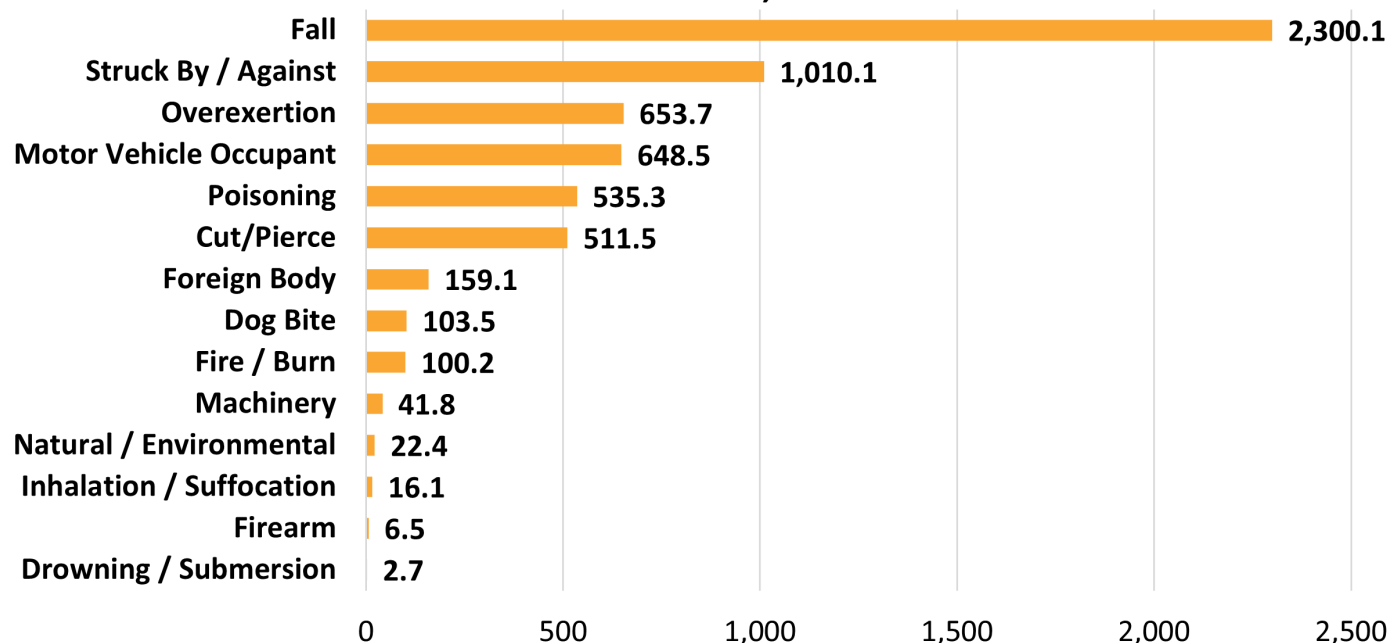


- In 2019, individuals 15-24 years old had the highest treated and released rate due to unintentional injury (7,364.4 per 100,000 residents), followed by individuals 25-34 years old (6,990.4 per 100,000 residents) and individuals 0-14 years old (6,299.3 per 100,000 residents).<sup>4</sup>
- In 2019, individuals 65 years and older had the highest hospitalization rate due to unintentional injury (2,094.5 per 100,000 residents), followed by individuals 55-64 years old (907.5 per 100,000 residents).<sup>4</sup>

## Cost

- Among unintentional injuries, the associated total medical costs due to falls was \$1.51 billion in the United States in 2019.<sup>11</sup>
- In 2019, the total medical costs from unintentional injury associated to drug poisoning and non-drug poisoning was \$507 million and \$31.4 million, respectively.<sup>11</sup>

## Age-Adjusted Rate of Non-Fatal Injuries by Mechanism, United States, 2019

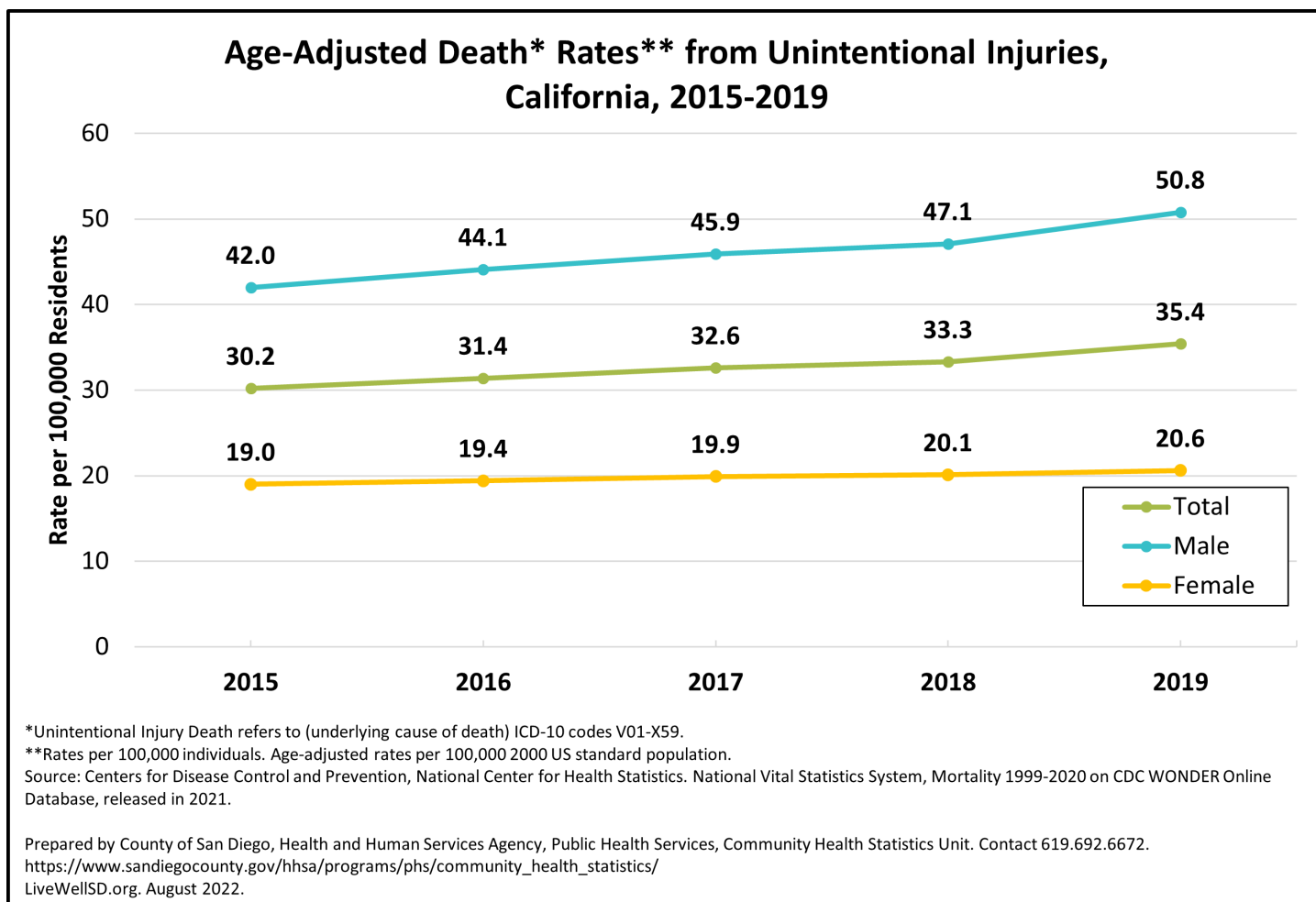


Source: Centers for Disease Control and Prevention, National Center for Injury Prevention and Control, Nonfatal Injury Data Visualization Tool. Retrieved from Web-based Injury Statistics Query and Reporting System (WISQARS). <https://wisqars.cdc.gov/data/explore-data/home>, 2019.

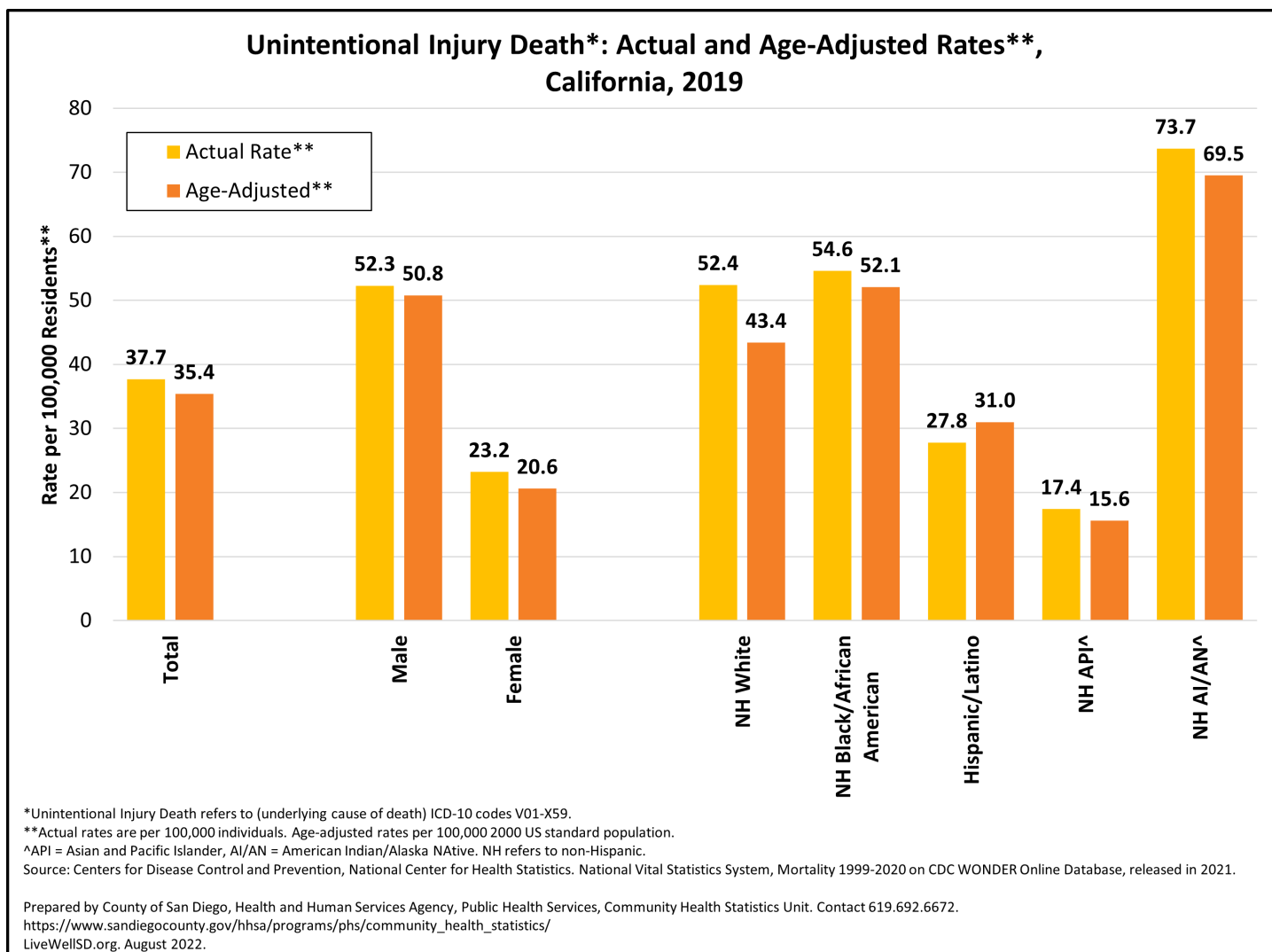
Prepared by County of San Diego, Health and Human Services Agency, Public Health Services, Community Health Statistics Unit. Contact 619.692.6672. [https://www.sandiegocounty.gov/hhsa/programs/phs/community\\_health\\_statistics/](https://www.sandiegocounty.gov/hhsa/programs/phs/community_health_statistics/) LiveWellSD.org. August 2022.

- In the United States, the highest age-adjusted rate of non-fatal unintentional injuries were due to falls (2,300.1 per 100,000 residents), followed by injuries that resulted from being struck by or against an object (1,010.1 per 100,000 residents) in 2019.<sup>4</sup>

## State Statistics and Disparities

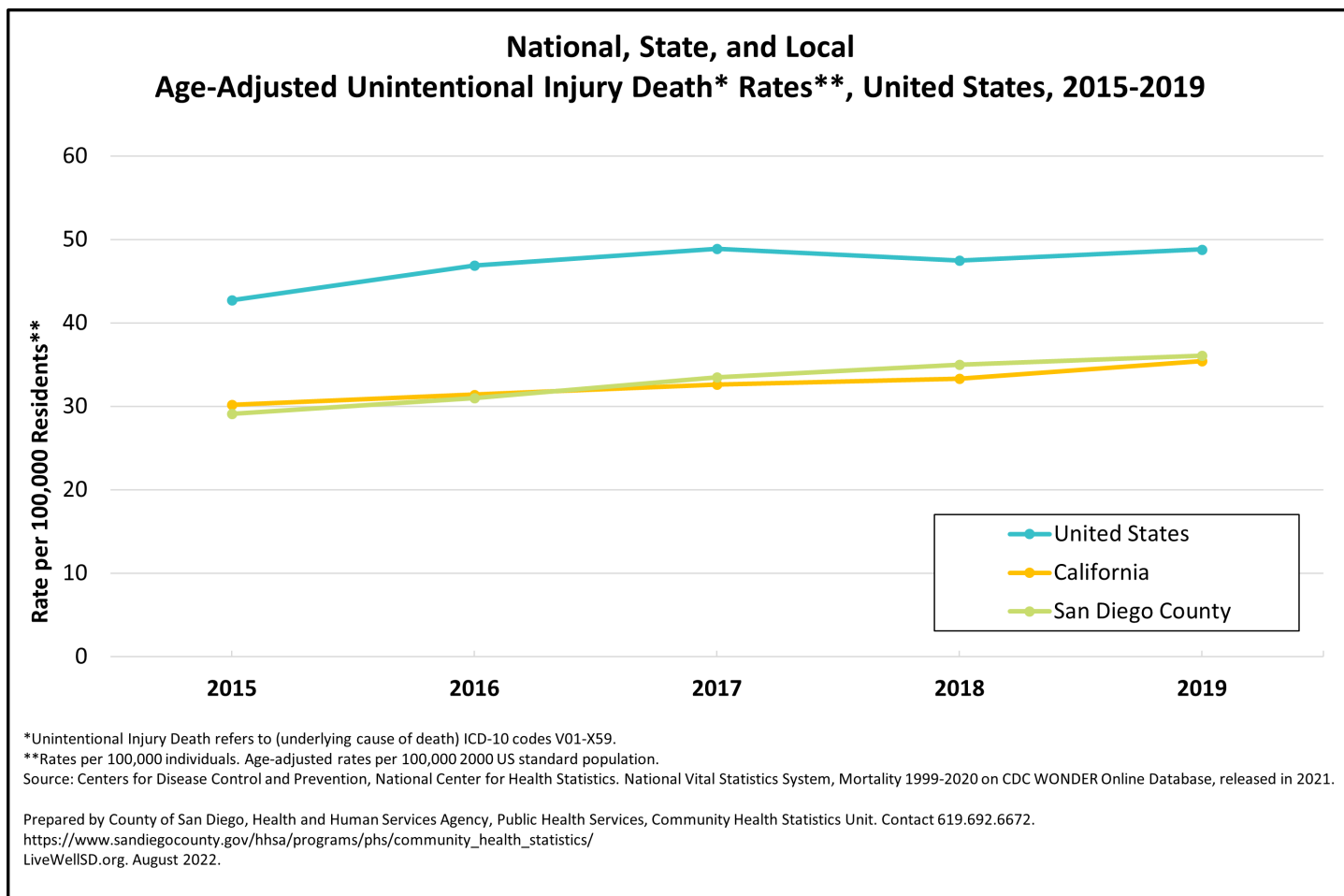


- Between 2015-2019, males in California had the highest age-adjusted death rates due to unintentional injuries compared to females and California overall.<sup>12</sup>
- In 2019, males in California had a higher age-adjusted death rates due to unintentional injuries (50.8 per 100,000 residents) than females (20.6 per 100,000 residents) and California (35.4 per 100,000 residents) overall.<sup>12</sup>



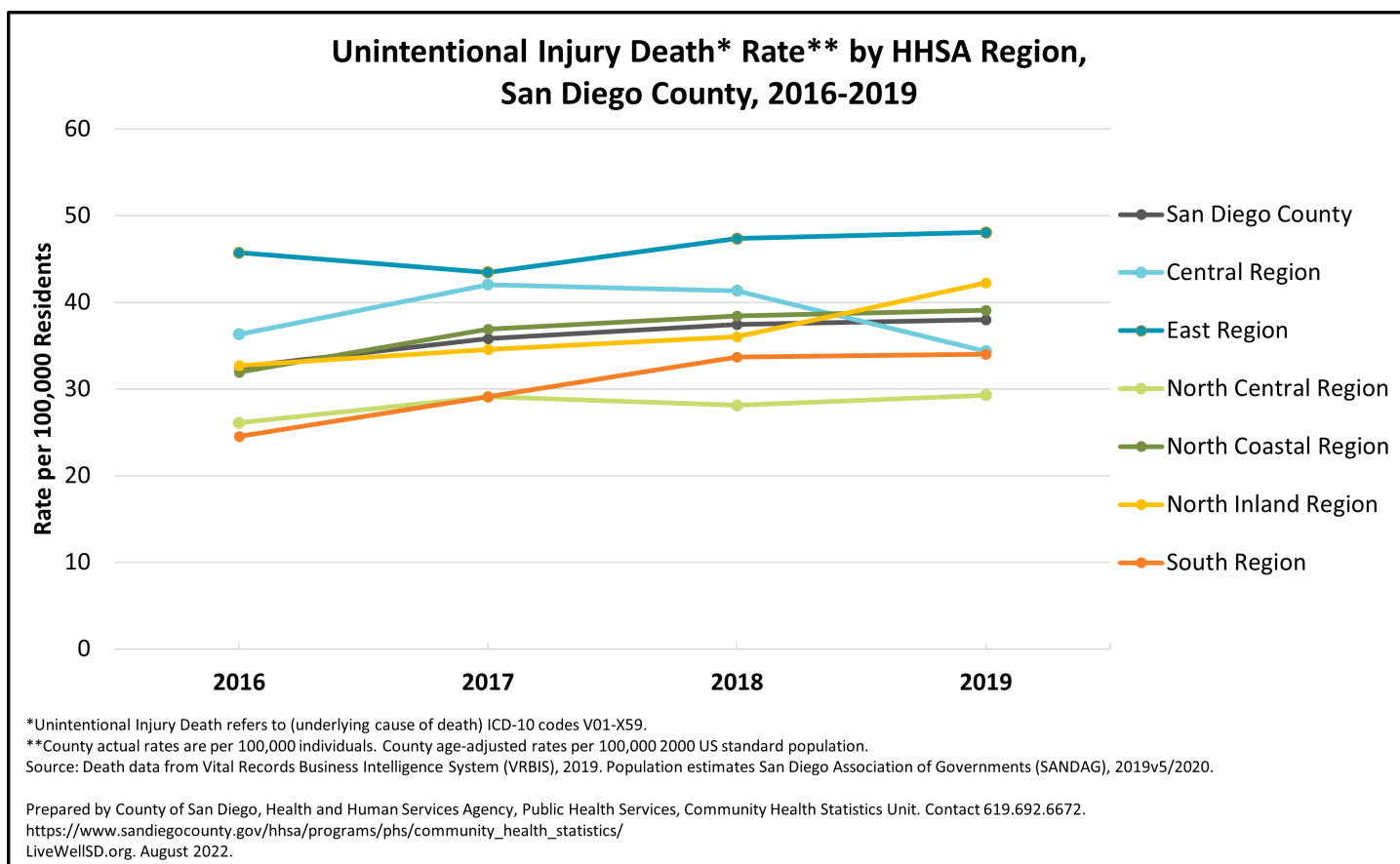
- In 2019, males in California had higher actual and age-adjusted rates of death due unintentional injuries compared to females in California.<sup>12</sup>
- In California, American Indian/Alaska Native residents had the highest actual and age-adjusted rates of death due unintentional injuries compared to all other races/ethnicities.<sup>12</sup>
- In 2019, American Indian/Alaska Natives (69.5 per 100,000 residents), non-Hispanic Blacks (52.1 per 100,000 residents), and non-Hispanic Whites (43.4 per 100,000 residents) had higher age-adjusted rates of death due to unintentional injuries compared to California (35.4 per 100,000 residents) overall.<sup>12</sup>

## Local Statistics and Disparities



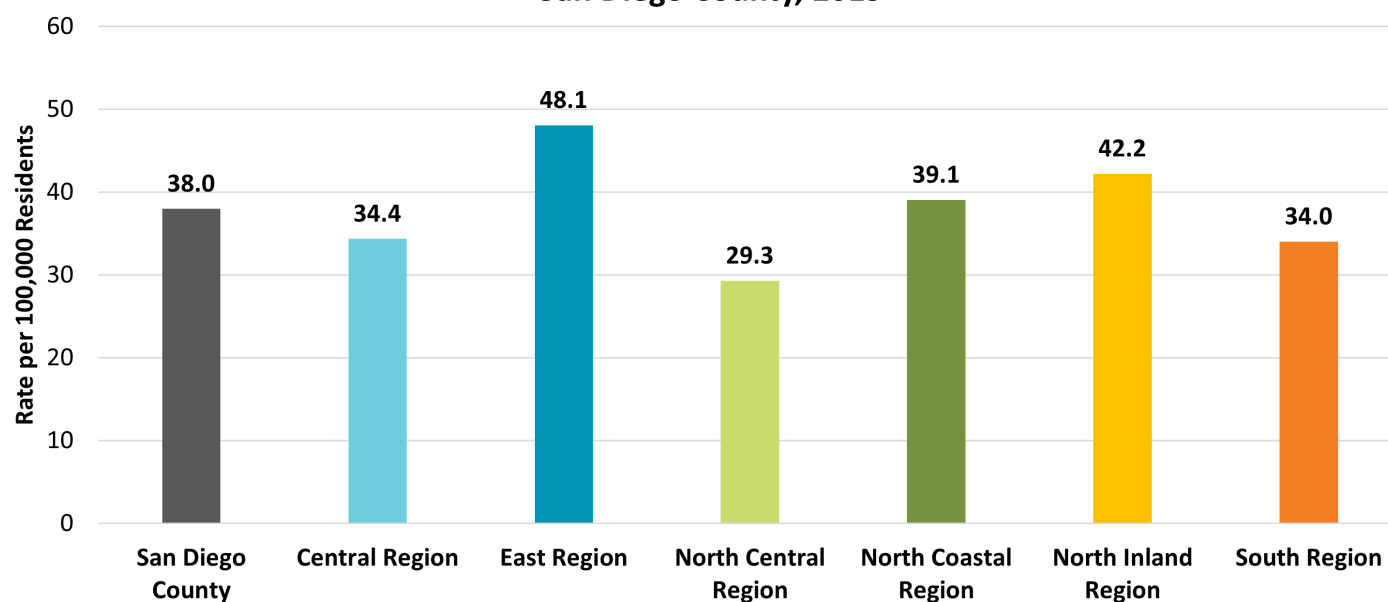
- Between 2015-2019, San Diego County and California had lower age-adjusted rates of death due to unintentional injuries compared to the United States overall.<sup>12</sup>





- Between 2016-2019, the death rate of unintentional injury increased in all Health and Human Services Agency (HHSA) regions, except Central Region.<sup>13</sup>
- South Region had the highest percent increase (38.6%) in unintentional injury death rates compared to all other HHSA regions from 2016 (24.5 per 100,000 residents) to 2019 (34.0 per 100,000 residents).<sup>13</sup>

**Unintentional Injury Death\* Rate\*\* by HHSA Region,  
San Diego County, 2019**



\*Unintentional Injury Death refers to (underlying cause of death) ICD-10 codes V01-X59.

\*\*County actual rates are per 100,000 individuals. County age-adjusted rates per 100,000 2000 US standard population.

Source: Death data from Vital Records Business Intelligence System (VRBIS), 2019. Population estimates San Diego Association of Governments (SANDAG), 2019v5/2020.

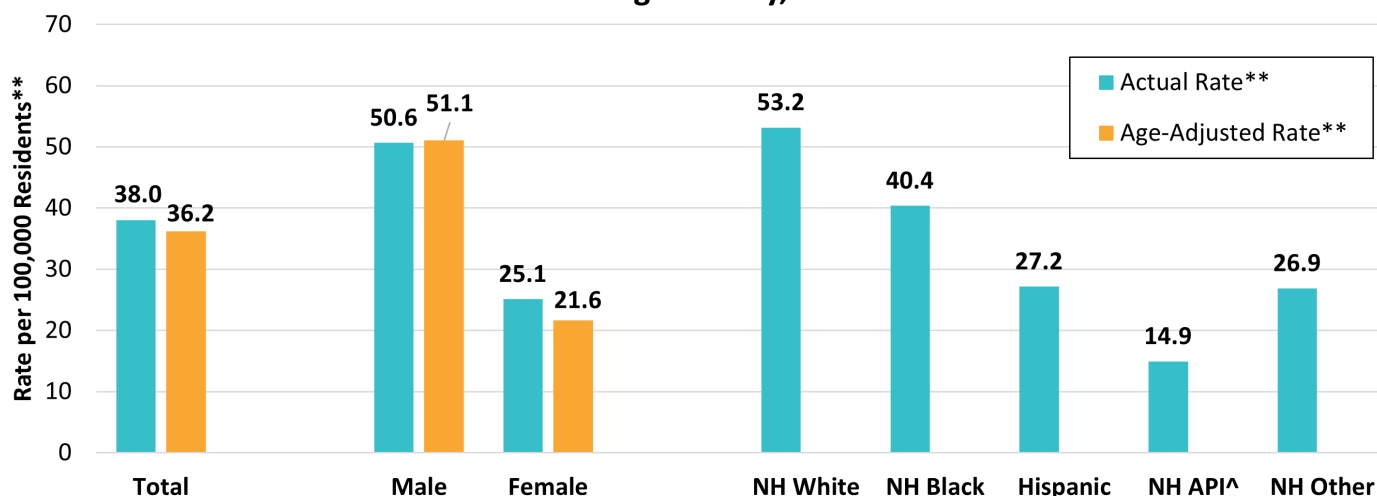
Prepared by County of San Diego, Health and Human Services Agency, Public Health Services, Community Health Statistics Unit. Contact 619.692.6672.

[https://www.sandiegocounty.gov/hhsa/programs/phs/community\\_health\\_statistics/](https://www.sandiegocounty.gov/hhsa/programs/phs/community_health_statistics/)

LiveWellSD.org. August 2022.

- In 2019, East Region (48.1 per 1000,000), North Inland Region (42.2 per 1000,000), and North Coastal Region (39.1 per 100,000 residents) had higher death rates due to unintentional injuries than all other HHSA regions and San Diego County overall (38.0 per 100,000 residents).<sup>13</sup>
- Among all HHSA regions, North Central Region (29.3 per 1000,000) had the lowest death rate due to unintentional injury in 2019.<sup>13</sup>

**Unintentional Injury Death\*: Actual and Age-Adjusted Rate\*\*,  
San Diego County, 2019**



\*Unintentional Injury Death refers to (underlying cause of death) ICD-10 codes V01-X59.

\*\*County actual rates are per 100,000 individuals. County age-adjusted rates per 100,000 2000 US standard population.

^API = Asian and Pacific Islander. NH refers to non-Hispanic.

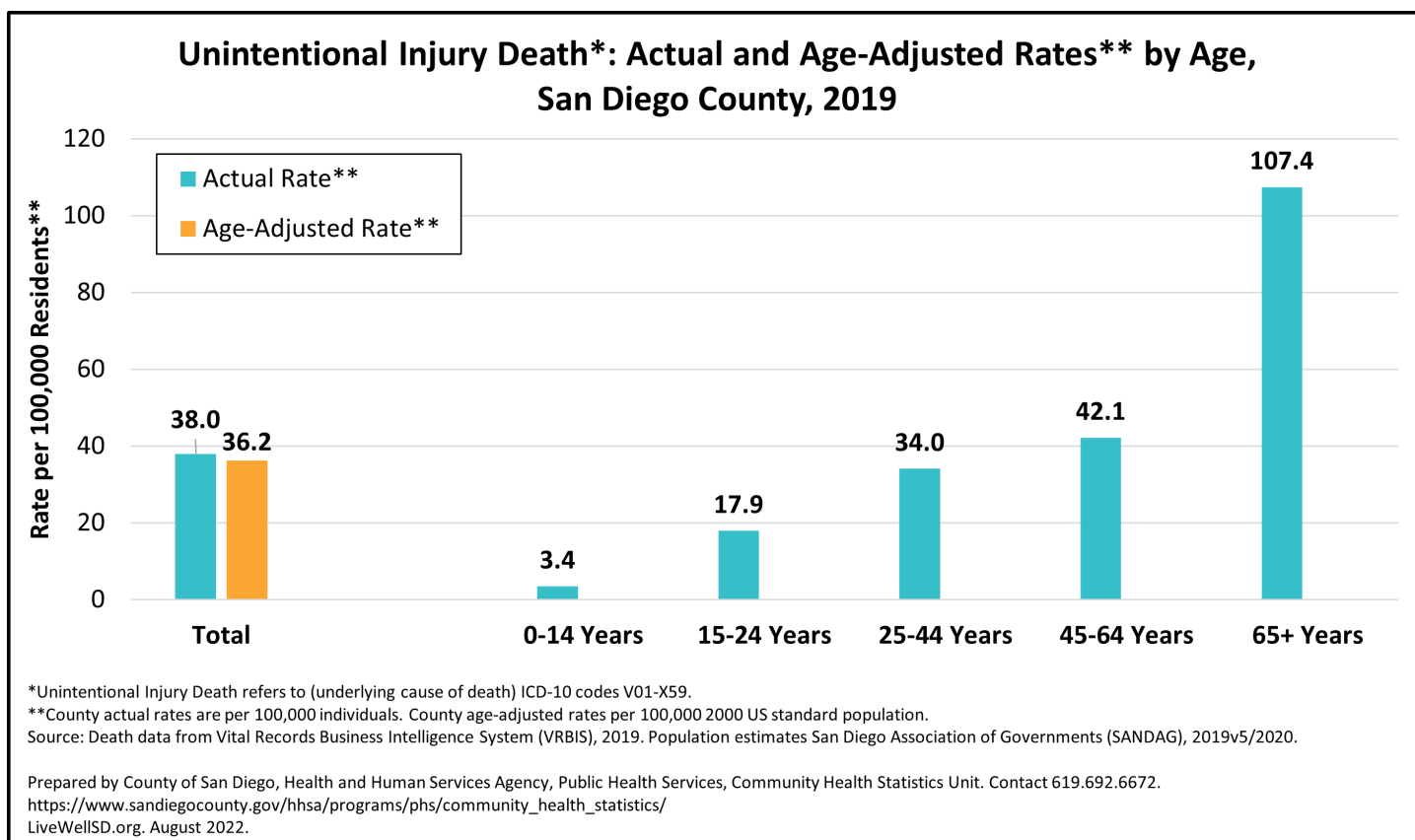
Source: Death data from Vital Records Business Intelligence System (VRBIS), 2019. Population estimates San Diego Association of Governments (SANDAG), 2019v5/2020.

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- In 2019, male residents in San Diego County had higher actual and age-adjusted rates of death due to unintentional injury compared to female residents in San Diego County.<sup>13</sup>
- In 2019, males in San Diego County had a higher age-adjusted rate of death due to unintentional injury (51.1 per 100,000 residents) compared to the age-adjusted unintentional injury death rate in San Diego County overall (36.2 per 100,000 residents).<sup>13</sup>
- Non-Hispanic White residents in San Diego County had the highest rate of death due to unintentional injury compared to all other races/ethnicities.<sup>13</sup>
- Non-Hispanic White residents in San Diego County had a higher rate of death due to death unintentional injury (53.2 per 100,000 residents) than in San Diego County overall (38.0 per 100,000 residents).<sup>13</sup>



- San Diego County residents 65 years and older had the highest death rate due to unintentional injury compared to all other age groups.<sup>13</sup>
- San Diego County residents 65 years and older had a higher death rate due to unintentional injury (107.4 per 100,000 residents) compared to San Diego County overall (38.0 per 100,000 residents).<sup>13</sup>

## Unintentional Injury and Its Complications: Prevention for Individuals

Prevention strategies can help reduce the number or severity of unintentional injuries. Selected below are prevention methods for some of the leading causes of unintentional injuries.

- *Falls and Overexertion*
  - Improve balance and leg strength by engaging in strength and balance exercises.<sup>14</sup>
  - Get eye exams at least once a year to check vision and update eyeglasses if necessary.<sup>14</sup>
  - Adjust work and living spaces by:<sup>14</sup>
    - Removing tripping hazards from common walkways,
    - Placing items within reach or using a step stool to reach items, and
    - Using non-slip mats on bathtub/shower floors.
- *Motor-Vehicle Related Injuries*
  - Avoid driving while impaired by one or more substances such as alcohol, prescription or over-the-counter medications, marijuana, or other illicit drugs.<sup>9</sup>
  - Reduce the risk of serious injury by using car seats/booster seats for young children and seat belts for older children and adults.<sup>15</sup>
  - Avoid distractions (e.g., talking/texting on the phone, eating) while driving.<sup>16</sup>
- *Overdoses/Poisonings*
  - Store medications, cleaning products, pesticides, and other household chemicals in their original containers and keep them out of reach from children.<sup>17</sup>
  - Consult your provider or pharmacist to ensure proper dosage and avoid drug interactions.<sup>17</sup>
  - Access Naloxone, a medication which can immediately reverse an opiate overdose, if you or someone you know is engaging in substance use.<sup>18</sup>

## Prevention Tools for Public Health Professionals: Unintentional Injury Critical Pathway

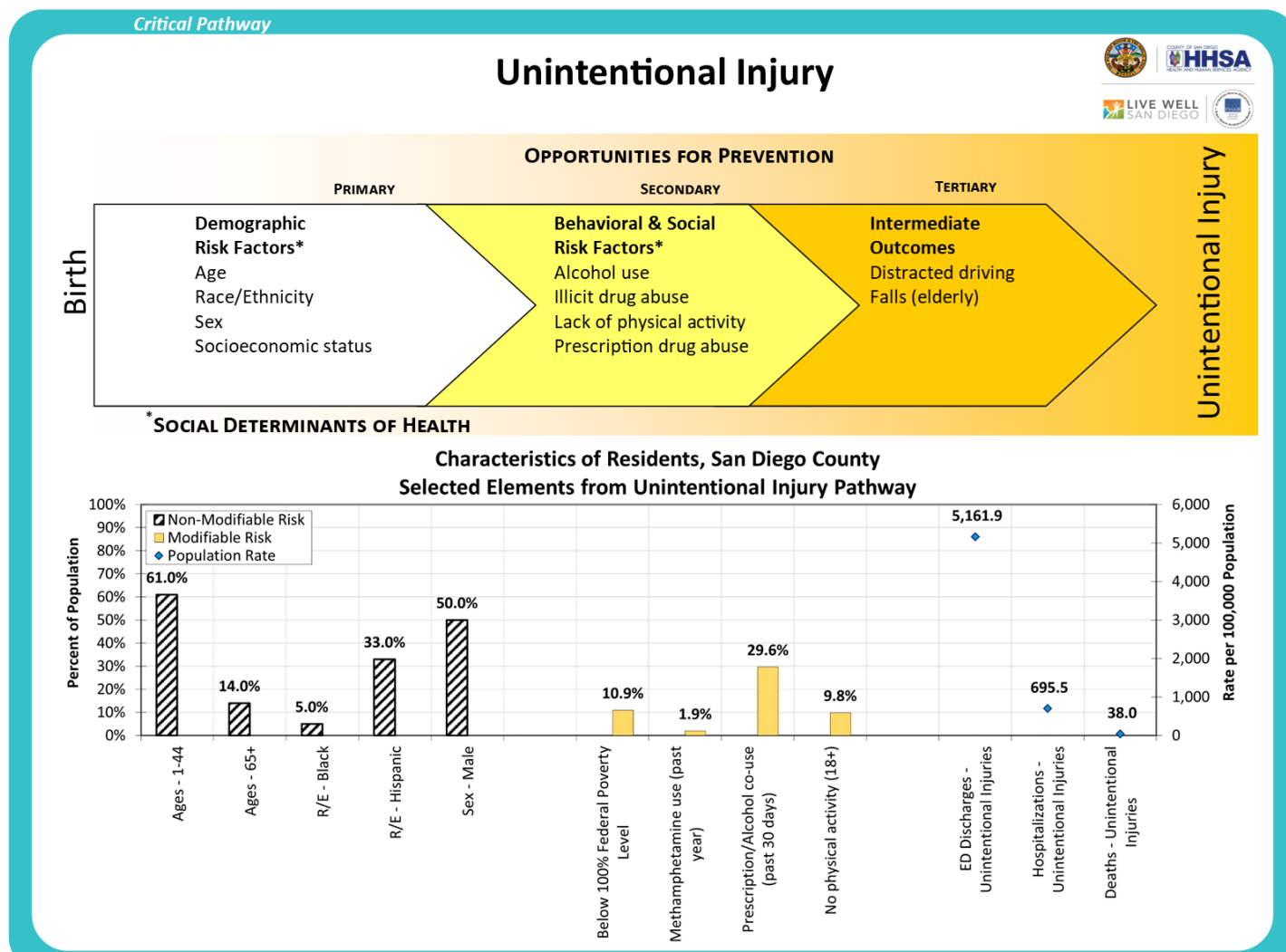
There are many opportunities for public health professionals in the community to help reduce the risk of unintentional injury and to improve the health outcomes of individuals who already have the disease. To assist in community health efforts, an *Unintentional Injury Critical Pathway* was developed.

The *Unintentional Injury Critical Pathway* is a tool to be used in health promotion and disease prevention efforts. Its purpose is to identify populations at greater risk for unintentional injury, and to identify prevention and early intervention opportunities. The *Unintentional Injury Critical Pathway* displays a diagram of the major risk factors and intermediate outcomes or related diseases that have an impact on, or result from, unintentional injury. Risk factors are marked as non-modifiable (black striped bars) such as race/ethnicity or sex and modifiable (solid colored bars) such as physical activity or substance use.

Beneath the risk factors diagram is a data grid describing the San Diego resident population in relation to selected elements of the pathway. The data grid is designed to assist in quick identification of opportunities for interventions that might have a high impact on a particular disease. The data represent all San Diegans, not only those with a particular disease. The left axis (bar) indicates the percent of the population with a known risk factor or intermediate outcome. The right axis (diamond) indicates the rate of a particular medical encounter within the population that is specified. The data are described fully in the complete version of the *Critical Pathways*.

In addition, the Community Health Statistics Unit website ([www.SDHealthStatistics.com](http://www.SDHealthStatistics.com)) provides detailed demographic, health and facility data including maps of geographically formatted health data. Also available are links to other County data sources, state and national sites of interest. For further assistance with data or interpretation, please contact the Community Health Statistics Unit.

## Unintentional Injury Critical Pathway



## Data Sources

<sup>1</sup> Centers for Disease Control and Prevention, National Center for Injury Prevention and Control, Fatal Injury and Violence Data. Retrieved from Web-based Injury Statistics Query and Reporting System (WISQARS). <https://wisqars.cdc.gov/data/explore-data/home>, 2019.

<sup>2</sup> Centers for Disease Control and Prevention. (2022). *WISQARS — Your source for U.S. injury statistics*. <https://www.cdc.gov/injury/wisqars/facts.html>

<sup>3</sup> Centers for Disease Control and Prevention. (2021). *Mortality in the United States, 2020*. <https://www.cdc.gov/nchs/products/databriefs/db427.htm>

<sup>4</sup> Centers for Disease Control and Prevention, National Center for Injury Prevention and Control, Nonfatal Injury Data Visualization Tool. Retrieved from Web-based Injury Statistics Query and Reporting System (WISQARS). <https://wisqars.cdc.gov/data/explore-data/home>, 2019.

<sup>5</sup> Centers for Disease Control and Prevention. (2022). *Injuries and violence are leading causes of death*. <https://www.cdc.gov/injury/wisqars/animated-leading-causes.html>

<sup>6</sup> Centers for Disease Control and Prevention, National Center for Injury Prevention and Control, Leading Causes of Death Visualization Tool. Retrieved from Web-based Injury Statistics Query and Reporting System (WISQARS). <https://wisqars.cdc.gov/data/lcd/home>, 2019.

<sup>7</sup> Mahboob, A., Richmond, S. A., Harkins, J. P., & Macpherson, A. K. (2019). Childhood unintentional injury: The impact of family income, education level, occupation status, and other measures of socioeconomic status. A systematic review. *Paediatrics & child health*, 26(1), e39–e45. <https://doi.org/10.1093/pch/pxz145>

<sup>8</sup> Centers for Disease Control and Prevention. (2022). *Frequently asked Questions*. Alcohol Basics. <https://www.cdc.gov/alcohol/faqs.htm#howAlcoholAffect>

<sup>9</sup> Centers for Disease Control and Prevention. (2020). *Drug-impaired driving in the United States*. <https://www.cdc.gov/transportationsafety/pdf/Drug-Impaired-Driving-Summary-Sheet-LD-508.pdf>

<sup>10</sup> Centers for Disease Control and Prevention. (2022). *Physical inactivity*. National Center for Chronic Disease Prevention and Health Promotion (NCCDPHP). <https://www.cdc.gov/chronicdisease/resources/publications/factsheets/physical-activity.htm>

<sup>11</sup> Centers for Disease Control and Prevention. (2019). *Number of injuries and associated costs*. <https://wisqars.cdc.gov/cost/>



<sup>12</sup> Centers for Disease Control and Prevention, National Center for Health Statistics. National Vital Statistics System, Mortality 1999-2020 on CDC WONDER Online Database, released in 2021.

<sup>13</sup> California Department of Public Health, Center for Health Statistics and Informatics, Vital Records Business Intelligence System (VRBIS), 2019.

<sup>14</sup> Centers for Disease Control and Prevention. (2021). *Older adult fall prevention*. <https://www.cdc.gov/falls/facts.html>

<sup>15</sup> Centers for Disease Control and Prevention. (2021). *Keep child passengers safe*. <https://www.cdc.gov/injury/features/child-passenger-safety/index.html>

<sup>16</sup> Centers for Disease Control and Prevention. (2022). *Transportation safety*. [https://www.cdc.gov/transportationsafety/distracted\\_driving/index.html](https://www.cdc.gov/transportationsafety/distracted_driving/index.html)

<sup>17</sup> Health Resources and Services Administration. (n.d.). *Poison help: Prevention tips*. <https://poisonhelp.hrsa.gov/what-you-can-do/prevention-tips>

<sup>18</sup> California Department of Public Health. (2020). *Naloxone grant program*. <https://www.cdph.ca.gov/Programs/CCDPHP/DCDIC/SACB/Pages/NaloxoneGrantProgram.aspx>