

Surveillance 101 - National Violent Death Reporting System (NVDRS) Summary and access to data

2018 GL Smith Memorial Act suicide prevention
Conference

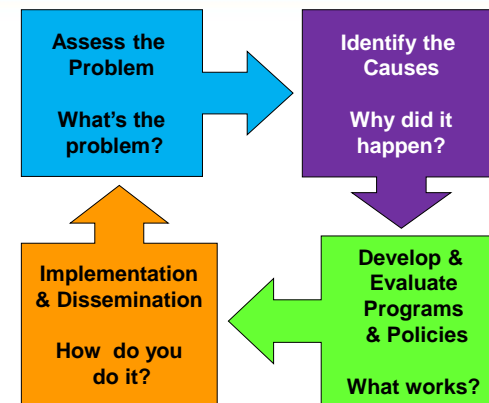
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U.S. Department of Health and Human Services
Centers for Disease Control and Prevention

The Public Health Approach to Prevention



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Why Is Surveillance Important?

- Collecting data is merely one step
- Critical goal is to control and/or prevent diseases or adverse health conditions
 - Any data collected must be organized and carefully examined
 - Any results need to be communicated to public health and medical communities

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Why Is Surveillance Important?

- Vital to communicate results
 - During potential outbreak so public health and medical communities can help with disease prevention and control efforts
 - During non-outbreak times to provide information about baseline levels of disease
 - Baseline provides information to public health officials monitoring health at community level, serves as reference in future outbreaks

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Surveillance

Information for Action

Uses of Public Health Surveillance

- Estimate the magnitude of illness
- Determine the geographic distribution of illness
- Detect epidemics
- Generate hypotheses to stimulate public health research
- Capture the natural history of a disease
- Evaluate control measures
- Detect changes in health/medical practices
- Facilitate public health resource planning

Source: Thacker and Stroup 1998, Public Health Surveillance and Health Services Research

History of NVDRS

1999: Institute of Medicine report cited the need for a national fatal intentional injury surveillance system

2000: National Violent Injury Statistics System (NVISS) piloted at 12 sites, mostly universities

2000: Meeting with Harvard and the Joyce Foundation to suggest that CDC direct a publicly funded system

2000: CDC begins planning

2002: First appropriation from Congress for NVDRS

2003: NVDRS data collection begins with six states

2004 - 2014: More states added

2016: Funding for additional expansion

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National Violent Death Reporting System

- **State-based surveillance system**
- **Funding began in 2002**
- **Now funded in 40 states, DC, and Puerto Rico**
- **Eventual expansion to 50 states**



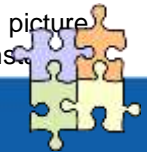
The Need for NVDRS

- Ongoing surveillance needed to monitor violent deaths and to support planning and evaluation for prevention
- Information on violent deaths contained in multiple sources
 - Death certificates
 - Coroner/medical examiner reports (including toxicology reports)
 - Law enforcement reports
- Information collected at state, county, and city level

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The Need for NVDRS

- Information not integrated, standardized, or focused on prevention
 - Suicide – Limited to counts and demographic descriptions
 - Homicide – Limited to law enforcement information or death certificates
- Results in incomplete and fragmented descriptions of violent deaths; we need the full picture
- NVDRS combines multiple sources to get the full picture (e.g., information about victims, suspects, circumstances)



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What is NVDRS?

- Active, ongoing state-based surveillance system
- Data collected by states through partnerships
- Information abstracted using a web-based application
- Provides comprehensive information on all violent deaths within participating states to fully characterize incidents



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Operational Definition for NVDRS Case Ascertainment

- Suicide
- Homicide
- Deaths of undetermined intent
- Unintentional firearm deaths
- Legal intervention (excluding executions)
- Deaths due to terrorism

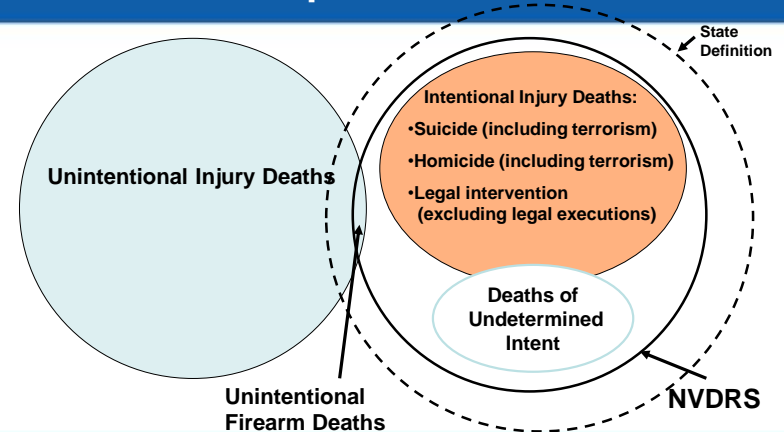
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Use of Definitions

- NVDRS case definition used to:
 - Collect manner of death information in a standardized way
 - Select cases for reporting at the national level
- States can use broader definitions to identify and collect non-NVDRS cases (e.g., unintentional drug overdoses)
 - Check “not an NVDRS case” in the Case Status field

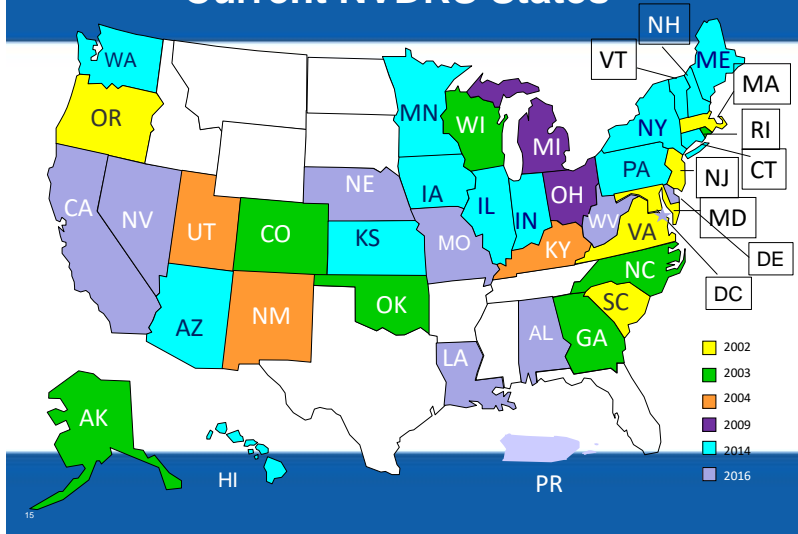
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Scope of NVDRS



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Current NVDRS States



NVDRS Data Uses

- Inform communities
 - Documents circumstances of all violent deaths
 - Who, what, when, and where?
 - Insight as to why
- Guide and target violence prevention programs, policies, and practices
 - Support planning and implementation of activities at the local, state, and federal levels
- Monitor and evaluate prevention programs and strategies



NVDRS - Linking Data to Save Lives

Primary required sources:

- Death certificates
- Coroner or medical examiner (CME) reports (including toxicology) (have narratives)
- Law enforcement (LE) reports (have narratives)

Secondary optional sources:

- Child Fatality Review (CFR) team data
- Intimate Partner Violence (IPV) Review team data
- Crime lab data
- Supplementary Homicide Report

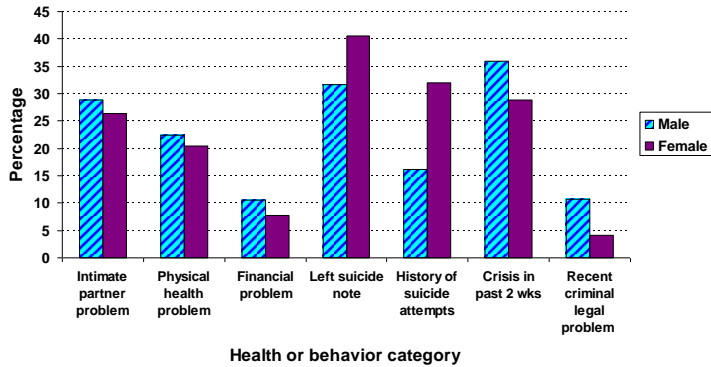


Suicide Variables*

- Current depressed mood
- Current mental health problem
- Other mental health diagnosis
- Current treatment for mental illness
- Ever treated for mental illness
- Alcohol problem
- Other substance problem
- Other addiction
- Job problem
- School problem
- Financial problem
- Anniversary of a traumatic event
- Person left a suicide note
- Disclosed intent to commit suicide
- History of suicide attempts
- Crisis in past 2 wks
- Physical health problem
- Intimate partner problem
- Other relationship problem
- Suicide of friend or family in past 5 years
- Other death of friend or family in past 5 years
- Recent criminal legal problem
- Eviction/loss of home

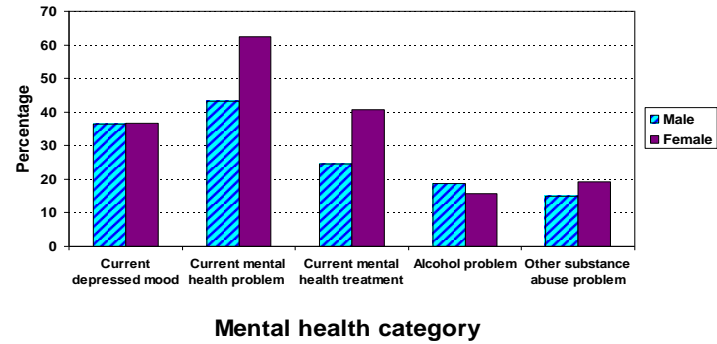
*Source: Nat'l Violent Death Reporting System

Health/Behavior information for suicide decedents by sex* - 18 states, 2014



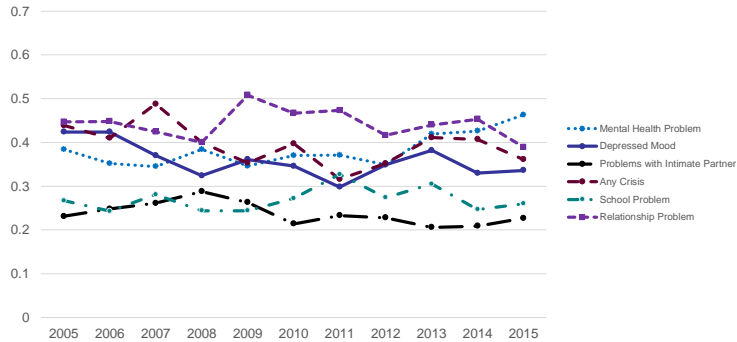
Source: Nat'l Violent Death Reporting Ssystem
 * Categories are not mutually exclusive
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Mental Health information for suicide decedents by sex* - 18 states, 2014



Source: Nat'l Violent Death Reporting System
 * Categories are not mutually exclusive
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Precipitating circumstances of suicide among persons aged 10-17 years – 16 states, United States, 2005-2015



Source: CDC's National Violent Death Reporting System
 17 states = AK, CA, CO, GA, KY, MD, MA, NJ, NC, NM, OK, OR, RI, SC, UT, VA, and WI
 * Includes those suicides with 1 or more precipitating circumstances
 Percentages may add to more than 100 since a suicide may have had >1 precipitating circumstance

Trends in precipitating circumstances among persons dying by suicide – U.S. 16 states

Suicide Circumstance	Annual percent of change (2005-2015)	Joinpoint Analysis (2005-2015)			
		Trend 1		Trend 2	
		Years	APC ^a	Years	APC ^a
Mental health problem	0.96 ^b				
Depressed mood	-1.38 ^b	2005-2007	-4.59	2007-2015	-0.9 ^b
Intimate partner problem	-1.01 ^b	2005-2013	-0.55	2013-2015	-4.12
Any crisis	0.75	2005-2011	-3.25	2011-2015	8.16 ^b
Physical health problem	0.41				
Hx of Suicide Attempts	-0.29				
Alcohol problem	0.06				
Substance abuse problem	1.04	2005-2010	-2.85	2010-2015	5.09 ^b
Job problem	-0.24	2005-2010	7.57 ^b	2010-2015	-7.48 ^b
Financial problem	-1.92	2005-2009	6.28 ^b	2009-2015	-6.32 ^b
Other relationship problem	0.94	2005-2009	12.18 ^b	2009-2015	-4.97 ^b

^a APC, annual percent of change.
^b The APC is statistically significantly different from 0 (P <0.05).

Military and Veteran Suicide Surveillance

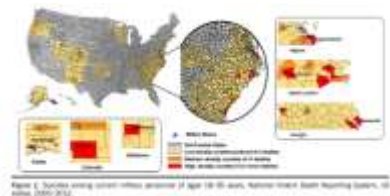
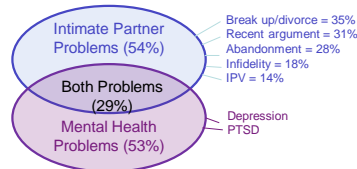
Findings and Impacts

- Intimate partner problems are just as important as mental health problems

Impact: Submitted DoD proposal to evaluate "Strength at Home" program re suicide-related outcomes

- Military /Veteran suicides mostly involve firearms and are highly concentrated in small % of counties

Impact: Informed 2017 DoD Safe Firearm Storage Policy



NVDRS: Future

- Promote expansion to all 50 states, the District of Columbia, and U.S. territories, funding permitting
- Enhance technical assistance to new and existing states
- Strengthen relationships with partners
- Improve system infrastructure
- Disseminate useful, actionable data

Accessing NVDRS Data

1. **Restricted Access Dataset**
2. CDC NVDRS WISQARS
 - Available online
<https://www.cdc.gov/injury/wisqars/nvdrs.html>
3. NVDRS Surveillance Summary
 - 2005 - 2013 data published in MMWR surveillance summary series: www.cdc.gov/mmwr
4. Collaboration with CDC scientists
5. Collaboration with state scientists

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NVDRS Restricted Access Dataset (RAD)

<http://www.cdc.gov/ViolencePrevention/NVDRS/RAD.htm>

- Case level data
- Restricted to PhD/MD level researchers and their research partners
- Application
 - Abstract
 - Primary investigators and partner affiliations
 - Study questions/hypotheses
 - PH benefit
 - Methods
 - Anticipated products/reports/manuscripts
 - Data security assurance
 - Variables

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NVDRS Restricted Access Dataset (RAD)

<http://www.cdc.gov/ViolencePrevention/NVDRS/RAD.html>

- Submit to CDC
- Reviewed by scientific approval committee
- Collaboration between CDC and applicant on questions
- CDC
 - develops file specifications
 - creates dataset
 - sends data set via FTP
- Email confirmation of receipt is requested
- Consultation with researcher if assistance is requested

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Web-Based Statistics



- www.cdc.gov/ncipc/wisqars/default.htm
- Injury mortality and leading cause of death statistics available by:
 - Intent, Method
 - Year
 - State
 - Demographics
 - Age, Sex, Race
- Injury morbidity
 - Hospital emergency dept events

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Data Limitations

- Toxicology testing is not done on all decedents
- Circumstances are not available for all cases
- Temporal pattern of circumstances not always clear
- Mental and physical health data not necessarily from medical records
- May be other circumstances not captured
- Not nationally representative

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Conclusion

- Assessment is a foundation for public health action
- Existing systems for assessing injury are useful but have limitations
- Need exists for improved and expanded surveillance systems regarding injury

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Acknowledgments

- **NVDRS Grantees**
- **Vital Statistics, Coroner/Medical Examiner and Law Enforcement staff in NVDRS States**
- **Surveillance Branch, Office of the Chief**
- **Mortality Surveillance Team**

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Thank You

For more information please contact
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Visit: www.cdc.gov | Contact CDC at: 1-800-CDC-INFO or www.cdc.gov/info



Questions and Comments



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