NATIONAL VIOLENT DEATH REPORTING SYSTEM (NVDRS) OVERVIEW

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PONCE RESEARCH INSTITUTE
NVDRS Vision:

Reduce and prevent the occurrence of violent deaths in the US through the provision of accurate, timely and comprehensive surveillance data.
NVDRS Goals:

- Collect and analyze timely, high-quality data for monitoring the magnitude and characteristics of violent deaths at the national, state, and local levels.

- Ensure that violent death data are **routinely and expeditiously disseminated** to public health officials, law enforcement officials, policy makers and the public.

- Provide data for developing, implementing and evaluating strategies, programs and policies designed to prevent violent deaths and injuries at the national, state and local levels.

- Build and strengthen partnerships with organizations and communities at the national, state, and local levels to ensure that data are collected and used to reduce and prevent violent deaths and injuries.
History of NVDRS: 1999

• Key stimulus: Institute of Medicine Report recommends the creation of a national fatal intentional injury surveillance system:

  “Develop a fatal intentional injury surveillance system, modeled after FARS, for all homicides and suicides; explore the feasibility of establishing such a system (by NCIPC, NCEH, and NCHS) as an extension of the medical examiner and coroner systems.”

• Early pilot: Six foundations pool private money to start the National Violent Injury Statistics System (NVISS) in academic test tubes

*FARS Fatal Analysis Reporting System- NHTSA
The History of NVDRS: 2000

- 2000 National Violent Injury Statistics System (NVISS) gets under way at 12 sites, mostly universities.
- 2000 Harvard and the Joyce Foundation convene an expert meeting that suggests the CDC direct a publicly funded system.
- 2000 CDC starts planning the development of NVDRS.
NVDRS Funding: 2002-2016

• Feb, 2002  Congress’s first appropriation ($1.5 million)

• Sept, 2002 CDC funds 6 of 17 applying: MA, MD, NJ, OR, SC, and VA

• Feb, 2003  Second appropriation ($1.5 million)

• Aug., 2003  CDC funds 7 of 16 applying: AK, CO, GA, NC, OK, RI, WI

• Feb, 2004  Third appropriation ($725,000 million)
NVDRS States (13) as of May, 2004
NVDRS Funding: 2002-2016

- 2004 CDC expands NVDRS to three additional states
- 2009 CDC expands NVDRS by funding two additional states, Michigan and Ohio (18 states)
- 2014 CDC expands NVDRS from 18 to 32 participating states ($7.5 million)
- 2016 CDC received funding to expand the system to a total of 42 states.
- Sept 2016 NVDRS starts in Puerto Rico!
NVDRS (42) States as of Sept, 2016
NVDRS Data Sources

**Primary Sources**
- Death Certificates (DC)
- Coroner/Medical Examiner (C/ME) Records
- Police Records (PR)
- Crime Lab Data (Lab)

**Secondary Sources (optional)**
- Child Fatality Review Team Data (CFR)
- Supplementary Homicide Reports (SHR)
- Hospital data (HOSP)
- Emergency Department Data (ED)
- Alcohol, Tobacco, Firearms and Explosives Trace Information on Firearms (ATF)
NVDRS PRIMARY DATA SOURCES

DEATH CERTIFICATE
- Age
- Gender
- Residence
- Marital status
- Profession
- Employment status
- Veteran status
- Cause of death
- Manner of death
- Time of death
- Pregnancy status

TOXICOLOGY
- Presence or absence of alcohol or drugs in victim(s)

MEDICAL EXAMINER/CORONER
- Brief narrative of incident
- Demographics
- Wound location
- Weapon information, patterns on victim
- Cause of death
- Manner of death
- Current disease/health condition
- Current/recent medical treatment
- Current medication
- Relationships among involved persons (if available)
- Circumstances relevant to death

LAW ENFORCEMENT
- Narrative on the circumstances of the death
- Wound locations
- Weapon information
- Relationships among victim, perpetrator, others involved
- Information on suspect(s)
- Potential evidence to substantiate/support conclusion about violent death type (suicide, homicide)
- Presence/absence of suicide note
- Interviews with any witnesses, family members, others
- Critical stressors in victim’s life

CRIME LAB
- Firearms involved
  - Type, make & model
  - Caliber or gauge
  - Serial number
  - Importer’s name & address

DATA ELEMENTS OVERLAP
Same information comes from several sources
NVDRS SECONDARY DATA SOURCES

DOMESTIC VIOLENCE FATALITY REVIEW
Information on current/former girlfriend, boyfriend, date, spouse
- Length of relationship
- Breakup/breakup in progress
- Court/prosecutor & restraining order records
- Domestic-violence related services (safety planning, shelter, lethality assessment)
- Perpetrator criminal history, charge/conviction
- # of children exposed to homicide

CHILD FATALITY REVIEW
Information on victim’s:
- Household
- Caregivers
- Supervision
- Previous contacts with child protective services
- Relationship with perpetrator
NVDRS collects data on all violent deaths

- Unintentional Injury Deaths
- Intentional / "Violent" Deaths
- Undetermined Intent Deaths

Unintentional Firearm Deaths
For NVDRS Surveillance Purposes, a Violent Death Is One Classified As:

- **Suicide** (including terrorism)
- **Homicide** (including terrorism)
- **Legal intervention** (excluding executions)
- Events of **undetermined intent**
- **Unintentional** firearm injury

**Excluded:** acts of war and legal executions

**Case Initiation:**
Abstractors initiate cases through analysis of the source specific manners of deaths, w/o ICD-10 codes.
Operational Definition: ICD-10 Codes that define NVDRS cases

<table>
<thead>
<tr>
<th>Manner of Death</th>
<th>Death &lt;1 year after injury</th>
<th>Death &gt;= year after injury</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intentional self harm</td>
<td>X60-X84</td>
<td>Y87.0</td>
</tr>
<tr>
<td>Assault</td>
<td>X85-X99, Y00-Y09</td>
<td>Y87.1</td>
</tr>
<tr>
<td>Undetermined intent</td>
<td>Y10-Y34</td>
<td>Y87.2, Y89.9</td>
</tr>
<tr>
<td>Unintentional firearm</td>
<td>W32-W34</td>
<td>Y86 (guns)</td>
</tr>
<tr>
<td>Legal intervention</td>
<td>Y35.0-Y35.7 except Y35.5</td>
<td>Y89.0</td>
</tr>
<tr>
<td>Terrorism</td>
<td>*U01, *U03</td>
<td>*U02</td>
</tr>
</tbody>
</table>

Excluded: acts of war and legal interventions
Flow of Information for NVDRS

Med. Exam/Coroner

Crime Lab

Law Enforcement (police reports) (SHR + NIBRS)

Vital Records (death certificates)

VDRS-PR (Instituto de Estadisticas)

Other

Completed Case

NVDRS CDC

Disseminate findings

Also to providers

Also to providers
What Data Are Collected?

Incident
(# of persons, mechanisms, PR/CME narratives)

Persons:
- Victims
- Alleged perpetrators

Victim-Perpetrator Relationships

Mechanisms
- Mechanism type
  - Firearm
  - Poisonings
  - Hanging, strangulation, suffocation

Person-Mechanism Relationships
- Person used this weapon to kill
- Weapon killed this person
- First purchaser

Victims:
- Demographics
- Other personal data (residence, marital status, pregnant, occupation)
- Injury event (location, county)
- Death (location, manner, cause)
- Related factors (toxicology)
- Circumstances:
  - Suicide/Undetermined deaths
  - Homicide
  - Unintentional firearms

Alleged perpetrators:
- Demographics

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CDC
WEB BASED NVDRS SOFTWARE (2013)
Relationships for NVDRS
Approach To Analyze NVDRS Data

Created 6 data analysis files based on six entities:

- Incident
- Person (Victims, Suspect/Victims, Suspects)
- Weapon
- Victim – Suspect Relationship
- Person – Weapon Relationship
- Document

All files includes linking variables
- Site ID, Incident ID, Person ID

Files can be combined/merged as needed
NVDRS Structure

**Incidents**
- State reporting incident
- Resident incident
- Incident type
- # of persons in incident
- # of weapons
- # of deaths
- # of suspects

**Deaths**
- Person type
- Demographics
- Pregnancy status
- Homeless status
- State reporting incident
- Type of location where injured
- Injured at home/work
- Manner of death
- ICD-10 manner of death
- 358/113/39 cause of death recode
- Person attempted suicide after incident
- History of abuse
- Caretaker of victim
- Victim to suspect relationship
- Weapon type
- Firearm type
- Poison type

**Suspects**
- State reporting incident
- Person type
- Record type
- Demographics
# NVDRS-Eligible Deaths in US in 2013

<table>
<thead>
<tr>
<th>Manner of death</th>
<th>N of cases (%)</th>
<th>Rate x 100,000 population</th>
</tr>
</thead>
<tbody>
<tr>
<td>Suicide</td>
<td>12,747 (66.2)</td>
<td>13.3</td>
</tr>
<tr>
<td>Homicide</td>
<td>4,459 (23.2)</td>
<td>4.6</td>
</tr>
<tr>
<td>Undetermined intent</td>
<td>1,698 (8.8)</td>
<td>1.8</td>
</tr>
<tr>
<td>Legal intervention††</td>
<td>222 (1.2)</td>
<td>0.2</td>
</tr>
<tr>
<td>Unintentional firearm</td>
<td>125 (&lt;1.0)</td>
<td>0.1</td>
</tr>
<tr>
<td>Total</td>
<td>19,251 (100)</td>
<td>20.1</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Method: Firearm</th>
<th>Male</th>
<th>Female</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>No. (%)</td>
<td>No. (%)</td>
<td>No. (%)</td>
</tr>
<tr>
<td>Suicide</td>
<td>5,619 (56.9%)</td>
<td>929 (32.4%)</td>
<td>6,548 (51.4%)§</td>
</tr>
<tr>
<td>Firearm</td>
<td>2,606 (71.8%)</td>
<td>513 (48.8%)</td>
<td>3,119 (66.6%)</td>
</tr>
</tbody>
</table>

§ Sex is unknown for two decedents; therefore, total is two greater than sum of males and females.
Involvement of Vital Records Office at the State Level

• South Carolina’s case initiation takes place in the vital statistics office by a full time staff person funded through the project.

• Maryland pays a clerk in the vital records office to pull all cases that meet the program case definition.

• Wisconsin pays the vital records office a yearly fee to run copies of all the records that meet the case definition.
What’s next for the NVDRS program?

• Expand the NVDRS system to all 50 states and the District of Columbia.

• NVDRS data can’t be generalized to national trends because data from the current 32 states aren’t nationally representative.

• Ensure NVDRS data support and translate into violence prevention activities by:
  • Increasing dissemination and use of NVDRS data at the national level.
  • Providing technical assistance to funded states to help them monitor and report their data.

• Link NVDRS data with even more data sources, like child fatality review reports and adult protective services reports.

• Improve the new web-based reporting platform to increase reporting efficiency, consistency, and security and decrease administrative costs.
Summary

• NVDRS improves quality and completeness of violent death data through the timely collection and aggregation of multi-source information.

• Data is available online to the general public through CDC’s web based injury statistics query and reporting system - WISQARS

Summary

• Major data management challenges:

  - Involvement of different agencies
  
  - Need a standardization of data element definitions across all agencies
  
  - Development of a data management model for the population-based violent death surveillance system
  
  - Development of a reliable violent death data source for the public health
  
  - To grow towards becoming a comprehensive public health measurement tool
Why VDRS  Puerto Rico?

<table>
<thead>
<tr>
<th>Incident</th>
<th>2011</th>
<th>2012</th>
<th>2013</th>
<th>2014</th>
<th>2015</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Homicides</td>
<td>1181</td>
<td>1019</td>
<td>924</td>
<td>707</td>
<td>614</td>
<td>4445</td>
</tr>
<tr>
<td>Suicides</td>
<td>325</td>
<td>316</td>
<td>316</td>
<td>245</td>
<td>227</td>
<td>1429</td>
</tr>
<tr>
<td>Total</td>
<td>1506</td>
<td>1335</td>
<td>1240</td>
<td>952</td>
<td>841</td>
<td>5874</td>
</tr>
</tbody>
</table>

**Homicide Rates**
- 2011: 62.1
- 2012: 53.3
- 2013: 50.3
- 2014: 38.4
- 2015: 33.5

**Suicide Rates**
- 2011: 14.9
- 2012: 14.7
- 2013: 15.0
- 2014: 11.8
- 2015: 11.9
Distribución de homicidios por año y género

12,733 hombres (93%)
984 mujeres (7%)
13,722 total
Tasas Anuales de Homicidios - Puerto Rico 2000-2015


Hombres:
- 2000: 36.0
- 2001: 39.7
- 2002: 40.8
- 2003: 40.7
- 2004: 41.5
- 2005: 40.5
- 2006: 39.1
- 2007: 38.5
- 2008: 42.7
- 2009: 47.5
- 2010: 54.3
- 2011: 62.1
- 2012: 53.3
- 2013: 50.3
- 2014: 38.4
- 2015: 33.5

Total:
- 2000: 19.3
- 2001: 20.9
- 2002: 21.3
- 2003: 21.1
- 2004: 21.7
- 2005: 21.1
- 2006: 19.9
- 2007: 19.8
- 2008: 22.1
- 2009: 24.2
- 2010: 27.8
- 2011: 32.0
- 2012: 27.8
- 2013: 25.6
- 2014: 19.9
- 2015: 17.1

Mujeres:
- 2000: 3.7
- 2001: 3.5
- 2002: 3.1
- 2003: 2.9
- 2004: 3.4
- 2005: 3.2
- 2006: 2.2
- 2007: 2.4
- 2008: 3.1
- 2009: 2.7
- 2010: 3.3
- 2011: 4.3
- 2012: 4.3
- 2013: 2.8
- 2014: 2.8
- 2015: 1.9
Mecanismo de homicidios por género. Puerto Rico 2000-2011

Hombres

- Arma de fuego: 89%
- Instrumento Cortante: 5%
- Otro: 6%

Mujeres

- Arma de fuego: 53%
- Instrumento Cortante: 24%
- Otro: 23%
Riesgo de muerte por homicidio
Hombres 15-39 años
Puerto Rico

2000: 1 en 54

2011: 1 en 29
Figure 5. Average lifetime cumulative risk of homicide death. Puerto Rico, 2001-2010

- 1.76-5.38 (1 in 57 to 1 in 19)
- 1.43-1.75 (1 in 70 to in 58)
- 0.82-1.26 (1 in 122 to 1 in 80)
- 0.40 - 0.81 (1 in 249 to 1 in 124)
- Cumulative risk not calculated (<20 cases in 10 years)
Homicidios en America Latina y el Caribe - 2012

- Honduras: 90.4
- Venezuela: 53.7
- Belize: 44.7
- El Salvador: 41.2
- Guatemala: 39.9
- Jamaica: 39.3
- Saint Kitts and Nevis: 33.6
- Colombia: 30.8
- Bahamas: 29.8
- Trinidad and Tobago: 28.3
- Puerto Rico: 26.5
- St. Vincent & the Grenadines: 25.6
- Brazil: 25.2
- Dominican Republic: 22.1
- Saint Lucia: 21.6

Tasa x 100,000 habitantes

source: UNODC Intentional Homicides, counts and rates per 100,000. Global Study on Homicides 2013.
source Puerto Rico: Instituto de Ciencias Forenses de Puerto Rico.
all other countries: UNDOC Intentional Homicides, counts and rates per 100,000. Global Study on Homicides 2013.
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El Contexto de la Violencia

“El marco conceptual (es decir, el modelo ecológico) para definir el contexto en el que la violencia afecta a los segmentos de la población en riesgo (es decir, los hombres jóvenes), requiere un enfoque transdisciplinario en el que un esfuerzo de colaboración entre el conocimiento académico y el conocimiento de la comunidad, de la dinámica de violencia en sus barrios contribuiría significativamente en el desarrollo de un cambio social para mejorar la salud de la comunidad, la potenciación de las comunidades en riesgo de violencia con la toma de decisiones participativa y la reducción de las disparidades de salud” -

Febrero 20, 2010

https://youtu.be/EKKN1hb8l-4
https://youtu.be/XEyJ5Byl8FY