The epidemiology of health inequities in suicidal behavior and prevention

Prevention Science and Methodology Group
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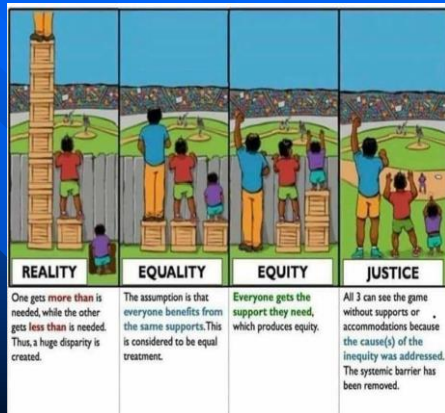Atlanta, GA

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Learning Objectives

- At the conclusion of the session, participants should be able to:
  - Address the rationale for correcting health disparities
  - Describe the public health approach
  - Identify health inequities in suicidal behaviors
  - Show how the public health approach can address inequities

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Defining "Health Diifferences" Conceptual Issues

- Disparity – inequality; difference in rank, condition
- Inequality -- lack of equality as of opportunity, treatment or status
- Inequity – unfair and unjust
  - unnecessary and avoidable

REALITY	EQUALITY	EQUITY	JUSTICE
One gets **more than** is needed, while the other gets **less than** is needed. Thus, a huge disparity is created.	The assumption is that *everyone benefits from the same supports.* This is considered to be equal treatment.	*Everyone gets the support they need,* which produces equity.	All 3 can see the game without supports or accommodations because *the cause(s) of the inequity was addressed.* The systemic barrier has been removed.

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Why address health inequities?

- Inequalities are unjust

- Inequalities affect everyone

- Inequalities are avoidable

- Interventions to reduce inequalities are cost effective

Source: Woodward A, Kawachi I. Why reduce health inequalities? Journal of Epidemiology and Community Health. 2000; 54:923-9.

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Why address health inequities?

- Action 2. Address Upstream Factors that Impact Suicide
- Focus on ways to prevent everyone from suicide.
  - Action 2.3 Engage and support high-risk and underserved groups.
  - the prevalence of suicidal behaviors varies across groups and subgroups and changes over time.
  - Suicide prevention efforts should focus on populations disproportionately impacted by suicide in different ways.

Source: U.S. Department of Health and Human Services, Office of Surgeon General. The Surgeon General's Call to Action to Implement the National Strategy for Suicide Prevention. Washington, DC: U.S. Department of Health and Human Services, Office of the Surgeon General; 2021.

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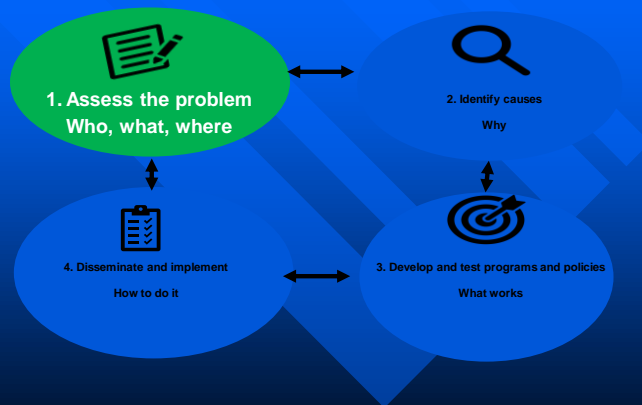## The Public Health Approach to Prevention

- The public health approach seeks to answer the foundational questions:
  - What is the problem?
  - How could we prevent it from occurring?
- To answer these questions, public health uses a systematic, scientific method for understanding and preventing suicide.

1. Assess the problem
Who, what, where, when

2. Identify causes
Why

4. Disseminate and implement
How to do it

3. Develop and test programs and policies
What works

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Public Health Approach to Suicide Prevention

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Leading causes of death – United States, 2019

Rank	Cause	Number of deaths
1	Heart Disease	659,041
2	Malignant Neoplasms	599,601
3	Unintentional Injuries	173,040
4	Chronic Lower Respiratory Ds	156,979
5	Cerebrovascular Ds	150,005
6	Alzheimer's Disease	121,499
7	Diabetes mellitus	87,647
8	Nephritis	51,565
9	Influenza and pneumonia	49,783
10	Suicide	47,511

Source: CDC vital statistics

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Leading causes of death by age group – United States, 2019

| Rank	10-14 years	15-19 years	20-29 years	30-39 years	40-49 years	50-59 years
1	Unintentional Injuries	Unintentional Injuries	Unintentional Injuries	Unintentional Injuries	Unintentional Injuries	Malignant Neoplasms
2	**Suicide**	**Suicide**	**Suicide**	**Suicide**	Malignant Neoplasms	Heart Disease
3	Malignant Neoplasms	Homicide	Homicide	Malignant Neoplasms	Heart Disease	Unintentional Injuries
4	Homicide	Malignant Neoplasms	Malignant Neoplasms	Heart Disease	**Suicide**	Liver Disease
5	Congenital Malformations	Heart Disease	Heart Disease	Homicide	Liver Disease	Diabetes Mellitus
6	Heart Disease	Congenital Malformations	Diabetes Mellitus	Liver Disease	Diabetes Mellitus	Chronic Lower Respiratory Ds
7	Chronic Lower Respiratory Ds	Influenza and Pneumonia	Congenital Malformations	Diabetes Mellitus	Cerebro-Vascular	**Suicide**
8	Influenza and Pneumonia	Chronic Lower Respiratory Ds	Complications of pregnancy	Cerebro-Vascular	Homicide	Cerebro-Vascular

Source: CDC vital statistics

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Leading causes of death by ethnicity – United States, 2019

| Rank	White	Black	American Indian/AN	Asian	Latino
1	Heart Disease	Heart Disease	Heart Disease	Malignant Neoplasms	Malignant Neoplasms
2	Malignant Neoplasms	Malignant Neoplasms	Malignant Neoplasms	Heart Disease	Heart Disease
3	Chronic Low Respiratory	Unintentional Injuries	Unintentional Injuries	Cerebrovascular	Unintentional Injuries
4	Unintentional Injuries	Cerebrovascular	Liver Disease	Unintentional Injuries	Cerebrovascular
5	Cerebrovascular	Diabetes Mellitus	Diabetes Mellitus	Diabetes Mellitus	Diabetes Mellitus
6	Alzheimer's Disease	Chronic Low Respiratory	Chronic Low Respiratory	Alzheimer's Disease	Alzheimer's Disease
7	Diabetes Mellitus	Homicide	Cerebrovascular	Chronic Low Respiratory	Liver Disease
8	Influenza and pneumonia	Kidney Disease	**Suicide**	Influenza and pneumonia	Chronic Low Respiratory
9	**Suicide**	Alzheimer's Disease	Kidney Disease	Kidney Disease	Kidney Disease

Source: CDC Vital Statistics

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Suicide among all persons by sex -- United States, 1933-2019

Rate per 100,000 population

Year

Male
Female
Total
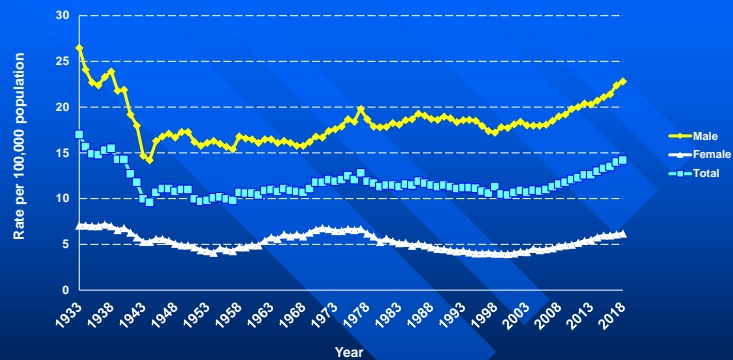
Source: CDC vital statistics

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Suicidal rates among by age group and sex -- United States, 1999 and 2019

Males

Rate per 100,000

Age group

1999 2019

Females

Rate per 100,000

Age group
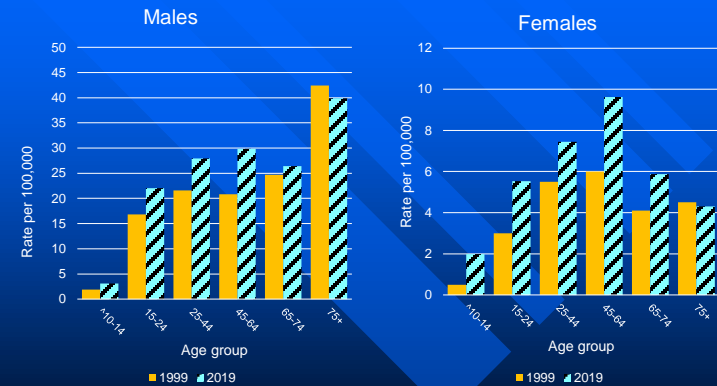
1999 2019

Source: CDC National Vital Statistics & Hedegaard H, Curtin SC, Warner M. Increase in suicide mortality in the United States, 1999–2018. NCHS Data Brief, no 362. Hyattsville, MD: National Center for Health Statistics. 2020. .

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Suicidal rates among by race/ethnicity and sex -- United States, 1999 and 2019
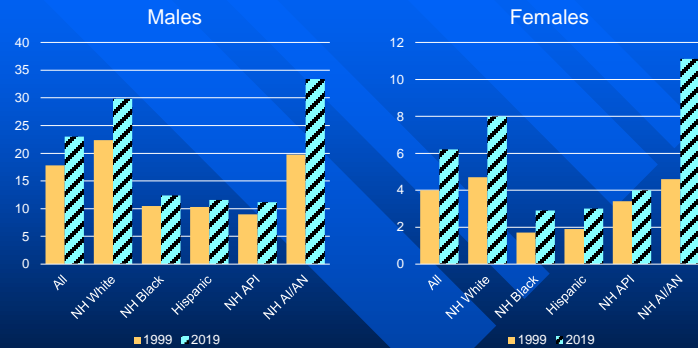
Source: WISQARS and Curtin SC, Hedegaard H. Suicide rates for females and males by race and ethnicity: United States, 1999 and 2017. NCHS Health E-Stat. 2019.

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Suicide rates among all persons by age and sex--United States, 2019
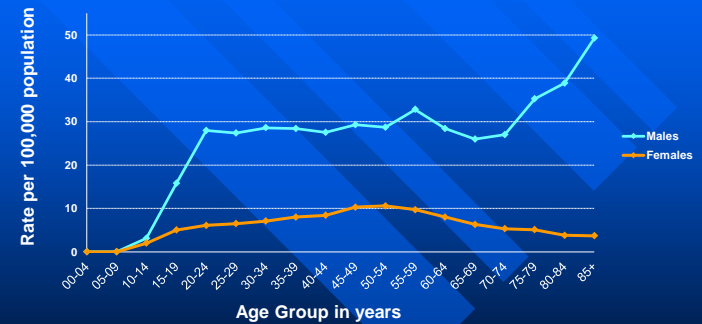
Source: CDC vital statistics

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Suicides and suicide rates among all persons -- United States, 2019
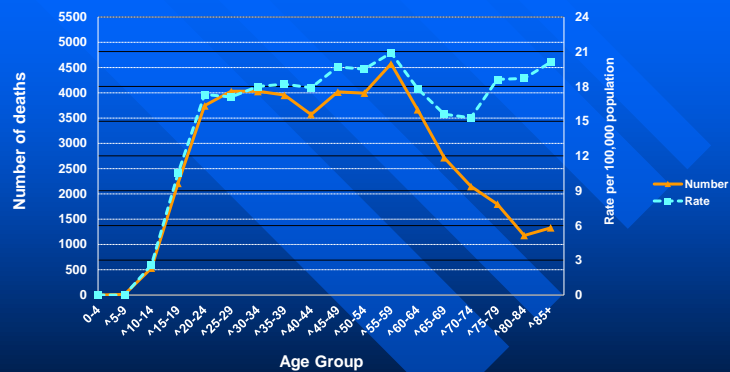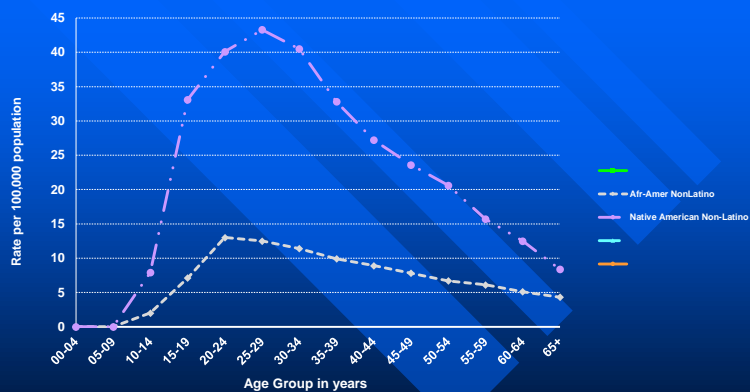
Source: CDC vital statistics

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Suicide rates by ethnicity and age group -- United States, 2015-2019
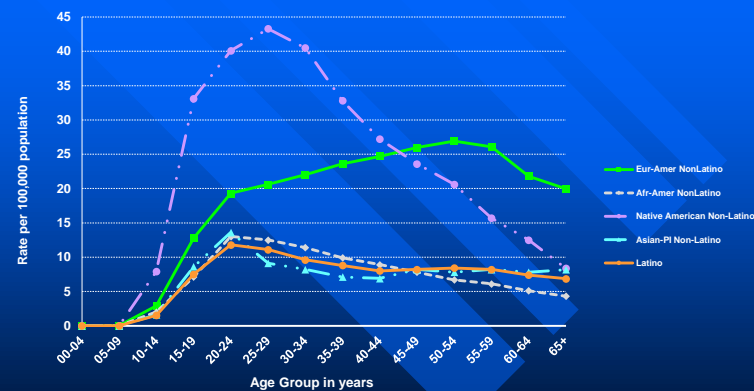
Source: CDC Vital Statistics

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Suicide rates by ethnicity and age group -- United States, 2015-2019
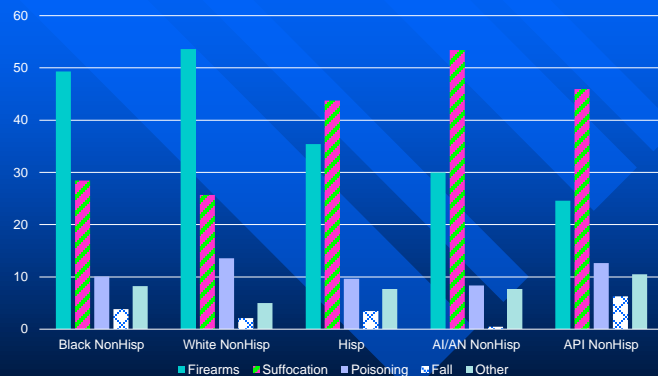
Source: CDC Vital Statistics

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Suicide rates by ethnicity and age group -- United States, 2015-2019
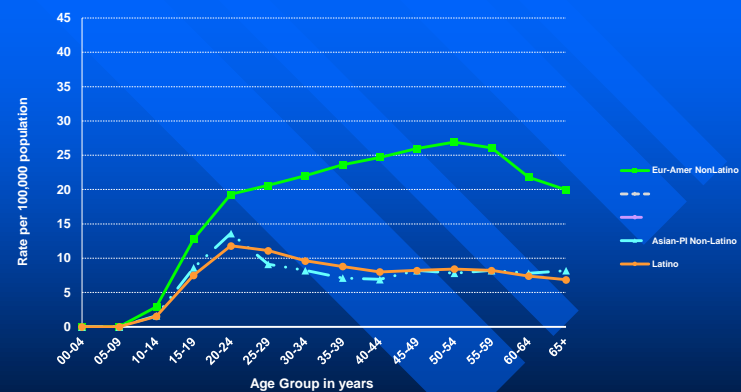
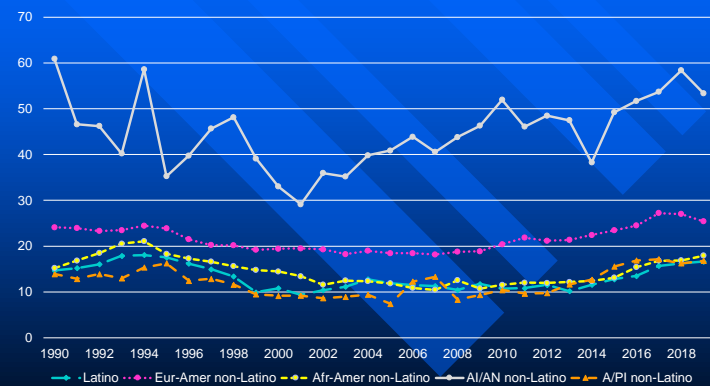Source: CDC Vital Statistics

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Suicide by ethnicity and method – United States, 2019

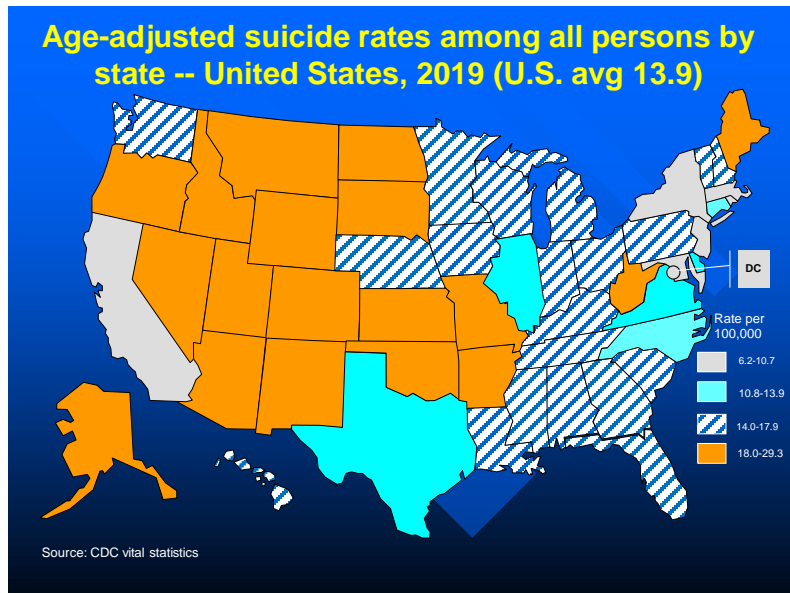Source: Centers for Disease Control and Prevention Vital statistics, WISQARS

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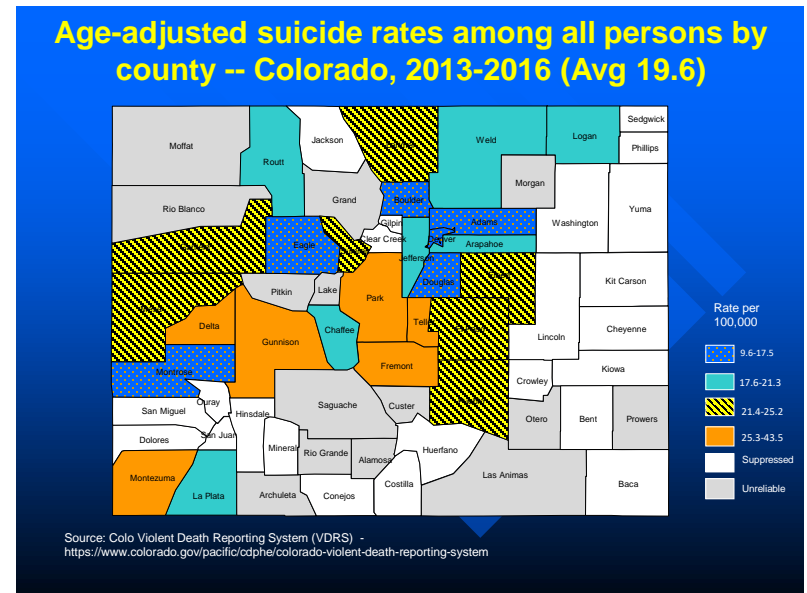**Suicide rates among males aged 15-24 years by ethnicity -- United States, 1990-2019**

Source: Centers for Disease Control and Prevention Vital statistics, WISQARS

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Age-adjusted suicide rates among all persons by state -- United States, 2019 (U.S. avg 13.9)

Rate per 100,000
- 6.2-10.7
- 10.8-13.9
- 14.0-17.9
- 18.0-29.3

Source: CDC vital statistics

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Age-adjusted suicide rates among all persons by county -- Colorado, 2013-2016 (Avg 19.6)

Rate per 100,000
- 9.6-17.5
- 17.6-21.3
- 21.4-25.2
- 25.3-43.5
- Suppressed
- Unreliable

Source: Colo Violent Death Reporting System (VDRS) -
https://www.colorado.gov/pacific/cdphe/colorado-violent-death-reporting-system
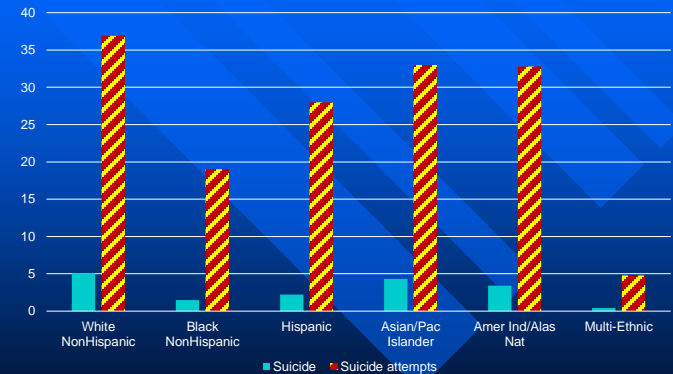
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Suicide rates by level of county urbanization among persons aged ≥10 years – U.S., 1999-2015

Source: CDC vital statistics

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Average annual rate* of suicides and suicide attempts by race and ethnicity – NY, 2009-2012

Source: New York State Office of Mental Health Division of Quality Management. Getting to the Goal: Suicide as a Never Event in New York State. August 2013. Available at: https://omh.ny.gov/omhweb/dqm/bqi/suicideasaneverevent.pdf
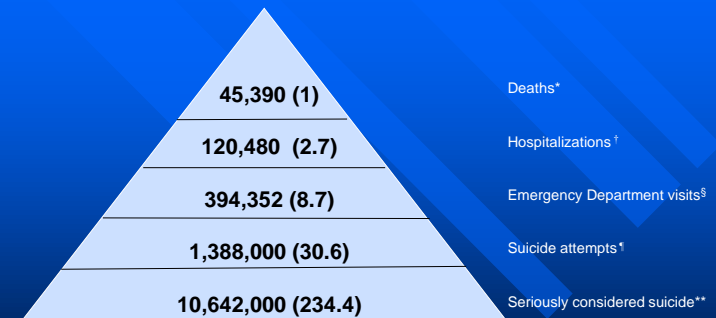
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Burden of injury

Deaths

Hospitalizations

Emergency Dept visits

Events reported on surveys

Unreported events

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Number and ratio of persons affected by suicidal thoughts and behavior among adults aged ≥18 years — United States, 2017

45,390 (1) — Deaths*

120,480 (2.7) — Hospitalizations [†]

394,352 (8.7) — Emergency Department visits[§]

1,388,000 (30.6) — Suicide attempts[¶]

10,642,000 (234.4) — Seriously considered suicide**

*Source: CDC's National Vital Statistics System,
[†]Source: Agency for Healthcare Research and Quality's Healthcare Cost and Utilization Project - Nationwide Inpatient Sample (HCUP-NIS) only 1st diagnosis
[§]Source: Source: CDC's National Electronic Injury Surveillance System-All Injury Program
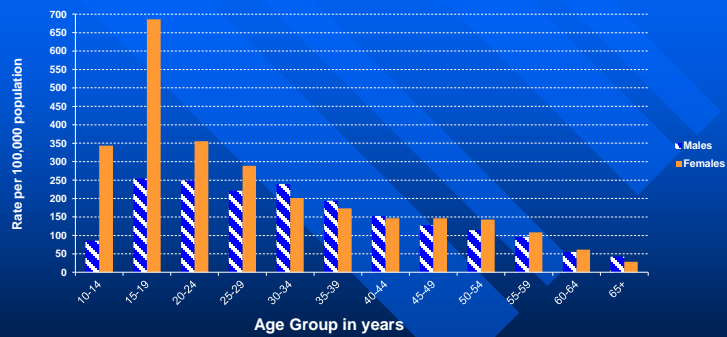[¶]Source: SAMHSA's National Survey on Drug Use and Health
** Source: SAMHSA's National Survey on Drug Use and Health
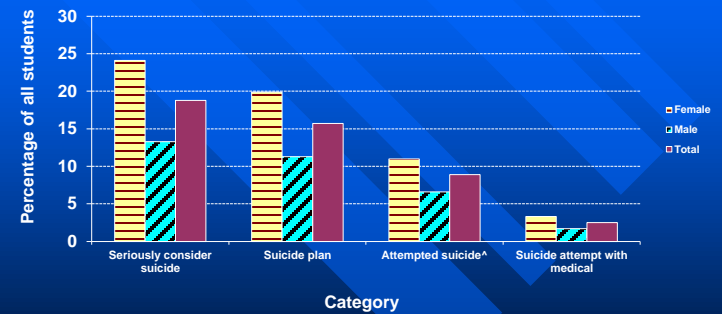Number in parentheses represent the ratio of deaths to other categories

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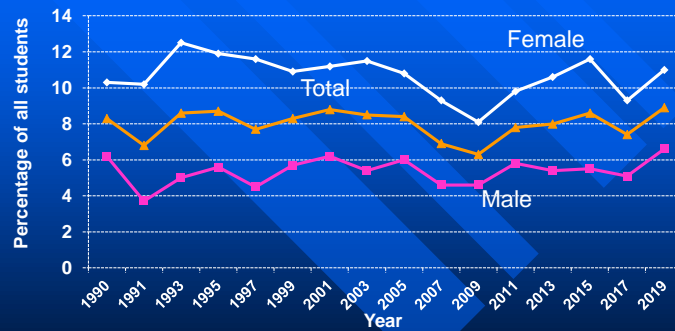Self-inflicted injury among all persons by age and sex--United States, 2018

Suicidal ideation and behavior among high school students by category and sex* -- U.S., 2019

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Percentage of high school students who report suicidal behavior* by sex – U.S., 1990-2019

Source: Youth Risk Behavior Surveillance System
*At least one attempt during the 12 months preceding the survey
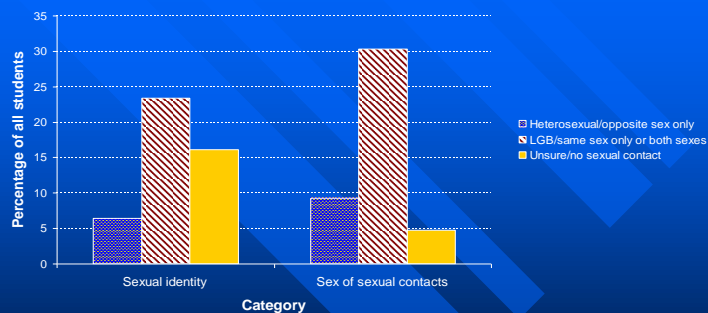
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Percentage of high school students who report suicidal behavior* by ethnicity, 1990-2019

Source: Youth Risk Behavior Surveillance System (YRBSS) & Bureau of Indian Affairs (BIA) YRBSS
*At least one attempt during the 12 months preceding the survey

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Suicidal behavior*^ among high school students by sexual identity# and sexual contact – U.S., 2019

Legend:
- Heterosexual/opposite sex only
- LGB/same sex only or both sexes
- Unsure/no sexual contact

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Suicidal behavior reported among those with specific learning disabilities (SLD) ^ – Canada*, 2012

Legend:
- No SLD
- SLD

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Public Health Approach to Suicide Prevention

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Who, what, where

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How to do it

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What works

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NATIONAL AND GLOBAL FACTORS

EXTERNAL INFLUENCES
-globalization of Western values
-regional and global economic integration

MACRO ENVIRONMENT OF THE COMMUNITY

CULTURAL FACTORS
-beliefs about suicide and the afterlife
-traditional norms of interpersonal relationships, of defining status

SOCIOPOLITICAL FACTORS
-means of production, distribution of wealth
-political structure, influence of the media
-community-level suicide prevention campaigns

LOCAL WORLD OF THE INDIVIDUAL

INTERPERSONAL NETWORKS
-relationships with family, friends, associates
-beliefs about suicide of intimate associates

SOCIOECONOMIC ENVIRONMENT
-access to social resources such as education, work, housing, health care, social welfare, etc.
-access to and effectiveness of suicide prevention and treatment services
-availability and lethality of means of suicide

FATAL and NONFATAL SUICIDAL BEHAVIOR

INDIVIDUAL CHARACTERISTICS

SOCIAL IDENTITY
-negotiated social status and social roles
-intersubjective legitimation/delegitimation

PERSONAL RESOURCES AND STRESSORS
-educational level, economic status
-life events, coping skills

BIOLOGICAL AND PSYCHOLOGICAL STATUS
-genetic factors, gender, age
-personality, level of life satisfaction
-physical and mental illness

Source: Phillips MR et al,
Culture, Medicine and Psychiatry, 1999

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Social-ecological model for addressing suicidal behavior

Societal | Community | Family/Peer | Individual

Examples – Societal
• Inappropriate access to lethal means
• Intergenerational trauma
• Geography
• Economy
• Cultural values

Examples – Community
• Spirituality
• Incarceration
• Reduce social isolation
• Enhance social support
• Reduce barriers to care

Examples – Family/Peer
• Family history of interpersonal or self-directed violence
• Exposure to violence
• Identify and assist persons at risk

Examples – Individual
• Age
• Sex
• Mental illness
• Substance misuse
• Stressful life events
• Increase Help-seeking
• Build Life Skills and Resilience

Source: World Health Organization. (2014). Preventing suicide: A global imperative.
https://www.who.int/mental_health/suicide-prevention/world_report_2014/en/

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Social Determinants of Health conceptual framework

SOCIOECONOMIC AND POLITAL CONTEXT

Governance
Macroeconomic Policies
Social Policies
Labor market, Housing, Land
Public Policies
Education, Health, Social Protection
Culture and Societal Values

Socioeconomic Position
Social Class Gender Ethnicity (racism)
Education
Occupation
Income

Social Cohesion and Social Capital

Material Circumstances (Living and Working Conditions, Food Availability, etc)
Behaviors and Biological Factors
Psychological Factors
Health System

Impact on equity in health and well-being

Structural Determinants
Social Determinants of Health Inequities

Intermediary Determinants
Social Determinants of Health

Source: Solar O, Irwin A. (2010). A conceptual framework for action on the social determinants of health. Social Determinants of Health Discussion Paper 2 (Policy and Practice). Geneva: WHO.

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Possible causes for inequities

- Socio-economic status
- Health insurance coverage
- Health status, disease severity
- Availability of services
- Discrimination
- System -level
- Provider-level
- Cultural perceptions
- System-level characteristics

Source: Woodward A, Kawachi I. Why reduce health inequalities? Journal of Epidemiology and Community Health. 2000; 54:923-9.
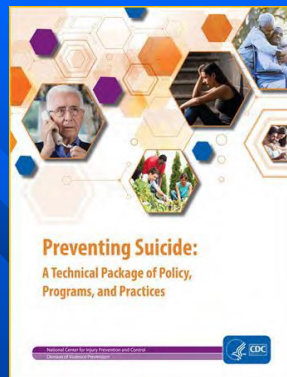
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Public Health Approach to Suicide Prevention

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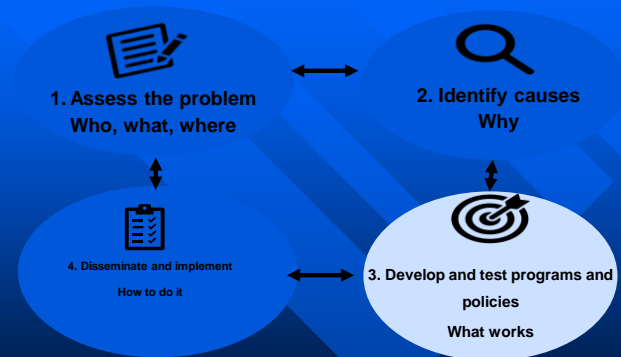
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CDC's Technical Packages

- Child Abuse and Neglect

- Sexual Violence

- Youth Violence

- Intimate Partner Violence

- Suicide Prevention

Preventing Suicide:
A Technical Package of Policy,
Programs, and Practices

http://www.cdc.gov/violenceprevention/pub/technical-packages.html

Source: Stone, D.M., Holland, K.M., Bartholow, B., Crosby, A.E., Davis, S., & Wilkins, N. (2017). Preventing Suicide: A Technical Package of Policy, Programs, and Practices. Atlanta, GA: National Center for Injury Prevention and Control, Centers for Disease Control and Prevention.
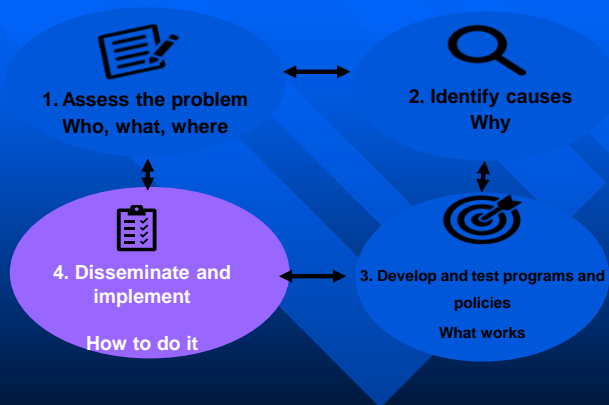
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Preventing Suicidal behavior Technical Package

Strategy	Approach
1. Strengthen economic supports	• Strengthen household financial security • Housing stabilization policies
2. Strengthen access and delivery of suicide care	• Coverage of mental health conditions in health insurance policies • Reduce provider shortages in underserved areas • Safer suicide care through systems change
3. Create protective environments	• Reduce access to lethal means among persons at-risk of suicide • Organizational policies and culture • Community-based policies to reduce excessive alcohol use

Source: Stone, D.M., Holland, K.M., Bartholow, B., Crosby, A.E., Davis, S., & Wilkins, N. (2017). Preventing Suicide: A Technical Package of Policy, Programs, and Practices. Atlanta, GA: National Center for Injury Prevention and Control, Centers for Disease Control and Prevention.

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Preventing Suicidal behavior Technical Package

Strategy	Approach
4. Promote connectedness	• Peer norm programs • Community engagement activities
5. Teach coping and problem-solving skills	• Social-emotional learning programs • Parenting skill and family relationship approaches
6. Identify and support people at risk	• Gatekeeper training • Crisis intervention • Treatment for people at-risk of suicide • Treatment to prevent re-attempts
7. Lessen harms and prevent future risk	• Postvention (i.e., activities which reduce risk and promote healing after a suicide death) • Safe reporting and messaging about suicide

Source: Stone, D.M., Holland, K.M., Bartholow, B., Crosby, A.E., Davis, S., & Wilkins, N. (2017). Preventing Suicide: A Technical Package of Policy, Programs, and Practices. Atlanta, GA: National Center for Injury Prevention and Control, Centers for Disease Control and Prevention.

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Categories of prevention programs

- Integrated/Comprehensive
  – U.N./W.H.O. recommendations

  – U.S. Air Force

- Comprehensive Approach
  – Multi-sectoral partnerships
  – Data-driven decision-making
  – Leveraging existing community resources/programs
  – Selecting strategies and approaches with the best available evidence
  – Effective communication with stakeholders
  – Rigorous evaluation
  – Continuous quality improvement
  – Sustainability

Source: Reducing Suicide: A National Imperative, 2002, Institute of Medicine and
www.cdc.gov/suicide/programs/csp

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Necessary Conditions for Policy Change

- Political will
- Knowledge base
- Social strategy

Source: Richmond, Kotelchuk, Handbook of Health Professions Education, 1983)

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National Strategy for Suicide Prevention (NSSP)

- 4 strategic directions; 13 goals; 60 objectives
- Objective
  - Address the needs of vulnerable groups, be tailored to the cultural and situational contexts in which they are offered, and seek to eliminate disparities

2012 National Strategy for Suicide Prevention: GOALS AND OBJECTIVES FOR ACTION

A report of the U.S. Surgeon General and of the National Action Alliance for Suicide Prevention
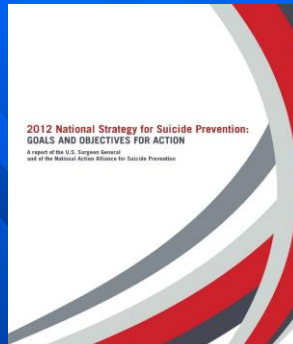
Source: U.S. Department of Health and Human Services (HHS) Office of the Surgeon General and National Action Alliance for Suicide Prevention. 2012 National Strategy for Suicide Prevention: Goals and Objectives for Action. Washington, DC: HHS, September 2012

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Healthy People 2010, 2020, and 2030

- Healthy People 2010
  - Goal - to eliminate, not just reduce, health disparities.
- Healthy People 2020
  - Goal was expanded even further: to achieve health equity, eliminate disparities, and improve the health of all groups
- Healthy People 2030
  - similar goals to HP 2020 "eliminate health disparities, achieve health equity, and attain health literacy to improve the health and well-being of all."

Healthy People 2030

Office of Disease Prevention and Health Promotion. (n.d.). Social determinants of health. Healthy People 2030. U.S. Department of Health and Human Services. https://health.gov/healthypeople/objectives-and-data/social-determinants-health

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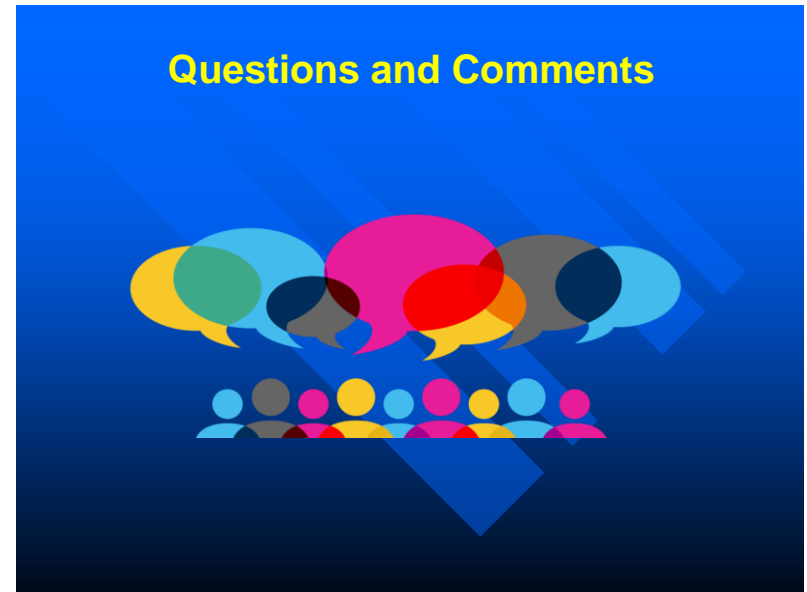VetoViolence.cdc.gov

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Conclusion

• Suicide is a significant public health problem

• Patterns have some similarities and differences between groups

• Risk and protective factors have similarities and differences

• Limited programs and policies developed for specific communities

• More information needed on patterns and prevention

• Broad responsibility for addressing the issue

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Questions and Comments

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