

National Violent Death Reporting System (NVDRS) Best Practices in Medicolegal Data Collection

**Prepared by the National Association of Medical Examiners ad hoc Data Committee
September, 2014**

**This project was undertaken via CDC Contract Number 200-2013-M-57609 awarded to the
National Association of Medical Examiners on September 30, 2013.**

**The conclusions, recommendations, and opinions expressed in this document are those of the
authors and do not necessarily reflect the position of the Centers for Disease Control and
Prevention.**

NOTE: Best Practices are established goals for optimal performance. The ability to meet Best Practices varies because of differences in funding, personnel, other support, and perhaps even statutes, regulations, or policies. Best Practices should not be used as a practice standard nor should they be used as an alleged standard of performance in court or other legal proceedings.

Members of the National Association of Medical Examiners' ad hoc Data Committee who prepared this report include:

Randy Hanzlick, MD (Chair), Atlanta, GA
Christopher Boden, BS, Fort Lauderdale, FL
Steven Clark, PhD, Big Rapids, MI
Tracey Corey, MD, Louisville, KY
Karen Gunson, MD, Portland, OR
Kathryn Haden-Pinneri, MD, Houston, TX
Joseph Prahlow, MD, South Bend, IN
Erin Presnell, MD, Charleston, SC
Linda Szymanski, DO, Albuquerque, NM

Christopher Boden is a medical examiner office administrator. Doctor Clark is an occupational researcher. The remaining committee members are forensic pathologist medical examiners. Doctors Gunson, Corey, Hanzlick, Presnell, Clark, and Szymanski work in states which have violent death reporting systems. The other committee members work in states which lacked violent death reporting systems at the time of this project.

National Violent Death Reporting System (NVDRS)

Best Practices in Medicolegal Data Collection

Introduction

This report is the culmination of a one year project to produce best practices with the goal of improving medical examiner and coroner involvement with state violent death reporting systems operated in conjunction with the CDC's National Violent Death Reporting System (NVDRS). It is assumed that the reader of this document is familiar with the NVDRS system and its goals (1). The best practices are also intended to improve the scope, quality, and timeliness of data of interest to the NVDRS program.

In general, *Guidelines* are suggestions as to how a task might be performed but adhering to them is not required. *Standards* are things which must be done, often in a certain way, and are a minimum level of acceptable performance. *Best Practices* are a goal to plan for and eventually achieve, a level of performance that exceeds standards, and which can be attained with adequate funding and support. The Scientific Working Group for Medicolegal Death Investigation (SWGMDI) offers the following specific definitions:

- Standards are a minimum level of acceptable performance.
- Guidelines (or Principles) are a suggested level of performance, but not a standard.
- Best practices are the most rigorous level of performance and are based on current knowledge without resource limitations.

This document presents *Best Practices* in the context of the SWGMDI definition. The recommendations in this report are essentially goals for NVDRS performance in relation to medical examiners/coroners who are critical data providers for the NVDRS system.

This report contains two major sections:

- **Part I. Best Practices**, which are concisely presented and explained.
- **Part II. Methods and Results, Data, and Reference Materials**, which provide background information on how the Best Practices were developed, along with relevant items such as recommended data base structure.

National Violent Death Reporting System (NVDRS)

Best Practices in Medicolegal Data Collection

Table of Contents

PART I: BEST PRACTICES	5
Best Practices regarding medical examiners/coroners	6
Best Practices regarding data issues	11
Best Practices regarding funding and support	13
Best Practices regarding communication and cooperation	14
Best Practices regarding within-state program management	14
Best Practices regarding NVDRS policy and procedure	15
 PART II: Methods and Results, Data, and Reference Materials	 19
Methods and results for best practices development	20
Data elements	25
Database structure with explanations	29
References	35

National Violent Death Reporting System (NVDRS) Best Practices in Medicolegal Data Collection

Part I. Best Practices

Best Practices

The Best Practices are presented in the following categories:

- Medical Examiners and Coroners
- Data Issues
- Funding and Support
- Communication and Cooperation
- Within-State Program Management
- NVDRS Policy and Procedure

Medical Examiners and Coroners (MEC)

MEC1. Be aware of the NVDRS program and its goals.

Even if a medical examiner or coroner system is not participating in a state violent death reporting system, the number of participating jurisdictions in a given state and the number of states having such systems will probably increase. Knowledge of the system is important to planning for the future.

MEC2. Be aware of staffing requirements for each state-level violent death reporting system program.

It is important for medical examiner and coroner offices to recognize the staffing requirements "typically" considered mandatory for state level violent death reporting systems (VDRS). Although the actual job titles, job descriptions and performance tasks may vary from state to state, the job titles and position descriptions below should be considered representative of those found in NVDRS states. They are not inclusive or standardized.

There are five critical positions each state VDRS (regardless of size) should consider for adequate and successful participation in the NVDRS:

1. Principal Investigator (PI): This position occupies the top spot on the state's VDRS organizational chart. This individual serves as the primary contact for Program Managers at the CDC/NVDRS. Although some states provide the PI position "in-kind" or at minimal cost, the individual filling this role typically oversees funding and budget related issues. Depending on the number of violent deaths processed by the state (i.e., size of state or jurisdiction(s) involved in the state's program), it is not uncommon for this position to be combined with the Program Manager position.

2. Program Manager (PM): This position reports to the PI and may be referred to as the Program Director, Project Manager, etc. depending on the allowable job titles/positions within a specific state's government. The individual holding this position is typically responsible for managing the day-to-day activities of the state's VDRS. The PM is the primary contact for communications with the VDRS staff as well as the primary data providers. This individual must understand the role of the medical examiner/coroner office in the investigation of violent death. It is considered important for the PM to have a working knowledge of any standards of practice or office accreditation requirements that may govern data availability and sharing. At a minimum, the PM must understand the data abstraction

process and, in some states, may actually perform data abstraction as a part of their VDRS job responsibilities.

3. Epidemiologist: The VDRS epidemiologist is important from the CDC/NVDRS perspective, specifically for those public health goals considered hallmarks of the NVDRS program. This individual may be employed by the state department of public health as an epidemiologist assigned to the project or hired as a contractor specifically for a state's VDRS. This individual typically performs data compilations and analysis to generate reports for the state's VDRS. This individual may interact with other state and local agencies (including ME/C offices) who utilize violent death statistics for surveillance and the identification of trends affecting their programs and constituents. The VDRS epidemiologist may also design studies, and write articles and research reports for publication.

4. Data Abstractor: The individual(s) hired as state level VDRS data abstractors work directly with violent death case data, narrative descriptions and reports obtained from the primary data providers which include medical examiner/coroners, law enforcement agencies, crime labs, and death certificates. Data abstractors are trained using NVDRS materials and enter required information directly into the web-based NVDRS. Knowledge of medicolegal death investigation (ME/C and law enforcement) systems and terminology is desirable as these individuals may follow-up on missing or confusing case report data by interacting directly with field investigators. Knowledge of the data collected for certifying death (i.e., death certificates) is helpful. These positions may be shared by multiple people, full or part-time, depending on the projected number of violent death cases a state has during the funding year(s).

5. Contractual Staff: Depending on the organization receiving the NVDRS contract (State Department of Public Health or their bona fide agent), the number of contractual staff may vary considerably. It is not uncommon to find public health departments understaffed and unable to distribute NVDRS tasks to current employees, or find government hiring practices too restrictive to allow hiring staff in a timely manner. The PI and PM positions are typically retained by the state department of health to ensure reporting consistency with the CDC procurement and grants office (PGO) and NVDRS program managers and staff.

NOTE: The state department of public health's ability to budget for contractual staff should be considered by ME/C offices when discussing NVDRS collaborations with public health officials. All state level VDRS positions including data abstractors, epidemiologists, administrative and management support (e.g., local data collection, IT support, etc.) may be contracted. ME/C offices may have the ability to utilize fellows, interns, and possibly an investigative staff member on light-duty to perform NVDRS data collection and abstraction duties. In addition, many ME/C offices utilize part-time investigators as a normal part of their business model and adding additional hours for these individuals can be done without significant time delay. Repurposing a current ME/C investigator or investigative support employee to meet NVDRS needs can be accomplished in hours, rather than months. These factors make the ME/C office an attractive partner for supporting NVDRS goals.

The functional roles and responsibilities performed by state level VDRS staff should be understood by the ME/C office wishing to participate in the program. This gives ME/C offices the opportunity to offer assistance to public health departments as they attempt to adequately staff the project. ME/C offices may be able to identify office personnel who possess specific skills and knowledge required by the NVDRS program and offer state public health leadership staffing options that fulfill their needs and require little or minimal training (e.g., data abstractors, local liaisons, etc.).

MEC3. Be familiar with the data elements desired by the NVDRS.

Medical examiner and coroner office case management systems will probably improve in scope of data collection and processing with time. Being aware of the NVDRS data elements can be helpful when case management systems are being developed or modified. Such databases can be designed or modified with the future in mind.

MEC4. Understand the types of violent death of interest to the state VDRS program and NVDRS.

In general, these deaths include homicides, suicides, unintentional (accidental) firearms deaths, and deaths of undetermined intent involving firearms. Optional data elements have been developed for cases involving sudden unexpected infant deaths (SUID) and intimate partner violence. States should be aware that these case types may become required by the NVDRS in the future. In some state VDRS programs, deaths caused by drugs (prescription, illicit, over the counter) are also collected. It may be advisable to plan for reporting of all non-natural deaths to the violent death reporting system in the future.

MEC5. Be involved with the state violent death reporting system (VDRS) if one exists.

This is easier in some states than others. States having a State Medical Examiner will have an easier time because in most such states, case data is available in one centralized database. For coroner or medical examiner states lacking a State Medical Examiner, it may be advisable to work with the state coroner or medical examiner association if one exists. Having that association develop state-wide plans for its member offices in conjunction with the state violent death reporting system may make participation more structured and intrastate communication less fragmented.

MEC6. Develop and implement an electronic case management system if one does not exist in or for your jurisdiction.

An electronic case management system can be a valuable asset in preparing reports for the office's funding entity, responding to public and media inquiries, and reporting of information to a variety of interested agencies. Use for violent death reporting systems is just one application. Further, electronic databases facilitate the ability to maintain permanent information within an office or jurisdiction if leadership or location of the office changes, such as when a coroner leaves office and someone else takes his/her place. It also facilitates the ability to have backup copies of case information if traditional paper files are lost/destroyed or if the primary data system fails.

MEC7. Obtain funds or services to convert electronic data in the office's case management system into a format directly importable into the NVDRS system.

The ability to upload electronic data directly into the NVDRS system reduces the time required of abstractors to manually enter data into the NVDRS system. Cases can be processed more expediently and efficiently.

MEC8. Read reports of violent deaths produced by the state VDRS and NVDRS programs.

Reading such reports will provide more accurate representation of violent deaths within the state and nationally, and insight as to why certain prevention strategies are needed or developed for public health and safety purposes. Understanding how VDRS data are used will increase awareness of the value of VDRS data which will lead to increased participation in VDRS programs. In addition, it may be advisable to read the most recent Funding Opportunity Announcement (FOA) released by the Centers for Disease Control and Prevention (CDC) regarding the NVDRS program. The contents of this document outline the NVDRS data requirements and timelines for all funded states. NOTE: archived versions may not be available on-line so ME/C offices may need to contact their state health department for the last published version.

MEC9. Designate a person in the ME/C office to work with, or be a liaison to the state VDRS program.

Even if the state's VDRS program is already organized such that data are provided by a state or regional medical examiner's office, it is important to keep up with how the system is working and what changes may be needed. Having an office liaison can be helpful in this regard. Each funded NVDRS state is required to assemble and maintain a VDRS advisory committee. Having a person from the ME/C office represented on this state-level committee may help support issues specific to the collection of data from the ME/C office and further develop relationships with other agencies involved in violent death investigation and reporting (law enforcement, vital statistics, child death review, elder death review, gun safety programs, etc.).

MEC10. Recognize the importance of medical examiner/coroner data for public health epidemiology and surveillance purposes.

Previous reports have discussed the role and use of medical examiner/coroner data for such purposes (2-3).

MEC11. Recognize the contribution ME/C offices make to the achievement of state VDRS program goals and the value of ME/C participation in both program planning and budget development. Insist on the ME/C office being compensated for its contribution/involvement in the VDRS program.

Without medical examiner/coroner data, the VDRS could not operate, or, its effectiveness would be severely hampered. It takes time, effort, and money to effectively provide and validate data for VDRS purposes. ME/C staffing for case abstraction and the performance of quality assurance tasks for ME/C office data should be considered essential to participation in a state VDRS and persons providing such staffing may be able to perform other public health functions for the office as well. A formal plan should be developed to describe this effort, including the ME/C role in completing the data collection, data abstraction and entry into the NVDRS data system. This plan should also include any necessary compensation required to support ME/C office involvement, which may be in the form of money, equipment, and providing of a case management system suitable for both office and VDRS purposes.

MEC12. Construct or modify the ME/C case management database so it is consistent with the principles outlined in the "Data" section of this Best Practices Guide.

The "Data" section of this Guide provides flexibility in the way a case management database may be designed. The key is that the database contains data and descriptive information of interest to the VDRS program, in electronic format. The format of the data (database structure) is less important.

MEC13. All medical examiner/coroner case data for NVDRS cases for a given calendar year should be made available to the state VDRS program within 6 months or less of the end of the calendar year.

Failure to achieve this benchmark of timely submission will compromise the accuracy of data summary reports. Even in jurisdictions with long toxicology turnaround times, nearly all cases should be amenable to completion within 6 months, with rare exceptions. NAME inspection and accreditation requires that 90% of all cases be completed within 90 days, preferably within 60 days. NOTE: Although NVDRS does not currently require its funded states to provide data within this timeframe, they are gradually reducing the amount of time states have to collect and abstract data into their system. It should be considered a Best Practice for ME/C offices to have their data available and ready for abstraction within 6 months of the date of postmortem examination.

MEC14. Report all medical examiner/coroner case data to the state VDRS program at least quarterly.

Reporting data quarterly will spread-out the need for data abstraction and will avoid a sudden backlog of work. Cases can be reported by the date they are completed, rather than the date they occurred, because case information includes the date of the incident. Cases can be placed in order, if needed, at a later time during data management and analysis when the cases that were “on hold” or pending during a given reporting period are eventually completed and reported.

MEC15. To the extent possible, follow the NAME Guide for Manner of Death Classification.

Manner of death classifications vary from place to place based on local custom, the death certifier’s training, and different philosophies of certifiers. To promote more uniformity, the National Association of Medical Examiners has developed a *Guide for Manner of Death Classification* (4). To the extent possible, manner of death classifications should be completed in a fashion consistent with the principles of the guide. Doing so will reduce case classification issues.

MEC16. Place a public health worker in the medical examiner/coroner office.

A person such as an epidemiologist could abstract data directly from the office’s case management system and/or other records, reducing the need to transmit data via the internet or portable computer drives or data disks, which could cause a security risk or accidental disclosure of private information to unauthorized users. This person could also perform other public health functions in the office such as reporting notifiable diseases and coordinating inter-agency cooperation regarding deaths of public health importance. Such a person should be funded via the health department, and should be supervised by the medical examiner through a memorandum of understanding or similar document.

MEC17. Ensure that State Medical Examiners are given the opportunity to be the de facto agent in operating and managing the state’s VDRS system.

At present, the CDC provides funding to states and U.S. territories for their NVDRS program. Traditionally, funding for state VDRS programs has been delivered through state health departments. State Medical Examiners should work with their state health department to ensure, if the State Medical Examiner desires, that the VDRS system be operated under the authority and supervision of the State Medical Examiner. Preferably, State Medical Examiners should be eligible to directly compete for NVDRS funds. This same principle can apply to well-defined regional or county medical examiner offices, either in states with or without a State Medical Examiner, but with State Medical Examiner approval in

applicable states. Care must be taken to guarantee that programs run via medical examiner offices are funded and staffed such that the basic functions of the medical examiner's office are not compromised.

Data Issues (D)

D1. Ensure that the ME/C case management database includes the data elements identified in the tables and data base descriptions contained in Part II of this Guide.

The more that specific data items can be contained in individual fields, the easier it will be to import data into the VDRS system or to extract data for input into the system. Some data items are easily managed, such as gender, age, race, date of fatal incident, etc., because these items are amenable to having their own specific data fields. Other items are more complex. For example, there is a data item for whether the victim was currently being treated for mental illness. Although a Yes/No/Unknown checkbox might be applicable, that provides no information about the nature of the mental illness or its treatment. It would be unreasonable to use a checklist of potential mental illnesses and have the ME/C office check Yes/No/Unknown for each of them. Many other data items pose similar problems. It would make more sense in such cases to include the information in narrative text form within the narrative descriptions of the case circumstances and background history, which then allows the VDRS case abstractors to cull the needed information. Thus, it is more important to capture information electronically than it is to have data in a complex, many fielded database. For example, there might be ONE narrative field designed to document medical history, and that field could contain information, via office policy, for known medical conditions, known medications, psychiatric history, social/sexual orientation history, and similar related data items.

D2. Consult with the state VDRS program to determine which data format is most suitable for VDRS purposes.

Although each state enters information into the same national NVDRS database, the state VDRS program may do initial data processing using a format of its own. Knowing the state's format would be informative to medical examiner/coroner offices and how they develop their own databases.

D3. Ensure that the data format of the ME/C case management database allows for data to be exported in a commonly used format such as Excel, delimited text, or other format that is more easily imported into other programs, and that the format is consistent with that designated as preferable by the state VDRS program.

Even if the above data formats are not the ones preferable for the NVDRS program, the ability to convert data to these formats enables medical examiner/coroner data to be shared more readily with other agencies and programs. NVDRS data categories (e.g., column headers) and the corresponding elements (e.g., drop-down choices) must be shared with not only software developers, but all ME/C offices, vital records and the state VDRS advisory committee. It is not uncommon for multiple ME/C offices to have various descriptions for what is generally considered to be the "same thing." These inconsistencies greatly increase data collection and verification times and contribute to data reliability concerns. In addition, case abstraction time is significantly increased if individual abstractors must follow-up directly with data providers every time there is a mismatch or misalignment in data fields. The

list of ME/C data elements should be published in advance. ME/C offices should be informed at least 90 days before data collection is scheduled to allow offices to create custom data exports as necessary to meet NVDRS data requirements.

D4. Ensure that the ME/C case management system can be programmed for querying and generating reports with minimal reliance upon the software vendor and at minimal or no expense.

Nothing is more frustrating than entering data into an electronic database but not being able to manage and manipulate it as needed. Database modifications can be expensive when vendors are involved, and one cannot predict in advance the scope and level of inquiry individual agencies and programs may require regarding data reports. . The ability to write query programs “on the spot” should be included.

D5. Recognize that there are ME/C case management data systems which are available on-line at reasonable cost, which can be queried and generate reports, and that the data need not necessarily reside in the ME/C office.

Some on-line medical examiner/coroner case management systems are available at reasonable cost. For offices which lack an adequate case management system, this option can be a good one for implementing a system quickly. They also allow data entry from multiple offices as might occur with regional centers, or in states which have separate death investigation systems in each county. It is a suitable way to get data into a single data format and database.

NVDRS encourages its partners to prioritize data collection by focusing on the largest jurisdictions (i.e., those counties with the largest numbers of reported violent deaths). State VDRS offices should poll the largest jurisdictions and determine which case management software is being used (if any). As stated earlier , offices may need to communicate with their county’s technology provider (internal or external) to ensure data availability and formatting. It is not uncommon for the available data elements and options present in the ME/C case management software to misalign with NVDRS data elements and options. These issues can oftentimes be reconciled if they are known in advance.

NOTE: Although the ME/C office should be considered the primary source for the majority of the NVDRS data requirements, law enforcement and the vital statistics office also provide significantly to the program. It should be expected that some NVDRS data requirements will not be available in any ME/C database. However, communication with ME/C offices will avoid assumptions over data sharing issues (e.g., some ME/C offices may have “copies” of law enforcement reports, but are unable to share them).

D6. Transfer all data to the state VDRS system in electronic format.

This does not mean that all data need to be in a single database or single data format. For example, it would be acceptable for offices to send relevant fields from the office’s case management system augmented by word processing documents which include narrative descriptions, case follow up information, autopsy reports, etc. This will preclude in many instances the data abstractor from having to travel to obtain data, or to go through paper records. They could abstract the data from the electronic files provided by the medical examiner/coroner.

D7. Do not use death certificates as the starting point to find NVDRS cases.

Notification of VDRS cases should come from the medical examiner/coroner office. They have the needed data prior to the time the death certificate will be completed and filed. A notification protocol

(phone/fax/email) and standard data set to be transferred should be established with the ME/C office(s). Although this data will probably not be enough to fully abstract a case, it will allow project abstractor(s) to initiate the case in the NVDRS and create their own “queue” for follow-up. This will reduce delays and help ensure case data are not “lost” between agencies.

D8. When possible, combine an Electronic Death Registration System (EDRS) with the NVDRS system.

The death certificate contains many data items which are of interest to the NVDRS program. There should be no need to duplicate data entry. In places which have an EDRS system, data from that system should be importable into the state’s VDRS program (and into NVDRS).

D9. Expand the NVDRS system to include information for all non-natural deaths.

In loose terms, ME/Cs often construe “violent” deaths as including all deaths resulting from external (non-natural) causes. They investigate these deaths and have useful data regarding them. Although the NVDRS focuses on firearms-related deaths, other “violent” deaths such as drug overdoses, traffic fatalities, and work-related accidents are also very common and analysis of such deaths may provide strategies for prevention.

Funding and Support (FS)

FS1. Fund the program to ensure adequate number and quality of data abstractors.

Failure to meet this goal will compromise the timeliness, if not quality, of data. Timeliness of data summaries is a primary goal of NVDRS. With regards to data capture and timeliness, the most “successful” NVDRS states are those with a state medical examiner’s office (NVDRS, 2014). Many of the advantages for data collection in a centralized office are obvious. However, what is oftentimes overlooked is the skill and knowledge a current or past ME/C office employee or associate adds to data abstraction quality and timeliness. Understanding the role of the ME/C office, including its data controls and locations within a jurisdiction or facility, is critical to the success of these programs. If possible, ME/C offices should offer state VDRS program leadership the option of personnel collaborations that will increase data collection efficiency, while decreasing the time and logistic planning necessary to train a “new” team member.

FS2. Provide funding for education of ME/C offices.

A system is only as good as the people that use it. Uneducated persons will not enter the data correctly, nor appreciate the significance this data collection could have. Education and training could take place in the form of webinars or video conferences

FS3. Provide funding and support to ME/C offices for their participation in the violent death reporting program.

The violent death reporting system could not exist without participation of medical examiners and coroners and the data they collect and provide. Providing data desired by NVDRS often causes medical examiners and coroners to go beyond their routine statutory investigative and data collection

procedures. Additional staff time is often required specifically to address NVDRS needs. Funding for such staffing must be provided.

Communication and Cooperation (CC)

CC1. Complete state VDRS program data summaries yearly, and within one year of a given calendar year's close.

Current report turnaround times are too long, making data less timely and relevant. It is understandable that multi-year reports are appropriate, but standard reports should be prepared annually.

CC2. State reports of data should follow a standard format defined by the NVDRS, allowing for modifications and additions relevant to the state.

This is analogous to the US Standard Certificate of Death. State death certificates are quite similar, although there is room for states to make minor modifications. State VDRS offices should model the annual report produced by the CDC NVDRS office in Atlanta.

CC3. Appoint a liaison/contact for each state to oversee the data collection, prepare reports when needed, and communicate with other state liaisons to improve the system.

A single contact point for each state could be beneficial - especially for large states - and could/should teleconference with other state liaisons regularly on any current trends. Yearly evaluations of the data may be too long to wait for preventative measures to be implemented or evaluated. State VDRS programs have a Principal Investigator and Program Manager, but such persons often have other duties which detract from their NVDRS duties, so the PI and/or MP may not be able to fill this role.

CC4. Enact Memorandums of Understanding (MOU's) between ME/C offices and law enforcement agencies to ensure that law enforcement information is available for the duration of the NVDRS funding cycle.

Law enforcement leadership is subject to frequent changes, and an MOU can be helpful to ensure that law enforcement information remains available if leadership changes. ME/C offices can leverage existing relationships with LE agencies to access data for NVDRS purposes. This may represent the most efficient method for obtaining LE agency cooperation and participation in NVDRS data collection, as most LE agencies have little or no day-to-day relationship with public health.

Within-State Program Management (PM)

PM1. Ensure that state VDRS program management includes representatives from any of the following which exist in the state: State medical examiner, regional medical examiners, state coroner and/or medical examiner associations, local medical examiners and coroners.

This is critical to guide policy and procedure development and to address issues related to data acquisition or quality problems. It also fosters buy-in and participation in the system.

PM2. In states having a State Medical Examiner, the VDRS program should be managed or co-managed from within the state medical examiner's office by the state medical examiner or designate, if so desired by the state medical examiner.

Collaboration between the State Medical Examiner's office and the state Department of Health is critical to the success of any state VDRS program. It may be in the best interest of the program to locate the state VDRS project within the State Medical Examiner's office or at least have state VDRS staff housed at the ME office.

In states with a state medical examiner system, NVDRS Policy should be that the State Medical Examiner Office is the defacto agent in that state. If the Medical Examiner's Office elects NOT to be the agent, the Medical Examiner Office should be asked to suggest other agencies with which a collaborative effort may be established.

NOTE: There are multiple management sharing options that should be considered. Some State Medical Examiner offices cannot support, or do not wish to support, the administrative overhead associated with federal projects (reports, funding, budget allocations, initiating contracts, etc.) and want the state public health agency to serve as the fiscal agent. One possible option would be to have the State Medical Examiner serve as the principal investigator (PI) or as the co-PI. Although it may seem advantageous for the State Medical Examiner to "run" the program, shared governance may be best in some settings.

PM3. Be able to import electronic medical examiner/coroner data directly into the NVDRS system.

Funds and personnel should be allocated to write data conversion programs. A contractor might be able to provide such services to multiple states.

PM4. Place a public health worker in the medical examiner/coroner office.

Such a person could abstract data directly from the office's case management system and/or other records, reducing the need to transmit data which could cause a security risk or violation of privacy. This person could also perform other public health functions in the office such as reporting notifiable diseases and coordinating inter-agency cooperation regarding deaths of public health importance. Such a person should be funded via the health department, and should be supervised by the medical examiner through a memorandum of understanding or similar document.

NVDRS Policy and Procedure (NVDRS)

NVDRS1. Do not expand the NVDRS into additional states until all currently funded states are optimally functioning.

Many states are not adequately funded to have an optimal NVDRS system, although some states do seem to function optimally. Rather than creating more under-funded programs, existing programs which function sub-optimally should be better funded and improved. Doing such will provide programs from which the true benefits and drawbacks of the system can be defined in terms of cost-effectiveness.

NVDRS2. If NVDRS receives additional funds, they should be spent in existing NVDRS states to bring those states to optimal function.

Rather than creating more under-funded programs, existing programs should be better funded and improved. Doing this will provide the needed feedback for program improvement and expansion. Identifying the true benefits and drawbacks of the current state VDRS configurations can be reviewed and defined in terms of cost-effectiveness.

NVDRS3. NVDRS funds should be restricted to states with a state medical examiner system or states with strong regional or county medical examiner/coroner offices which can ensure 100% capture of reportable cases.

With incomplete data, trends in a state may not be adequately or accurately reported. NVDRS data should be based on 100% capture of reportable cases, not on a “sample”.

NVDRS4. Recognize that medical examiner/coroner data are the primary data used by NVDRS, are the most critical data in terms of success of the NVDRS system, and that adequate funding/compensation to participating medical examiner and coroner systems is necessary to obtain this crucial data.

The violent death reporting system could not exist without participation of medical examiners and coroners and the data they collect and provide. Providing data desired by NVDRS often causes medical examiners and coroners to go beyond their routine investigative and data collection procedures, and staff time is often required specifically to address NVDRS needs.

NVDRS5. Provide funds or service to states to enable the importing of electronic medical examiner/coroner data directly into the NVDRS system.

Funds and/or services should be provided to states to write data conversion programs. A contractor might be able to provide such services to multiple states or jurisdictions within a state.

NVDRS6. In states with a state medical examiner system, NVDRS Policy should be that the State Medical Examiner Office is given the option of being the defacto agent in that state. If the Medical Examiner's Office elects NOT to be the agent, the Medical Examiner Office should be asked to suggest other agencies with which a collaborative effort may be established.

The ability and staffing of State Medical Examiner offices vary and, logically, so would their ability to be the de facto agent or principal investigator (PI) or program manager (PM). It is appropriate, however, to give the State Medical Examiner first option in decision making about this issue.

NVDRS7. Provide funds to place a public health worker in the medical examiner/coroner office.

Such a person could abstract data directly from the office’s case management system and/or other records, reducing the need to transmit data which could cause a security risk or violation of privacy. This person could also perform other public health functions in the office such as reporting notifiable diseases and coordinating inter-agency cooperation regarding deaths of public health importance. Such a person should be funded via the health department.

NVDRS8. Require NVDRS cases to include ALL deaths due to external causes (non-natural deaths), and deaths of undetermined manner.

Because of variations in manner of death classification among jurisdictions, deaths that should be reported to NVDRS could be erroneously excluded from analysis. For example, a suicide may be misclassified as an accident or as undetermined manner. Reporting all cases would facilitate analysis of such cases. Further, all drug-caused deaths would be included. In loose terms, ME/Cs often construe “violent” deaths as including all deaths resulting from external (non-natural) causes. They investigate these deaths and have useful data regarding them. Although the NVDRS focuses on firearms-related deaths, other “violent” deaths such as drug overdoses, traffic fatalities, and work-related accidents are also very common and analysis of such deaths may provide strategies for prevention.

NVDRS9. Shorten the time deadline for states to enter data into NVDRS.

The 2014 Funding Opportunity Announcement (FOA) for the NVDRS program indicates that even in the future, in 2019, states will have 15 months from the close of a calendar year to get data entered into the NVDRS program. This prolonged deadline builds immediate delays into the turnaround time required to produce NVDRS data summaries. The target date for entering data into NVDRS should be no more than 6 months. Most jurisdictions should be able to meet that goal, especially if data are reported quarterly and within six months of the date of postmortem examination.

NVDRS10. Publish the attributes of the “top performing” NVDRS states.

Publishing the characteristics of the top performing NVDRS states will give other states something to emulate, and provide ideas for system improvements in states which could function better than they do now.

NVDRS11. Do not expect medical examiners and coroners to provide extensive electronic data with hundreds of fields (data elements), each of which contains a single piece of information.

The NVDRS Coding Manual contains more than 300 data elements for which individual data entry is expected. Many of these data elements apply to medical examiner and coroner data. It is not realistic or appropriate for the NVDRS system to expect medical examiners and coroners to collect information in such an individual data element format to “spoon feed” data into the NVDRS program. Rather, medical examiners and coroners can provide relevant information in narrative text fields from which data can be derived by abstractors. As an example, medical examiners and coroners should not be expected to enter wound information into specific database fields. Rather, an autopsy report can be provided to NVDRS personnel who can then extract the necessary wound information.

NVDRS12. Make publically available on the CDC’s NVDRS website the currently used version of the NVDRS coding manual, any reports which evaluate the status, needs, and effectiveness of the NVDRS system, and all state and federal reports which have been prepared based on state VDRS or NVDRS data.

Presently, reports which evaluate the effectiveness and needs of the NVDRS system are not necessarily public and the currently used NVDRS coding manual is not available to the public on-line. Various reports based on state violent death data or national NVDRS data are not contained in one place for

easy access. All of these items should be available to the public and especially to those who are participating in NVDRS or may be planning to participate. Access to reports is critical to maintaining interest in the NVDRS system.

June 12 Draft

National Violent Death Reporting System (NVDRS) Best Practices in Medicolegal Data Collection

Part II. Methods and Results, Data, and Reference Materials

Methods and Results for Best Practices Development

Introduction

The National Violent Death Reporting System is a CDC-funded program to study state-specific violent deaths and to work toward prevention strategies. Typically, these programs are managed by state health departments which received funding from the CDC. As of early 2014, the 18 states with such programs included AK, CO, GA, KY, MA, MD, MI, NC, NJ, NM, OH, OK, OR, RI, SC, UT, VA, and WI.

In September 2013, the National Association of Medical Examiners (NAME) was awarded a contract from the Centers for Disease Control and Prevention to develop a draft guide titled “NVDRS Best Practices in Medicolegal Data Collection” with the understanding that such data are those of interest to NVDRS programs and obtained by medical examiner and coroner offices when conducting medicolegal death investigations in the United States. NAME agreed that it would undertake the one-year project and that its ad hoc Data Committee would take the lead in developing the draft guide.

The NAME ad hoc Data Committee consists of seven forensic pathologists (Randy Hanzlick, MD (Chair) – Atlanta, GA; Tracey Corey, MD – Louisville, KY; Kathryn Haden Pinneri, MD – Houston, TX; Joseph Prahlow, MD – South Bend, IN; Karen Gunson, MD – Portland, OR; Erin Presnell, MD – Charleston, SC; Linda J. Szymanski, DO – Albuquerque, NM); an occupational researcher (Steven Clark, PhD – Big Rapids, MI); and a medical examiner office Chief of Operations (Christopher Boden, BS – Daytona Beach, FL). Six of these committee members work in states with NVDRS programs (GA, KY, MI, NM, OR, SC).

Project deliverables included:

- Present a Progress Report at the NVDRS reverse site visit in Atlanta, February 2014
- Present information to the NAME Board of Directors and general membership, September 2014
- Provide CDC with copies of presentations or educational materials developed during the project
- Provide a draft best practices guide to CDC, September 2014

Methods

An initial conference call was held between the ad hoc Committee Chair and CDC Project manager in October, 2013. During this call, the project timetable and deliverables were discussed.

Immediately following receipt of the contract, the ad hoc Committee requested that CDC provide information sources and any extant reports of NVDRS system analysis or performance. The following information was received and submitted to the ad hoc Data Committee:

- Contact information for each NVDRS state’s Principal Investigator and Project Manager
- A tabulated list by state of state NVDRS system websites and their publications
- A copy of the NVDRS web-based system coding manual version 1.1, 8/28/2013
- The Safe State’s Alliance publication titled “Stories from the Frontlines of Violent Death Surveillance” (2013)
- An internal review of the NVDRS system (2010)
- The National Association for Public Health Statistics and Information Systems (NAPHSIS) April 2013 publication titled “More Better Faster: Strategies for Improving the Timeliness of Vital Statistics”

All of the above information was forwarded to the ad hoc Data Committee members for review.

In addition, the ad hoc Data Committee identified one forensic pathologist-medical examiner in each NVDRS state to be a contact person for information about state-specific details. Those persons are as follows:

Kathy Raven	AK (1)
Amy Martin	CO (2)
Randy Hanzlick	GA
Tracey Corey	KY
Henry Nields	MA
David Fowler	MD
Joyce deJong	MI
Deborah Radisch	NC
Roger Mitchell	NJ (3)
Ross Zumwalt	NM
Tom Gilson	OH
Eric Pfeifer	OK
Karen Gunson	OR
Christina Stanley	RI
Erin Presnell	SC
Todd Grey	UT
Leah Bush	VA (2)
Brian Peterson	WI

(1). Now in California.

(2). Now retired.

(3) Now in Washington, DC.

Because federal regulations prohibit surveying more than nine entities, an official survey of principal investigators and project managers of all 18 NVDRS states could not be conducted. Rather, each was contacted and asked if they would be willing to share their thoughts (without specific survey questions) about the NVDRS system in their state. Also, the forensic pathologists in each state were contacted to obtain their input on the NVDRS system in their state.

On April 9, 2014, a CDC-sponsored Webinar, which substituted for a previously cancelled (due to weather) reverse site visit, was held during which Randy Hanzlick presented a summary of activities to-date and also involved a discussion, question, and answer session. 51 persons participated in the Webinar and there was at least one person from each NVDRS state.

Results

Information was obtained from project managers or principal investigators in all but one NVDRS state. Forensic pathologist responses were received from 8 states and several deferred to their state's project manager.

Comments received could be summarized into general categories of strengths, weaknesses, and needs/suggestions. These are shown in Tables 1-3. Although Table 3 identifies suggestions for improvements, many needs or suggestions can be inferred from Tables 1 and 2.

Table 1. NVDRS - System Strengths

Medical examiner offices enter some data into the state's VDRS electronic database
The coroners have been provided with a database which facilitates collection of desired data
The coroner's association is involved in the project
Data collection is centralized
Funding is provided to compensate for provision of data
The medical examiner is co-principal investigator on the project
The system is managed through/at the medical examiner's office
Investigators have pocket cards to remind them of desired case types and data

Table 2. NVDRS - System Weaknesses

Data-related
Lack of feedback on how data are used and when/where reports are published
Data cannot be easily queried; can put data in but cannot analyze it
Difficult to get data on criminal cases, especially from law enforcement on open cases
Coroners have no centralized records long-term
Data difficult to obtain for native American and military lands
CDC's expectations are unrealistic in regard to types of data medical examiners should/can provide
Existing medical examiner/coroner electronic databases are inadequate
There are long delays in providing data
Data are in differing electronic formats
Data cannot be directly imported from medical examiner/coroner database
The death certificate is used as the starting point to identify eligible cases
There is resistance to the use of technology among data providers
Autopsy reports are public and obtainable but ME/C investigative reports are not
Narrative information in ME/C reports is sparse (weak)
Data sharing is done by surface mail
There is duplicate effort on data entry and provision
Data have to be manually abstracted
Financial
We (the ME/C) always have to wait for the purchase order to provide the data
No payment to ME/C for participation
The ME/C is not included in the actual grant and related funds
The ME/C wants to follow a business model rather than a public health model
System Problems

There is variation in coroner interest, participation, and capability
Turnover in personnel
Time constraints
Decreasing funding and support hampers collaboration and communication
The program is not run in/out of the ME/C office
Involvement of ME/C office in running/participating in the system was reduced by NVDRS personnel

Table 3. NVDRS - Suggestions for System Improvement

Tie the system in with electronic death registration
Adopt legislation which makes needed records available to the NVDRS system
More realistic and standardized data elements
Develop a standard national database for ME/Cs
Standardize ME/C forms, reports, questionnaires

It also was apparent that in a few states, there were personality conflicts or turf/funding/database conflicts between NVDRS personnel and the ME/C community. In terms of overall comments about system performance, comments ranged from “system works well” to “I do not really know much about the system.”

It was not the intent of this project to single out and cite strengths or weaknesses in specific states; rather, data was collectively used to develop best practices that would be applicable to any state, realizing that some states may not currently be able to meet the recommended best practices while other states may already be meeting some of them.

Following the Webinar presentation on April 9, 2014 was a question, answer, and discussion period. Much of the discussion brought up points similar to those which were raised in the presentation. Several points learned which are worthy of note are as follows:

- 1) Virtually all state Principal Investigators and Program Managers for the NVDRS spend only part of an FTE on NVDRS activities.
- 2) CDC does have a formula for calculating FTEs and funding for various states based on the number of violent deaths.
- 3) Some states do collect and use data on accidental drug deaths although they are not formally considered to be NVDRS cases.
- 4) Some states are now able to collect data in electronic format such as Excel and then upload it directly into the NVDRS system. They have had to develop data conversion programs to do that, however.
- 5) A representative from one state commented that it is helpful to have regular meetings involving personnel providing the three main data sources: ME/Cs, police, and crime labs. It was pointed out that by having such meetings, it is not uncommon to find out the information held by some of the data providers is erroneous.
- 6) A representative from another state suggested that ME/Cs need to be more consistent in manner of death determination.
- 7) It was pointed out that “manual abstraction of data” is not a “bad word.” Such abstraction is useful to piece together information that may not be contained in specific data fields. For example, background psychiatric history might be contained in a narrative text field rather than being indicated in checklist or other format.

- 8) It seemed to be generally agreed upon that if data can be provided in electronic format, even if the data can't be uploaded directly into NVDRS, that manual abstraction of information is facilitated because they do not have to obtain hardcopy records and sift through them for information, and the need for travel is reduced.
- 9) An experienced coder can probably process 6 cases, or even more per day, but some cases are difficult, meaning fewer cases could be processed per day.
- 10) Turnover of NVDRS personnel is a problem. For example, an experienced coder may leave and it takes much time to train new personnel who cannot process cases as quickly.
- 11) Participants seemed to agree that it is better to keep the data processing procedures at the state level rather than trying to collect data through a more centralized, "national" system. Major reasons are that the states use data differently, need to be aware of the data and have direct ability to analyze it.
- 12) It was suggested that the Best Practices Manual involve recommendations for all parties, such as ME/Cs, NVDRS personnel, and procedures which are developed by those who administrate NVDRS at CDC.
- 13) It was pointed out that the narrative description of circumstances in ME/C reports are sometimes woefully lacking in detail.
- 14) It was recommended that standard databases and standard data collections forms for ME/Cs be developed. The difficulty in accomplishing this and getting compliance in usage was also discussed.
- 15) An area of concern in which data are often lacking involves psychiatric histories in suicide cases.
- 16) The newly released announcement for more states to become NVDRS states with funding was mentioned.
- 17) In the Fulton County Medical Examiner's jurisdiction, which covers about 1 million people, the number of violent deaths including suicides, homicides, and drug-caused deaths averages about 1.1 per day.

Over the ensuing months, the ad hoc Data Committee exchanged numerous emails, reviewed multiple draft versions of the Best Practices Document, and had conference calls to discuss specific issues. An electronic log of committee activities and progress was maintained and provided to the CDC. The committee voted to approve a final version of the document for editing, and after editing, the committee re-approved the document so it could be forwarded to the National Association of Medical Examiners Board of Directors for approval.

Data Elements

Introduction

During the data collection phase of the NVDRS Best Practices Project, it became apparent that concern existed about how realistic data content expectations were in regard to the types of data being collected and provided by medical examiner and coroner offices. To address this issue, the ad hoc committee reviewed the NVDRS coding guide and also obtained from CDC NVDRS program managers a more concise list of data elements it expected to receive from medical examiner /coroner offices. The committee used its collective practical experience to determine which data items would probably be collected by most or all medical examiner/coroner offices, which data items would be unlikely or difficult to collect, and which data items may not be routinely collected but are amenable to collection without undue difficulty. Based on such analysis, the committee developed a recommended database as shown below.

It is important to realize that the committee is not recommending that all medical examiner/coroner offices use an identical case management and database system, because numerous obstacles exist which would make such a goal unlikely to be attained. Rather, the database items include information which should be stored in electronic format, whether it be in a true database, or in word processing documents, or in a way that a combination of both is used. The recommended data items below are organized into sections which include information that would be expected on all potential NVDRS cases and those which would be expected on selected types of cases. The primary goal is that all recommended information is contained in electronic form which can then be transmitted to the violent death reporting system for direct uploading into the violent death reporting system, or, available for manual abstraction by coders, or, a combination of the two. The key is to avoid the need for violent death system coders to travel to medical examiner/coroner offices and review hard copy paper reports.

The suggested data items are shown on the following pages.

Data to be collected in all potential NVDRS cases:

Individual Data Item with one piece of information in the data field

- Case Number
- Deceased's date of birth
- Residence Address (Includes street name, number, city, state, and zip code)
- County of Residence
- Place of Death (Includes street name, number, city, state, and zip code)
- Type of location where injured (Parking lot, Home, etc.)
- Date of injury
- Time of Injury
- Injured at work (Y/N)
- Injury Address (Includes street name, number, city, state, and zip code)
- County of Injury
- In custody when injured (Y/N)
- Occupation
- Homeless (Y/N)
- Age (numerical)
- Age unit (H,D,W,M,Y)
- Race (W,B,A,NH,PI,AI,HL,Other, Unspecified)
- Ethnicity (Hispanic/Latino?)
- Genetic Sex (M,F)
- Transgender?
- Sexual Orientation (G,L,B,Unk)
- Date pronounced dead
- Time pronounced dead
- Date of death (known, found, or approximate)
- Time of death (known, found, or approximate)
- Cause on Line A of Death Certificate
- Cause on Line B of Death Certificate
- Cause on Line C of Death Certificate
- Cause on Line D of Death Certificate
- Other significant conditions on death certificate Part II
- Was Autopsy Performed (Y/N)
- Was person pregnant (Y/N)
- Manner of death
- How injury occurred
- Height
- Weight
- Companion Case Numbers (case numbers for other persons dying as a result of this incident)

- Narrative Text Fields
- Circumstances leading to death
- Scene investigation findings
- Medical, Medication, and Psychiatric History
- Follow-Up Information

Circumstances would be a text field in which comprehensive information can be reported about the circumstances leading to death. It can be structured to include circumstances from both the subjective and objective standpoints, the investigator's assessment of what appears to have happened, and the plans for case management and disposition .

If the death appears to involve an unintentional firearms injury, the circumstances should also include whether the victim was hunting, target shooting, acting in self-defense, loading or unloading the gun, cleaning the gun, showing the gun to others, playing with the gun, erroneously thought the safety was engaged, thought the gun was unloaded, thought the magazine was disengaged, pulled the trigger by accident, was struck by a ricochet, was injured while holstering or un-holstering the gun, mistook the gun for a toy, dropped the gun causing it to discharge, or whether there was a gun defect or malfunction. Further, who was handling the gun should also be mentioned.

If the death appears to be a homicide, the description of circumstances should also contain information describing whether the homicide appears to involve domestic violence, random violence, a drive-by shooting, gang violence, a hate crime, drug transactions, terrorism, mercy killing, justifiable self-defense, a brawl, jealousy, revenge killing, prostitution, or sex-trafficking, and whether the victim or shooter was an on-duty police officer.

Scene investigation would include a comprehensive text description of the incident scene.

Medical, Medication, and Psychiatric History would include all known medical conditions, medications, and psychiatric conditions. This information may be difficult to obtain in homicide cases, but is especially relevant in suicide cases.

Follow-Up Information is an open text "memo" field (or related databases) into which information can be entered as the case investigation continues after the original report of death.

For Firearms Deaths

Individual Data Items with the following information in the data field

- Weapon type, model, serial number, caliber or gauge
- Owner of the gun and how/where it was obtained

The medical examiner may have this information only in suicide cases, and perhaps unintentional cases. It may need to be provided by law enforcement in homicide cases and cases of undetermined intent.

For Suicide Cases:

Individual Data Item with one piece of information in the data field

Suicide note or message (Y/N)

Narrative Text Fields

Suicide details

This would be a text narrative field that should contain information indicating whether the victim was known to have any of the following: depression, mental health problem, a mental health diagnosis, treatment of mental illness, alcohol or substance problem, addiction, and whether the suicide followed

a homicide committed by the suicide victim. It should also indicate whether there have been previous suicide attempts, mention of committing suicide, and factors which may have precipitated the suicide or put the victim at risk for suicide such as a recent crisis, physical condition, intimate partner problem, relationship problem, financial problems, eviction, loss of home, precipitating argument, or problems at school, or work. Suicides of friends or family should also be noted as should recent deaths of friends of family members, abuse as a child, or suicide being committed on an important anniversary date. If a gun is involved, this field should also contain information about the source of the gun and how the gun was accessed/obtained.

Toxicology Information

Narrative Text Fields

Toxicology Results

At a minimum, this field should contain a list of substances which were detected and their concentrations.

Wound Information

Rather than categorizing wound types, the ME/C office may simply provide a copy of the autopsy report to VDRS personnel, preferably in electronic format.

Summary

41 data fields, including 37 simple text fields and 4 narrative text fields can capture ME/C data that are needed for VDRS purposes. Several additional fields can capture information about weapon type, suicide note, suicide-related data, and toxicology. This assumes, of course, that the narrative text fields contain the information recommended in this suggested data set. All such fields could be exported to the VDRS program for needed abstraction and coding, minimizing the need for working with paper copies and records. A VDRS employee working in the ME/C office could easily extract and code the needed information.

Database Structure with Explanations

Table 4. Minimum Medical Examiner/Coroner Database Structure and Suggested Field Names. CDC NVDRS field names which directly correspond to variables (fields) in the minimum data set are shown in black. For items which do not directly correlate, suggested field names are shown in blue. This table may be useful to those who are designing or modifying an electronic medical examiner/coroner case management system (database).

Variable (Field; Data Element)	Field Name
Case Number	CMENumberLastFour
Date of Birth	BirthDate
Residence Address	CompleteResidenceAddress
County of Residence	ResidenceCounty
Place of Death (street name, number, city, state, and zip code)	CompleteDeathPlaceAddress
Type of location where injured (Parking lot, Home, etc)	InjuryLocation
Date of injury	InjuryDate
Time of Injury	InjuryTime
Injured at work (Y/N)	InjuredAtWork
Injury Address (street name, number, city, state, and zip code)	CompleteInjuryAddress
County of Injury	InjuryCounty
In custody when injured (Y/N)	VictimInCustody
Occupation	OccupationText
Homeless (Y/N)	Homeless
Age (numerical)	Age
Age unit (H,D,W,M,Y)	AgeUnit
Race (W,B,A,NH,PI,AI,HL,Other, Unspecified)	RaceCode
Ethnicity (Hispanic/Latino)	Ethnicity
Genetic Sex (M,F)	Sex
Transgender	Transgender
Sexual Orientation (G,L,B,Unknown)	SexualOrientation
Date pronounced dead	DatePronouncedDate
Time pronounced dead	TimePronouncedDead
Date of death (known, found, or approximate)	DeathDate
Time of death (known, found, or approximate)	TimeOfDeath
Cause on Line A of Death Certificate	DeathCause1
Cause on Line B of Death Certificate	DeathCause2
Cause on Line C of Death Certificate	DeathCause3
Cause on Line D of Death Certificate	DeathCause4
Other significant conditions on death certificate Part II	OtherSignificantConditions
Was Autopsy Performed (Y/N)	AutopsyPerformed
Was person pregnant (Y/N)	Pregnant

Manner of death	DeathMannerCME
How injury occurred	HowInjuryOccurred
Height	Heightinches
Weight	Weight
Companion Case Numbers	CompanionCaseNumbers
Circumstances leading to death	NarrativeCME (see Footnote)
Scene investigation findings	NarrativeCME or SceneDescription
Medical, Medication, and Psychiatric History	CME/LE_MentalHealthProblem or MedicalPsychHistory
Follow Up Information	FollowUpInformation
Weapon type, model, serial number, caliber or gauge	Weapontype
Owner of the gun and how/where it was obtained	GunOwner
Suicide note or message (Y/N)	CME/LE_SuicideNote
Toxicology Results	SubstanceResult Or ToxicologyResults

Footnote: The NarrativeCME field could include ALL information about circumstances leading to death, scene description, medical and psychiatric history, suicide background information, homicide information, and firearms information. As an alternative, separate fields could be developed for scene information, medical and psychiatric information, and toxicology.

Clarifying Details

Table 5 - Race and Ethnicity. The NVDRS database contains individual data fields for the various options to indicate race of the decedent. It is not realistic to expect ME/Cs to have such individual data items. A single data field for race could include the following options, based on the categories listed in the NVDRS Coding Manual:

Code for ME/C Database	Race as described in NVDRS Coding Manual
W	White
B	Black or African American
A	Asian
NHPI	Native Hawaiian or Pacific Islander
AIAN	American Indian or Alaska Native
OTH	Other Race
UNS	Unspecified Race

In addition, the Ethnicity data item would contain HL if the decedent was Hispanic or Latino.

Victim in Custody. This item could be a simple Yes/No answer in ME/C databases. “Yes” would be indicated using the guidelines below, which have been taken directly from the NVDRS Coding Manual.

“Yes” would be indicated if any of the following applies:

- In jail or prison
- Under arrest but not in jail
- Committed to mental hospital
- Resident of other state institution
- In foster care (i.e., child in out-of-home placement, etc.)
- Injured prior to arrest
- Other (including house arrest, electronic monitoring, legal home confinement)

A victim is in public custody if he or she is under arrest, in foster care (i.e., out of home placement), or remanded by law to an institution such as a jail, prison, detention center, psychiatric ward, psychiatric hospital, or other institution. Custody is coded on the basis of when the fatal injury was inflicted or when the death occurred.

- If the injury was inflicted while the person was not in custody, but they died in custody, code “Victim in Custody” as “Yes”.
- The response “In jail or prison” also covers incarcerations in juvenile detention facilities and other detention facilities.
- People who voluntarily commit themselves should not be coded as in custody.

Occupation. The occupation information used by NVDRS is taken from the occupation information shown on the death certificate, which may actually be provided by the funeral director rather than the ME/C. For ME/C database purposes, it seems reasonable to use the OccupationText field and make entries such as “Unemployed commercial airline pilot,” “carpenter,” “insurance agent” etc. Although federal agencies have extensive lists of occupation, industry, and trade, it is not realistic to expect ME/Cs to report such specific information.

Transgender. This item can be a check box item which is checked according to the following NVDRS Coding Manual guidelines:

- The victim self-identifies as transgender or a friend/family member reports that the victim self-identified as transgender.
- Transgender is defined as people “who experience incongruence between birth sex and gender identity.” For instance, a person with a biological sex of a male may identify themselves as female.

As an alternative, a Yes/No data item could be marked as “yes” in applicable cases.

Sexual Orientation. The NVDRS coding manual contains a field for sexual orientation, and the options are “Gay,” “Lesbian,” “Bisexual,” “Unknown,” and “None” for heterosexual or straight. The coding manual indicates that this designation should be based on the victim’s self-identified status (prior to death, of course), as reported by family, friends, or witnesses during the investigation.

Age. Victim age can be handled in one of two ways:

- Separate data fields for age (a number) and age unit. Thus, for a 63-year-old, one field would contain “63” and the other “Y”.
- One field incorporating both items using three characters. Thus, an 85-year-old would be listed as “085.” A 2-month could be listed as 02M or M02.

Regardless of method, the age units would consist of H (hours), D (days), M (months), and Y (years). Any person dying within one hour of birth would be listed as being one hour. Victims less than two years of age could be listed using the M age unit, thus, a 16-month-old would be listed as M16 or 16M. Option two above avoids the need to use Y for victims more than 24 months of age. A three-year-old would be listed as “003”, a 16-year-old would be “016,” and a 102 year-old would be listed as “102.”

The key to the whole approach using the information in Table 4 and the methods described herein is that data may be provided to NVDRS in electronic form, from which NVDRS can either automatically convert certain data fields for importing into NVDRS, or, abstractors have sufficient electronic data to abstract the information they need.

Table 6 – Other Data Items. There are other data items of interest to NVDRS which may or may not be available to the coroner or medical examiner. If the following items are or will be available, this table shows the NVDRS data item names and the options for responses. This information could be used when designing or modifying the medical examiner or coroners’ electronic case management system/database.

NVDRS Data Item Name	Response Options
Military	0 No 1 Yes 9 Unknown
CME/LE_IntimatePartnerViolence	0 No, not available, or unknown 1 Yes
CME/LE_GangRelated	No, not available, or unknown Yes, gang motivated Yes, suspected gang involvement Yes, gang related, not otherwise specified Organized crime including motorcycle gangs, mafia, drug cartels
CME/LE_Bystander	0 No, not available, or unknown 1 Yes
CME/LE_RandomViolence	0 No, not available, or unknown 1 Yes
CME/LE_WalkbyAssault	0 No, not available, or unknown Yes
CME/LE_DrivebyShooting	0 No, not available, or unknown 1 Yes
VictimSuspectRelationship (Use these words to describe the suspect’s relation to the victim)	1 Spouse 2 Ex-spouse 3 Girlfriend or boyfriend

	7 Ex-girlfriend or ex-boyfriend 8 Girlfriend or boyfriend, unspecified whether current or ex 10 Parent 11 Child 12 Sibling 13 Grandchild 14 Grandparent 15 In-law 16 Stepparent 17 Stepchild 18 Child of victim's boyfriend/girlfriend (teenager kills his mother's boyfriend) 19 Intimate partner of suspect's parent (e.g., child killed by mom's boyfriend) 20 Foster child 21 Foster parent 29 Other family member (e.g., cousin, uncle, etc.) 30 Babysitter (e.g., child killed by babysitter) 31 Acquaintance 32 Friend 33 Roommate (not intimate partner) 34 Schoolmate 35 Current/former work relationship (e.g., co-worker, employee, employer) 36 Rival gang member 44 Other person, known to victim 45 Stranger 50 Law enforcement officer (Victim was injured/killed by law enforcement officer) 51 Suspect injured/killed law enforcement officer 52 Suspect injured/killed law enforcement officer injured while officer was in the line of duty 99 Relationship unknown Other
--	---

Based on NVDRS coding schemes, it would seem reasonable to have the default entry be "No, not available, or unknown" for those data items having that option, and that the "Military" and "VictimSuspectRelationship" items default to "unknown." However, the ad hoc committee feels that it would be best to offer "no," "not available," or "unknown" as specific choices instead of lumping them together as one response.

Clarifications

Military. Has the victim ever served in the U.S. Armed Forces?

Definition of "intimate partner:" For all intimate partner-related variables, intimate partner is defined as a current or former girlfriend/boyfriend, date, or spouse. This includes first dates, but DOES NOT include instances of sex/intimacy in exchange for money/goods. There must be evidence of an intimate

relationship (this does not apply to instances where there is simply attraction/infatuation between two individuals or in cases where one person is romantically interested in the other, but the feelings are not returned). This definition includes same-sex partners.

Perspective

If the above items are not captured in specific fields in the medical examiner/coroner case management system, they can be mentioned in the narrative description of circumstances, when the information is known, so the information is available to the NVDRS abstractor.

De-Identifying Data

Laws and/or VDRS procedures require that data be de-identified so specific individuals (especially the living) cannot be identified. This can be accomplished in two ways.

- 1) Have an agreement with the VDRS Principal Investigator that the VDRS personnel will de-identify the data before it is used
- 2) De-Identify the data before it is provided to the VDRS system. (favored option by ad hoc committee)

Option 2 is more labor-intensive for the data provider, but several options exist.

- 1) Make a copy of all needed data and delete data from the data fields that have identifying information
- 2) Construct the database and data processing procedures so that data items with identifying information are not copied with the electronic information being prepared for transfer to the VDRS program
- 3) Place all identifying information for next of kin, witnesses, etc. in a specific data field that is not transferred with VDRS data, and ensure that narrative fields do not contain identifying data. For example, the Narrative Description might state that "According to Mr. X, the decedent was last known alive at 1130am." A separate "Identifier" data item might then contain information that "Mr. X is John Smith, telephone 404-111-1111." The identifier data item would not be passed along with VDRS data. This option might take some time getting used to, but it does pose advantages.

What methods are used should be mutually agreed upon by the ME/C office and the VDRS program personnel.

Overall Perspective about Data

The NVDRS system collects data from death certificates, medical examiner/coroners, crime labs, law enforcement, and in some areas, child fatality and/or domestic violence review teams. Many of the same data items may be in the possession of multiple agencies, and it is important not to overburden the medical examiner/coroner with data items that can be obtained from other sources, and perhaps even more accurately, such as relation of perpetrator to victim.

One of the major goals of the NVDRS is to contain data somewhere in the electronic database so it is accessible to data abstractors. Whether data are in specific fields or combined in open ended text fields is less important. The key is that the data are in the database.

The NVDRS Coding Manual has sections regarding each of the following types of information:

- Incident variables
- Document tracking variables
- Demographic variables
- Injury and death variables
- Circumstance variables
- Weapon variables
- Suspect variables
- Toxicology variables

Many of the above sections request dozens of items of information. The reader is referred to the NVDRS Coding Manual for more specific information which may be useful in developing or modifying a medical examiner/coroner case management database system (5).

References

1. NVDRS. <http://www.cdc.gov/ViolencePrevention/NVDRS/index.html>
2. Hanzlick R, Parrish RG. Epidemiologic aspects of forensic pathology. *Clinics in Laboratory Medicine* 1998;18:23-37.
3. Hanzlick R, Parrish RG. The use of medical examiner/coroner data in public health surveillance and epidemiologic research. *Annual Review of Public Health* 1996;17:383-409.
4. Hanzlick R, Hunsaker J III, David GJ. A Guide for Manner of Death Classification. National Association of Medical Examiners. Available at NAME Press, www.TheNAME.org/Library/library_index.htm
5. National Violent Death Reporting System Web-Based Coding Manual Version 1.1 (8/28/2013). Available electronically from the CDC's NVDRS Program.