

Improving Drug Specificity and Completeness on Death Certificates for Overdose Deaths: Opportunities and Challenges for States

Stakeholder Meeting Report

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DEFINITION OF TERMS

ABMDI	American Board of Medicolegal Death Investigators
API	Application Programming Interface
ASTHO	Association of State and Territorial Health Officials
CDC	Centers for Disease Control and Prevention
CSTE	Council of State and Territorial Epidemiologists
DEA	Drug Enforcement Administration
DOJ	Department of Justice
EDRS	National Electronic Death Reporting Systems
EHR	Electronic Health Records
ESOOS	Enhanced State Opioid Overdose Surveillance
HIPAA	Health Insurance Portability and Accountability Act of 1996
IACME	International Association of Coroners & Medical Examiners
NAAG	National Association of Attorneys General
NAME	National Association of Medical Examiners
NAPHSIS	National Association for Public Health Statistics and Information Systems
NCFS	National Commission on Forensic Sciences
NCHS	National Center for Health Statistics
NCVHS	National Committee on Vital and Health Statistics
NEDSS	National Electronic Disease Surveillance System
NFLIS	National Forensic Laboratory Information System
NGA	National Governors Association
NHTSA	National Highway Traffic Safety Administration
NIJ	National Institute of Justice
NIST	National Institute of Standards and Technology
NVDRS	National Violent Death Reporting System
OSAC	Organization of Scientific Area Committees for Forensic Science
PDMPs	Prescription Drug Monitoring Programs
SUDORS	State Unintentional Drug Overdose Reporting System

EXECUTIVE SUMMARY

In August 2017, ASTHO convened a one-and-a-half day meeting of stakeholders to offer individual viewpoints about approaches to improving the completeness of death certificate information on drug intoxication deaths. The meeting attendees included representatives working in the medicolegal death investigation field, including coroners, medical examiners, forensic pathologists, and county, state, and federal agency officials, as well as those working in overdose death surveillance, including epidemiologists and vital registrars. The purpose of the meeting was to engage medicolegal death investigation and overdose death surveillance professionals to offer their individual perspectives on key strategies and priority and feasible action areas at the local, state, and federal levels for improving the quality of drug data on death certificates. Meeting participants discussed the importance of death certificate data for public health and safety interventions; the issues affecting the quality of mortality data, including the lack of drug specificity on death certificates; potential solutions and approaches for increasing drug specificity on death certificates; and key short-term action areas for improving death certificate data.

State and local health departments and federal public health agencies continue to play key roles in addressing the completeness of death certificate information for drug intoxication deaths. Public health interventions depend on timely, high-quality, complete data to determine where to focus efforts, how and when the interventions should be delivered, and what specific environments, systems, behaviors, beliefs, and attitudes the interventions should address.

This report provides an overall summary of this meeting. It includes information on the drug overdose crisis, key issues related to death certification for drug overdose deaths, project design and methods, and meeting outputs. It also features a summary of the six overarching discussion themes that emerged from the meeting. Lastly, it includes potential opportunities and considerations for states to improve the completeness and drug specificity on death certificates in collaboration with county and federal agencies.

DISCUSSION THEMES

After considering individual input from the stakeholder meeting, ASTHO identified six key themes and summary points, as listed below.

Discussion Theme One: Mortality Data Systems

Improve interoperability between mortality data systems, update essential mortality data systems, improve access to medical data, and plan for a coordinated data architecture that pulls data from multiple sectors and systems.

- State governments rely on electronic death reporting systems (EDRS) to produce official mortality data collected from death certificates. EDRS are aging and need to be updated and re-designed. Funeral homes, death certifiers, and local and state registrars enter data into EDRS, and registrars use EDRS to share death data. Stakeholders expressed an interest in modeling EDRS improvements on infectious disease platforms. For example, two options include centralizing lab reporting and making the system more user-friendly, such as by using predictive text suggestions for addresses and other similar information.
- Agencies and individuals would benefit from increased interoperability across mortality data systems, including EDRS, medical examiner and coroner case management systems, postmortem toxicology

testing results systems, electronic health records (EHRs), prescription drug monitoring programs (PDMPs), and other state and federal data systems related to mortality.

Discussion Theme Two: Postmortem Toxicology

Address the timeliness, quality, and reporting process for postmortem toxicology results, and address funding gaps for coroners and medical examiners to complete appropriate toxicology testing.

- A number of factors impact the timeliness of toxicology results, including instrumentation, personnel, the ability to keep pace with emerging drugs, and coordination.
- Toxicology testing techniques and methods need to be refined to keep pace with emerging illicitly manufactured synthetic drugs.
- Coordination between the death investigator and associated labs (e.g., crime lab, toxicology) should be optimized and medicolegal death investigation stakeholders should clarify decision-making roles and responsibilities related to toxicology testing.
- Improve and streamline toxicology reporting using infectious disease reporting systems as a model.
- Increase funding for comprehensive postmortem toxicology testing.

Discussion Theme Three: Training and Education

Develop and offer training and education to coroners and medical examiners about the importance of drug specificity on the death certificate, how to complete the death certificate, and related issues.

- Training and education for coroners, death investigators, and medical examiners is essential to improving drug specificity on death certificates. State health departments, state legal and criminal justice officials, and attorneys general can collaborate on developing and delivering such training.
- Medical examiners and forensic pathologists need continuing medical education (CME) on interpreting complicated toxicology testing and interpreting toxicology results for complicated deaths.
- Medical examiners and coroners can convene to develop joint position papers and standards for death certifiers. One possible project for such a group is to update the NAME position paper, *Recommendations for the Investigation, Diagnosis, and Certification of Deaths Related to Opioid Drugs* (2013), in light of the emergence of new drugs.
- Epidemiologists need to understand the medicolegal death investigation system.

Discussion Theme Four: Guidance on Filling out the Death Certificate

Develop and disseminate guidance for the death investigation and death certification processes as they relate to drug overdose deaths.

- Death certifiers need specific guidance on how to complete the death certificate. This guidance should include information on how to list drugs involved and provide sample language and example death certificates. Stakeholders at the meeting provided input on a forthcoming *Reference Guide for Certification of Drug Intoxication Deaths* under development by National Center for Health Statistics (NCHS). This guidance document will be an important source of information on how to complete the death certificate, particularly how to list drugs on the death certificate.
- The medicolegal death investigation community needs specific guidance on determining which drugs to list on the death certificate when multiple drugs are involved or present. Joint position papers are also needed on this topic.

Discussion Theme Five: Verification of Fact of Death

Develop a mechanism to provide an official certification of death that would be available for next of kin for administrative purposes, but doesn't include medical information.

- The health information on death certificates may be sensitive and is not needed for many administrative purposes. Furthermore, certifiers may not include specific and actionable information that they deem too sensitive (e.g., drug overdose, conditions that may have led to suicide) on the death certificate due to concerns that the family would be harmed.
- Creating a mechanism for an official certification of death that doesn't include medical information will require a change in the operations in vital registrars' offices, may necessitate a policy change, and would also have cost implications. However, it could have a significant, long-lasting positive impact on the quality of death data.

Discussion Theme Six: Coordination of Medicolegal Death Investigation

Enhance federal- and state-level coordination of work related to coroners, medical examiners, and other medicolegal death investigation stakeholders.

- Creating federal- and state-level offices to coordinate the medicolegal death investigation community would help consolidate activities and supports.
- Coroner and medical examiner offices need funding for computers and other technology, toxicology testing, and personnel.

KEY ACTION AREAS

Meeting participants identified key action areas, listed below, for improving drug specificity and completeness of death certificates for drug overdose deaths. These action areas were suggested as priorities for the next several years.

Financing

- Improve funding for medicolegal death investigation and vital registration.
- Integrate EDRS and medical examiner and coroner case management systems, and leverage current work around Meaningful Use and healthcare transformation to improve EDRS.

Policy

- Create federal-level policies to guide what is needed from medical examiners and coroners at the state and local levels and drive changes in local and state policy and practice.
- Create a home in the federal government for medicolegal death investigation.
- Use the Potential Solutions document included in this report to develop a menu of policy options for state health departments and other stakeholders.
- Develop model laws related to medicolegal death investigation.

Complementary Sectors and Partners

- Advance public health and law enforcement partnerships and collaboration.
- Establish coalitions comprised of local health departments and treatment centers at the county level to address mental and behavioral health issues as a part of primary prevention efforts.

- At the state level, hold an initial meeting between medical examiners and coroners, vital statistics, and epidemiologists to talk about the status of drug specificity on death certificates in their state.
- Encourage state health departments to obtain more detailed information about death certificates that lack sufficiently detailed information on the drugs involved in the death.
- Develop a train-the-trainer model that can be implemented widely to teach death certifiers about the surveillance value of providing information on the specific drugs involved and how to complete the death certificate.

Timeliness

- Improve the timeliness of toxicology data to ensure timely death certificate submissions.
- Address pending death certificates by identifying and standardizing the process for revising or amending death certificates once more information (e.g., toxicology results) is available.

Education and Training

- Update the NAME position paper on multiple drug overdose deaths.
- Conduct joint presentations to educate coroners and medical examiners about the importance of drug specificity on death certificates and actions to improve specificity.
- Develop joint position papers between medical examiners and coroners about medicolegal death investigation and death certification.
- Develop an educational slide deck that may be used for CMEs, American Board of Medicolegal Death investigators (ABMDI) credits, and other purposes.
- Develop a national standard for how drugs are listed on the death certificate and educate coroners and medical examiners about it.
- Have state health departments assist medicolegal death certifiers in getting certified and help medical examiner and coroner offices in seeking accreditation.
- Develop or find the appropriate communication mechanisms for CDC and federal and state agencies to effectively reach medical examiners and coroners.

BACKGROUND

The opioid epidemic is worsening in the United States. Based on data from the National Vital Statistics System (NVSS), there were over 63,600 deaths due to drug overdose in the United States in 2016.¹ For the same year, the age-adjusted rate of drug overdose deaths was more than three times the rate in 1999.² The rate of drug overdose deaths that involved synthetic opioids other than methadone—including fentanyl, fentanyl analogs, and tramadol—doubled from 3.1 per 100,000 in 2015 to 6.2 per 100,000 in 2016.³ From 2015 to 2016, drug overdose death rates that involved heroin increased from 4.1 to 4.9.⁴ For drug overdose deaths involving natural and semisynthetic opioids, such as morphine, codeine, and oxycodone, rates increased from 3.9 to 4.4 from 2015 to 2016. As communities continue to respond to this epidemic, overdose death rates increase.

State and local health departments, as well as federal public health agencies, play key roles in mitigating this epidemic. Public health interventions, such as deploying naloxone kits, promoting safer prescribing, increasing access to medication-assisted treatment, implementing harm reduction approaches, and coordinating public awareness campaigns, provide opportunities to address this crisis. However, interventions depend on timely, high-quality, complete data to determine who to target, how and when the interventions should be delivered, and what specific environments, systems, behaviors, beliefs, and attitudes the interventions should address.

Offices of medical examiners and coroners are a crucial part of the public health infrastructure because they investigate sudden and unexpected deaths, including drug overdose deaths. The data acquired through death certificates helps inform the strategies that public health organizations implement. Death certificates are a key source of drug overdose death data and essential to public health surveillance efforts. Specifying which drugs were present in a drug overdose death is a critical aspect of completing the death certificate.

Death certificates play an imperative role in public health by providing information on mortality, including the size and scope of the drug overdose crisis. To successfully complete a death certificate, the death certifier must consider many data points and technical information. For example, the death scene investigation, prescription drug and medical history, autopsy, x-rays, biopsies, CT scans, and toxicology may all add information that contributes to the certificate's completeness. After determining the cause and manner of death, the death certifier describes the causal sequence in Part 1 of the Cause of Death section on the death certificate. Information on other significant conditions that contributed to the death is included in Part 2 of the Cause of Death section, and information on how the injury occurred is captured in a separate box. The text found in Part 1 and Part 2 of the Cause of Death section and the How the Injury Occurred box is used to determine the underlying and contributory causes of death and assign the *International Statistical Classification of Diseases and Related Health Problems, 10th revision (ICD-10)* codes used for classification and data analysis.

There are numerous challenges and barriers associated with death certificate completeness:

- Timeliness of the information needed to determine cause and manner of death in order to complete the death certificate, including toxicology results.

- Thoroughness and interpretation of the scene investigation.ⁱ
- Difficulties with determining a manner of death, which is sometimes recorded as undetermined.
- Certifying physicians' ability to recognize cases that should be referred to the medical examiner.
- Completion of the How Injury Occurred section of the death certificate (Box 43), which death certifiers do not complete in a consistent manner.
- Differentiation between the presence of a drug and specifying that a drug contributed to or caused a fatal overdose.
- Centralization versus decentralization of the death investigation system. States with a centralized medical examiner office have approximately 92 percent of death certificates listing specific drugs⁵; many coroner offices receive less funding and do not have access to the resources required to list specific drugs.
- Difficulties with cross-state comparisons due to the variation with the completeness and specificity of drug information on death certificates for drug overdose deaths across states. The percent of death certificates that include specific drugs involved in the death range from 50-60 percent in a few states to nearly 100 percent in others.

The death certificate is one of the most important and efficient ways to get information to all of the relevant entities that need mortality data. Vital statistics receives information about deaths in the state via death certificates. Increasing drug specificity and completeness on death certificates could enhance surveillance efforts to better understand incidence, prevalence, and the drug overdose epidemic's scope and trends.

PURPOSE OF STAKEHOLDER MEETING

The purpose of this meeting was to engage those working in medicolegal death investigation and drug overdose death surveillance to hear their individual viewpoints on identifying and prioritizing feasible actions at the local, state, and federal levels to improve the quality of drug data on death certificates. ASTHO convened key stakeholders and experts for an in-person meeting, with CDC funding support, to gather individual perspectives about the importance of death certificate data in public health practice, the issues affecting the quality of mortality data, potential solutions and approaches for increasing drug specificity on death certificates, and key short-term action areas for improving death certificate data. The discussion themes, strategies, and solutions presented in this document are the result of meeting attendees' individual viewpoints. This meeting report is not a reflection of group consensus or recommendations. Rather, it is a summary of individual opinions organized within overarching themes, reflecting input from subject matter experts.

STAKEHOLDERS

ASTHO engaged individual experts to share strategies that might enhance reporting of drug-specific information on death certificates, and strived to ensure a representative group of meeting participants to reflect the roles, disciplines, and stakeholder groups working within the medicolegal death investigation system and overdose death surveillance. The stakeholders who attended included medical examiners,

ⁱ For more information about the medicolegal death investigation process, please see the National Institute of Justice report [Death Investigation: A Guide for the Scene Investigator](#).

toxicologists, coroners, epidemiologists, death investigators, forensic pathologists, statisticians, vital registrars, and state health leadership, some of whom were also representatives of or involved in the work of related professional organizations, such as NAME, the International Association of Coroners & Medical Examiners (IACME), National Association for Public Health Statistics and Information Systems, and the Council of State and Territorial Epidemiologists (CSTE). A full list of meeting participants is included in [Appendix 1](#).

MEETING OUTPUTS

The outputs of the August 2017 stakeholder meeting included:

- This meeting summary report.
- A comprehensive list of stakeholder-generated solutions for improving drug data on death certificates.
- A list of stakeholders' priority solutions organized by short- and medium-term timeframes.
- A matrix of stakeholders' priority solutions organized by local, state, and federal levels.
- One or two specific activities (the "how") for each of the priority solutions that stakeholders brought forward.

This project's overall goal was to engage stakeholders in identifying and refining a set of options that the medicolegal death investigation community, vital registrars, state health departments, and others can use to improve drug completeness and specificity on death certificates for drug overdose deaths.

PROJECT AND MEETING DESIGN

PROJECT DESIGN

This project included two phases. The first phase was a series of interviews with medicolegal death investigation experts (n=9) to glean insights on the major problems and barriers that they face related to death certification and drug specificity on death certificates, as well as proposed approaches to solving those problems. These initial interviews aimed to determine the most salient issues to address during the in-person meeting and created a strong foundation for the project's second phase. Using the interview findings, ASTHO created a list of possible solutions and approaches for improving drug specificity data. ASTHO used this document as the foundational resource for the in-person meeting. The second phase, the in-person stakeholder meeting, focused on engaging stakeholders and promoting discussion to both understand the key barriers around death certification and improving drug specificity, as well as to refine the list of possible solutions. Another purpose of the in-person meeting was to identify attendees' perspectives on key priorities and feasible action areas for the next several years to improve drug specificity on death certificates. The project and the meeting were informed by a systems-based approach, which aims to bring together multiple elements of public health, including policy change, financing, data, evidence-based programs, and multi-disciplinary partners, to promote collaboration, coordination, and cross-pollination and build awareness of what partners can accomplish together when working across sectors.

MEETING DESIGN

The following section provides a description of what occurred during each session of the in-person meeting that ASTHO convened in August 2017. Additional contextual or background information is also provided where pertinent. A full agenda of the meeting is included in [Appendix 2](#).

Welcome and Overview

Jay Butler, ASTHO president and chief medical officer and director of the Alaska Division of Public Health, provided a brief welcome from ASTHO. Puja Seth, lead for the Overdose Epidemiology and Surveillance Team in CDC's Division of Unintentional Injury Prevention, provided a brief welcome from CDC. ASTHO's senior director of health improvement reviewed the agenda and the meeting's aims.

Overview of Death Investigation and Death Certificate Completion Process

Margaret Warner of the National Center for Health Statistics (NCHS) provided an overview of the death investigation and death certificate completion processes. This presentation addressed key needs, barriers, and priorities to improve death certificate data.

Stakeholder Priorities Round Robin

Meeting participants introduced themselves, sharing their names, organizations, and a priority for their work related to improving drug specificity on death certificates. Some of the priorities that stakeholders shared were:

- Improving drug data on death certificates.
- Improving data sharing between agencies.
- Developing strategies for federal agencies to support medical examiners and coroners.
- Educating death certifiers about the value of complete and accurate death certificate data.
- Modernizing data systems, such as EDRS.
- Centralizing data and reporting systems.

Participants also shared relevant disclosures of interest during the round robin introductions.

Potential Solutions from Phase One

During phase one of this project, ASTHO completed a series of key informant interviews with experts working in medicolegal death investigation to better understand key issues, barriers, and potential solutions for overcoming challenges in improving drug specificity on death certificates. These interviews informed the development of a document on potential solutions. This session of the ASTHO meeting agenda offered an opportunity for participants to add additional ideas to the Potential Solutions draft document. The document was organized around the ASTHO Systems Change Levers, a set of elements critical to making sustainable changes within public health systems, which are described below:

Leadership and vision	<ul style="list-style-type: none">• Setting a vision, developing a strategy.• Formal strategic planning.
Communication	<ul style="list-style-type: none">• Identifying and using effective communication channels to inform/educate the public.• Meeting audiences where they are.• Innovative forms of communication and engagement.

Policy change	<ul style="list-style-type: none"> Identifying and implementing organizational, regulatory, legislative policies. Short-term and “long haul.”
Evidence-based programs	<ul style="list-style-type: none"> Public health practice informed by evidence and best practices. Education about evidence. Research translation and dissemination.
Financing	<ul style="list-style-type: none"> Coordinating funding to fuel collaborative change across sectors. Thinking beyond program dollars. Leveraging existing resources. Consider complementary sectors. Sustainability.
Data-driven action	<ul style="list-style-type: none"> Improving surveillance and outcome data. Sharing data to educate and empower stakeholders. Informing strategies. Assessing gaps, challenges, needs. Coordination and access.
Complementary sectors, partners, and engaged individuals	<ul style="list-style-type: none"> Collaborations between complementary sectors and partners. Unify a vision of change. “Health is everywhere” mindset. Coordinating and maintaining partnerships.

Individual Priorities

This activity was designed to capture individual viewpoints and priorities from the Potential Solutions document. Each individual posted up to two priorities at each level (local, state, and federal) for improving drug specificity on death certificates. ASTHO categorized the individual priorities into themes at the local, state, and federal levels. These individual priorities and themes are available in [Appendix 3](#).

Action Steps for Short- and Medium-Term

Participants selected three to six priority solutions from the revised Potential Solutions document and wrote a few key short- and medium-term action steps aligned with these identified solutions. This activity’s goals were to (1) understand how participants envisioned making progress on selected action areas, and (2) move participants toward the meeting’s final activity, which was selecting feasible action areas to address over the next several years. A streamlined version of the Potential Solutions document, with meeting attendee’s action steps included, is available as [Appendix 4](#).

Interactive Discussion with ASTHO Membership

Butler and Gary Zientek, Alaska’s chief medical examiner, shared some high-level reflections about the first day of the meeting and the ways they hope to use the information to educate other SHOs and improve practice in Alaska. The purpose of this discussion was to highlight collaboration between medicolegal death investigation, state health officials, and state health departments, and bring the state health official lens to the conversation.

Feedback on *A Reference Guide for Certification of Drug Intoxication Deaths* by NCHS

This session's purpose was to engage participants in providing input to NCHS on *A Reference Guide for Certification of Drug Intoxication Deaths*, a forthcoming guidance document on how to complete the death certificate for drug intoxication deaths. Participants received the draft reference guide the week prior to the meeting to facilitate reviewing it in advance. NCHS researchers developed discussion questions and led the discussion about the guide at the meeting. Key themes from this discussion are summarized in the Key Discussion Themes section of this report.

Identification of Feasible Short- and Medium-Term Strategies

Facilitators asked participants to look at the revised Potential Solutions document and begin thinking about the most feasible action areas for the next one to three years. Participants selected at least one action area for each systems change lever. The full list of priority action areas identified at the meeting is provided in the next section of this report.

KEY DISCUSSION THEMES

The discussion themes described below emerged from the in-person meeting as participants shared their individual perspectives and opinions. One ASTHO team member developed an initial round of themes based on the meeting notes, and two ASTHO team members discussed and revised these themes based on a second review of meeting notes. Finally, the entire team reviewed and provided input on the summary of the key discussion themes. Individual written input from meeting attendees is summarized as part of the appendices included in this report.

DISCUSSION THEME ONE: MORTALITY DATA SYSTEMS

Improve interoperability between mortality data systems, update essential mortality data systems, improve access to medical data, and plan for a coordinated data architecture that pulls data from multiple sectors and systems.

Summary Points

- State governments rely on EDRS to produce official mortality data collected from death certificates. EDRS are aging and need to be updated and re-designed. Stakeholders expressed an interest in modeling EDRS improvements on infectious disease platforms. For example, two options include centralizing lab reporting and making the system more user-friendly, such as by using predictive text suggestions for addresses and other similar information.
 - Agencies and individuals would benefit from increased interoperability across mortality data systems, including EDRS, medical examiner and coroner case management systems, postmortem toxicology testing results systems, EHR, PDMPs, and other state and federal systems related to mortality.
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Interoperability

Participants indicated that better interoperability across systems would support the death certification process. Interoperability refers to the ability of data systems to exchange information with other systems.⁶ Addressing interoperability relates to data systems modernization efforts: many existing data systems need to be enhanced and updated to better meet stakeholder needs and achieve interoperability with other existing data systems.⁷

Developing application programming interfaces (APIs) is critical to increasing interoperability. An API framework would allow mortality and other health data systems to draw from other data sources. An API framework would also allow authentication for specific people and authorization to access specific data, ensuring security and confidentiality. Efforts to make systems interoperable are particularly important across systems within a state to ensure that key stakeholders can access and share relevant data for death certification. Interoperability across state systems is also a key consideration in county-based death investigation systems so that data can be efficiently compiled at the state level. Efforts to improve interoperability might include PDMP, EHR, EDRS, and coroner and medical examiner case management systems. Interoperability is relevant both in the context of death certifiers needing to access other information, as well as the output from the death certification process. Because a primary responsibility of

medical examiners and coroners is to certify the cause and manner of death in a timely and accurate way, efforts to advance interoperability should also aim to make it simple and efficient to complete the death certificate.

participants' primary suggestions on interoperability centered around: (1) Conducting a needs assessment to see which states have interoperability across multiple systems, including EHR and mental and behavioral health, and which of these systems have and do not have mechanisms to collect data from medical examiners and coroners, and (2) providing funding for working toward a data system that would "connect the dots" across medical examiners, coroners, and vital records, perhaps with the aim of developing a system similar to the National Electronic Disease Surveillance System, which has high compatibility across systems.

Participants mentioned the following key partners who should be involved in a data systems improvement effort: medical examiners, coroners, vital records, forensic science labs, hospitals, primary care, the National Violent Death Reporting System, National Forensic Laboratory Information System (NFLIS), Drug Enforcement Administration (DEA), National Highway Traffic Safety Administration, and other federal and state agencies.

Electronic Death Reporting Systems

Some participants shared that state EDRS need to be updated and improved. State governments rely on EDRS to produce official mortality data collected from death certificates. EDRS are housed in state health departments, and funeral homes, death certifiers, and local and state registrars use them to seamlessly enter death data. States could potentially leverage healthcare transformation funding and financial incentives tied to Meaningful Use to make EDRS improvements. Healthcare transformation is an effort to address the Triple Aim, which encompasses better health, better care, and lower costs.⁸ Meaningful Use is using EHR technology to improve quality, efficiency, and care coordination.⁹ Meaningful Use could also potentially support data systems interoperability. Several meeting participants also suggested that more ongoing collaboration between state health departments, including epidemiologists and vital registrars/vital statistics, medical examiners, coroners, healthcare providers, and other stakeholders, would help move toward systems interoperability.

With regard to EDRS updates, several participants mentioned modeling these changes on infectious disease reporting systems, the systems used to communicate "reportable conditions" to the state health department. According to several meeting participants, infectious disease systems are streamlined, automated, and include user-friendly elements that could be borrowed for EDRS. Two examples of how EDRS updates could be aligned with infectious disease reporting systems are to (1) centralize lab reporting, and (2) use predictive text suggestions for addresses and similar information. A few participants also suggested that EDRS include messaging capability to allow vital statistics to communicate with coroners and medical examiners across the state.

A few participants noted the importance of considering states' varying capacities with technology in general and EDRS specifically. For example, one state represented at the meeting doesn't have computers in all coroners' offices. One meeting participant suggested that it would be a positive step to get all offices up to a certain standard of technology and case management software. A few participants mentioned cloud-based data systems that can run on a smartphone, which could be useful for medical examiners' and coroners'

offices that have insufficient computers. States' differing capacities with technology is a key consideration for state health departments and state health officials seeking to improve death certificate data.

Integrating Data Systems Across Domains

Participants also discussed the value of having a federal-level system that integrates data from across domains, including both public health and law enforcement data. This would require achieving interoperability across systems from different domains and sectors that were not designed to work together. Several meeting participants noted that this has been achieved in other fields. One participant said that it would be helpful to explore how other fields (e.g., medical records, banking) have addressed this need. Another participant suggested that advancing such a data system at the state level might be more palatable than at the federal level. In addition, several participants mentioned data-sharing guidelines and rules that could prohibit states from sharing certain data with the federal government.

Data Access

Meeting participants discussed the importance of allowing medical examiners and coroners to access other data systems, such as PDMPs and EHRs. Accessing PDMP data can provide information and guide decisions on various parts of the death investigation, including what toxicology testing to order.¹⁰ Some states currently allow access to such systems and others do not. Access to systems like PDMPs and EHRs has to do not only with the technical aspects of interoperability, as discussed above, but also the legal path to obtaining access. Participants suggested that allowing medical examiner and coroner access to these data sources could increase efficiency. A few participants also raised the concept of toxicology labs gaining access to PDMPs. Coroners and medical examiners currently have different levels of access to other records, such as law enforcement records. One participant stated that medical examiners are often denied access to medical records because of the Health Insurance Portability and Accountability Act of 1996 (HIPAA). One participant mentioned that coroners have subpoena power, but medical examiners generally do not. Confidentiality is a key barrier to increasing coroner and medical examiner access to law enforcement and medical records. In cases where death certifiers cannot access data on individual people, one participant suggested that some aggregate law enforcement data might be helpful and cited NFLIS data as an example of data that public health can query and might be useful.

Additional Information on Stakeholder Access to PDMPs

- [PDMP Legislation Enacted in 2017](#)
- [Coroner/Medical Examiners Laws by State](#)
- [Using PDMP Data to Support Prevention Planning](#)
- [Types of Authorized Recipients – Coroners and/or Medical Examiners or State Toxicologists](#)

DISCUSSION THEME TWO: POSTMORTEM TOXICOLOGY

Address the timeliness, quality, and reporting processes for postmortem toxicology results, and address funding gaps for coroners and medical examiners to complete appropriate toxicology testing.

Summary Points

- A number of factors impact the timeliness of toxicology results, including instrumentation, personnel, the ability to keep pace with emerging drugs, and coordination.
 - Toxicology testing techniques and methods need to be refined to keep pace with emerging illicitly manufactured synthetic drugs.
 - Coordination between the death investigator and associated labs (e.g., crime lab, toxicology) should be optimized and medicolegal death investigation stakeholders should clarify decision-making roles and responsibilities related to toxicology testing.
 - Improve and streamline toxicology reporting using infectious disease reporting systems as a model.
 - Increase funding for comprehensive postmortem toxicology testing.
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Toxicology Timeliness and Quality

Multiple participants indicated that delays in receiving and interpreting toxicology results are a key reason for subsequent delays in completing the death certificate. There are a number of reasons for delayed toxicology results, including insufficient personnel, lack of testing standards, and the time it takes to develop testing standards for new drugs. The list of emerging illicitly manufactured drugs continues to grow, so reference materials are needed for these new drugs. Challenges that need to be addressed to improve the timeliness of toxicology results include having outdated instrumentation, not enough instrumentation, or an inability to validate instrumentation. In addition, there is geographic variation across the country in the types of testing conducted, the equipment used to run the tests, and the resources needed to request a toxicology consult. Toxicology delays also likely vary geographically. One participant said that toxicology results could be only two of the three options of “fast, cheap, or accurate,” and that achieving the highest level of accuracy can take time. Another participant suggested that doing a basic drug screen on all cases and then flagging a subset of cases for further testing could speed up toxicology testing.

Several other issues feed into obtaining timely toxicology results. For example, the stability of some biological samples collected at the scene; scene data, including onsite toxicology testing; and the large amount of data the labs receive are all important

Timeliness: Toxicology and Death Certification

- Improve timeliness of toxicology results.
- Improve timeliness of death certificate completion to inform decision-making related to emerging hotspots and incidents.
- Standardize timeline for finalizing pending death certificates.
- Improve timeliness of responses to cause-of-death queries that seek more information about death certificates that lack specific or unclear information. State registrars’ offices issue cause-of-death queries to obtain more information about a death. The response to the query allows the state registrar to add information to the death record. (CSTE, 2016)

considerations. One participant indicated that better coordination between the medicolegal death investigator and crime lab could result in better integration of the evidence, including digital forensics and toxicology. Decisions about what toxicology to run are important because there is only so much of any one sample available, yet several participants indicated it is not always clear who decides which toxicology tests to perform. Ensuring coordination between the death investigator and associated labs (e.g., crime, toxicology) and clarifying who makes decisions about toxicology testing could also improve toxicology delays.

Finally, the medicolegal death investigation system is overburdened. One participant noted that toxicology labs are overwhelmed with samples to process. Similarly, medical examiner and coroner offices are overtaxed, so it has become routine to complete minimal toxicology and often no autopsy, even though this is against all standards. The offices are doing their best to keep up.

Toxicology Standards

Some participants raised the possibility of creating a national standard for toxicology, which would guide what to test for, and suggested that this has the potential to improve the quality of toxicology testing for drug overdose deaths. A few participants shared divergent opinions on the value of this approach. On the one hand, toxicology standards could help get more results more quickly. On the other hand, there are cost barriers to this approach, as well as a constantly evolving list of drugs. There are also regional variations in new drugs, and not all regions would benefit from testing for a new drug that is only present in one area. Several participants suggested that a national accreditation standard for toxicology labs is more crucial than a national standard for what to test. A few participants discussed how to decide which post-mortem toxicology panels to run, and one state shared an example of using seizure data to inform selection of the basic or enhanced toxicology panel. Finally, a few participants discussed creating standards for the timeliness of returning toxicology data.

Funding for Toxicology Testing

Many participants indicated that funding for toxicology is insufficient. One participant stated that better funding of the whole U.S. death investigation system would yield more complete information. The group discussed two grant programs that support toxicology and improving drug specificity data. For FY 2017, CDC provided supplemental funding through the [Enhanced State Opioid Overdose Surveillance's \(ESOOS\) State Unintentional Drug Overdose Reporting System](#) and required that at least 60 percent of the supplemental funds go directly to supporting medical examiners and coroners, including comprehensive toxicology testing. Awarded states have selected different ways of distributing the money to medical examiners and coroners.

Another funding source for toxicology is the [Paul Coverdell Forensic Science Improvement Grants Program](#), which the U.S. Department of Justice's National Institute of Justice (NIJ) administers to improve the quality and timeliness of forensic science and medical examiner/coroner services. Coverdell program funds may be used to support DNA testing or toxicology testing, but this funding stream provides funding for all forensic science services, not just toxicology and medicolegal death investigation. The proportion of Coverdell funds that go to states is decided statutorily, and states allocate the money to counties in different ways. Over the last few years, states have distributed a higher proportion of the total funds available directly to medical examiners and coroners. Working closely with a state administering agency, such as a criminal justice division, public safety office, or governor's office, could be very helpful in receiving Coverdell funds (all state administering agencies are listed on the Coverdell website). Several participants said they were not aware of

programs such as ESOS and Coverdell.

Benefits and Drawbacks of Different Types of Toxicology Labs

Participants discussed the value of private and fee-for-service labs, particularly as a way to get toxicology results more quickly. Several participants seemed to value private labs over public ones, whether fee-for-service or not. One participant suggested that death certifiers should have a greater awareness of the options for toxicology testing, including private labs, and suggested creating a decision tree to help medical examiners and coroners assess which type of lab to use. A handful of medical examiners and coroners stated that they already have internal toxicology labs funded to do their testing, so they cannot choose a private lab. A few participants shared mixed views about private versus municipal toxicology labs and acknowledged that private labs are a good option for some pieces of particular cases when they are accredited and use a validated method. One participant also noted that there are government forensic toxicology labs that work quickly.

DISCUSSION THEME THREE: TRAINING AND EDUCATION

Develop and offer training and education to coroners and medical examiners about the importance of drug specificity on the death certificate, how to complete the death certificate, and related issues.

Summary Points

- Training and education for coroners, death investigators, and medical examiners is essential to improving drug specificity on death certificates. State health departments, state legal and criminal justice officials, and attorneys general can collaborate to develop and deliver such training.
 - Medical examiners and forensic pathologists need continuing medical education (CME) on interpreting complicated toxicology testing and interpreting toxicology results for complicated deaths.
 - Medical examiners and coroners can convene to develop joint position papers and standards for death certifiers. One possible project for such a group is to update the NAME position paper, Recommendations for the Investigation, Diagnosis, and Certification of Deaths Related to Opioid Drugs (2013), in light of the emergence of new drugs.
 - Epidemiologists need to understand the medicolegal death investigation system.
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Education for Coroners and Medical Examiners

Many meeting participants said that one of their key priorities is educating coroners, death investigators, and medical examiners on improving drug specificity on death certificates.

Some participant comments suggested that coroners may need more education than medical examiners. One coroner said that the coroner community is “one of the most neglected groups nationally ... and they need education on why this data is important.” Several coroners agreed that identifying channels and methods for messaging and education for coroners would take effort. The Organization of Scientific Area Committees for Forensic Science (OSAC), part of the National

Institute of Standards and Technology (NIST), and ABMDI were named as key partners in educating and communicating with coroners and medical examiners. In some cases, the state health department staff and vital registrar staff could be additional resources for coroner training and education. For example, one

Suggested Topics for Coroner and Medical Examiner Training and Education

- Provide specific instructions for medical examiners and coroners about how to complete the death certificate to improve drug specificity.
- Educate participants about how the lack of drug specificity on death certificates limits a region’s access to data that can inform prevention and intervention efforts. This can then limit access to funding opportunities to improve medicolegal death investigation systems and processes.
- Provide education on how drug specificity information is used to inform public health efforts.
- Train coroners and medical examiners on how to use electronic reporting and other data systems.
- Deliver training during medical examiner fellowships that addresses how to interpret toxicology results in cases of complicated deaths and complete the death certificate.

method of direct education for coroners and medical examiners is for the state health department to query medical examiners and coroners, as some states already do, to obtain more information when there is not enough detail initially submitted on the death certificate. Not only does this assist a state in obtaining needed information, it educates the death certifier for similar situations in the future. Additionally, state health departments, state legal and criminal justice officials, and attorneys general could collaborate to develop and deliver training for coroners and medical examiners. Numerous meeting participants acknowledged the importance of bringing together medical examiners and coroners to develop joint position papers and standards. These two groups are not often exposed to each other's educational materials, according to several participants. As mentioned previously, for FY 2017, CDC provided supplemental funding through ESOOS and required that at least 60 percent of supplemental funds go directly to support medical examiners and coroners. Some states have used these funds for training and education activities. The specific education and training topics discussed at the stakeholder meeting are included in the box above.

Education for Epidemiologists

Epidemiologists in attendance indicated that they and their peers, along with their fellow state health department colleagues and vital statistics staff, also need education about the medicolegal death investigation process, including information about the roles and responsibilities of medical examiners, coroners, and medicolegal death investigators. This education and training would also necessitate input and engagement from the legal side of the medicolegal death investigation field, such as state legal and criminal justice officials and attorneys general. Epidemiologists also said that better ongoing relationships and coordination between state health departments, medical examiners or coroners, and epidemiologists will help build a state's knowledge of its own data on drug specificity for drug overdose deaths. This would lead to continuous assessment of selected indicators over time and lay a foundation for ongoing improvements to death certificate data for drug intoxication deaths. This feedback loop between multiple stakeholders would have a positive impact on surveillance data and general coordination across sectors, and would build awareness of the administrative and legal processes essential to providing high-quality death certificate data, current successes, and areas for improvement in a state's drug specificity on death certificates.

Additional Conversations

Participants discussed several other noteworthy topics related to coroner and medical examiner education. These conversations touched on several topics:

- Building connections between medical examiners and coroners and their associations (more on this in [Appendix 4](#)).
- Increasing certification of medicolegal death investigators, coroners, and medical examiners, and increasing accreditation of coroner and medical examiner offices.
- Addressing the shortage of forensic pathologists through policy change.

The Medicolegal Death Investigation Subcommittee of the National Commission on Forensic Sciences (NCFS) has released a number of reports relevant to certification and accreditation, listed below:

- [Certification of Medicolegal Death Investigators](#)
- [Accreditation of Medicolegal Death Investigation Offices](#)
- [View of the Commission Certification of Medicolegal Death Investigators](#)
- [View of the Commission Accreditation of Medicolegal Death Investigation Offices](#)

- [Views of the Commission Increasing the Number, Retention, and Quality of Board-Certified Forensic Pathologists](#)
-

DISCUSSION THEME FOUR: GUIDANCE ON FILLING OUT THE DEATH CERTIFICATE

Develop and disseminate guidance on the death investigation and death certification processes as they relate to drug overdose deaths.

Summary Points

- Death certifiers need specific guidance on how to complete the death certificate. This guidance should include information on how to list drugs involved and provide sample language and example death certificates. Stakeholders at the meeting provided input on a forthcoming *Reference Guide for Certification of Drug Intoxication Deaths*, which NCHS is developing. This guidance document will be an important source of information on how to complete the death certificate, particularly how to list drugs on the death certificate.
 - The medicolegal death investigation community needs specific guidance on determining which drugs to list on the death certificate when multiple drugs are involved or present. Joint position papers are also needed on this topic.
-

Guidance on Completing the Death Certificate

Many meeting participants expressed a need for guidance on completing the death certificate. This resource would ideally provide both general guidance about completing the death certificate, as well as very specific guidance, including example death certificates and scenarios and model language. *A Reference Guide for Certification of Drug Intoxication Deaths*, forthcoming from NCHS, will be an important part of this guidance. The box to the right contains a summary of the main themes from the discussion about the NCHS guide on completing the death certificate.

In addition to the reference guide, participants indicated that states could use the following strategies to improve drug specificity: (1) Submit pending death certificates to meet timeliness requirements, and adhere to agreed-upon timelines for providing completed death certificates after the toxicology results have been submitted, and (2) query medical examiners and coroners, as some states already do, to obtain more information when there is not enough detail initially submitted on the death certificate. A participant mentioned that the NIST OSAC Medicolegal Death Investigation Subcommittee could support a process to formalize guidance into standards for the death certification process, and OSAC

Themes from Discussion about NCHS Reference Guide

- Clarify where to write the drugs contributing to the death and where to write the other drugs. Which drugs are listed should be discussed with a medical professional.
- Address how the public health sector uses the drug information. Death certifiers should know the value of that data for prevention, education, intervention, and surveillance.
- Create a glossary of terms in the reference guide. Language and terminology on the death certificate are important for reducing stigma and ensuring accuracy.
- Clarify NCHS guidance on completing Box 43 (how the injury occurred).
- Include examples of death certificates.

could communicate the standards to stakeholders. Creating such standards would take time, but multiple meeting participants said the field needs standards for how to complete the death certificate. A few participants also mentioned throughout the meeting that it would be beneficial to have more cross-pollination and connection between coroners and medical examiners. Both coroners and medical examiners noted that resources developed by one group were not often shared with the other, but that such sharing would be beneficial.

Drug Intoxication Deaths with More than One Drug Present

An ongoing challenge directly related to completing the death certificate is how to address drug overdose death cases where more than one drug is found to be involved or present in a death. Participants shared two main perspectives on this topic: (1) Develop and codify guidance on how to approach these deaths and complete the death certificate, and (2) develop a way for certifiers to communicate to stakeholders that it wasn't possible to determine which drug was responsible for the death. According to an organizational representative, NAME is planning to write a position paper on this issue in the future.

DISCUSSION THEME FIVE: VERIFICATION OF FACT OF DEATH

Develop a mechanism to provide an official certification of death that would be available for next of kin for administrative purposes, but doesn't include medical information.

Summary Points

- The health information on death certificates may be sensitive and is not needed for many administrative purposes. Furthermore, certifiers may not include specific and actionable information that they deem too sensitive (e.g., drug overdose or conditions that may have led to suicide) on the death certificate due to concerns that the family would be harmed.
 - Creating a mechanism for an official certification of death that doesn't include medical information will require a change in the operations in vital registrars' offices, may necessitate a policy change, and would also have cost implications. However, it could have a significant, long-lasting positive impact on the quality of death data.
-

Mechanism for Administrative Certification of Death

Throughout the meeting, a number of participants raised the idea of developing a mechanism to provide an official certification of death that doesn't include medical information. One participant suggested that this approach be established as a national standard. This certification of death would be for next of kin administrative purposes, such as closing bank accounts. This idea came up because there are several issues related to providing a complete death certificate with the current system. One issue is the concern that certifiers may not include specific and actionable information that they deem too sensitive, such as a drug overdose or conditions that may have led to suicide, on the death certificate because of concern for the family and the stigma related to certain medical issues. Another issue is related to the value of having additional space on the death certificate that is not public to write more information, context, and findings. This additional information may be useful for surveillance and data purposes.

Implications

With the advent of electronic death registration, vital registrars are no longer relying on paper certificates, so it is technically possible to generate a portion of the death certificate without health information. The policy implications of this shorter death certificate would need to be explored. For example, could families use this version as an official document to settle estates, close accounts, and complete other administrative actions? There may also be other ways to bypass paper altogether by using electronic retrieval systems to verify fact of death. Many participants mentioned that this solution would take significant time and could be costly. It would likely require a policy change. Other considerations for such a change include existing statutes and regulations within that jurisdiction, feasibility for the registrar's office, and the certificate paper vendor. Nonetheless, many participants seemed interested in exploring this possibility. With growing concern about the privacy of health information, this provides a logical next step in the effort to modernize vital records.

DISCUSSION THEME SIX: COORDINATION OF MEDICOLEGAL DEATH INVESTIGATION

Enhance federal- and state-level coordination of work related to coroners, medical examiners, and other medicolegal death investigation stakeholders.

Summary Points

- Creating federal- and state-level offices to coordinate the medicolegal death investigation community would help consolidate activities and supports.
 - Coroner and medical examiner offices need funding for computers and other technology, toxicology testing, and personnel.
-

Establishing Federal and State Offices for Medicolegal Death Investigation

Several participants suggested creating federal- and state-level offices to coordinate work related to coroners, medical examiners, and other medicolegal death investigation stakeholders. Several commissions have explored the concept of a federal-level office, including [Recommendation to the Attorney General Formation of a National Office for Medicolegal Death Investigation](#),¹¹ which was adopted by the NCFS Medicolegal Death Investigation Subcommittee. There is currently no single federal agency that serves as the central coordinating body for the medicolegal death investigation community and oversees its many streams of work; a similar office at the state level may also be useful. Participants mentioned that a federal office could potentially oversee the following areas: coordinating related data systems, convening the medicolegal death investigation community, fostering relationships across stakeholders, overseeing accreditation and certification programs (including potentially requiring mandatory certification of offices), and funding systems change/coordination efforts at the local and state levels to improve data collection.

In states with a county-based death investigation system, a state office could coordinate and facilitate education, collaboration, and other support systems for death certifiers and medicolegal death investigators. Some states already have a state medical examiner with coordinating responsibilities, but many states do not have a system in place for state-wide coordination. Such an office could contribute to greater collaboration and alignment across agencies and sectors (e.g., health, justice).

Resource Development

Meeting attendees devoted time throughout the meeting to discussing the need for financial resources across coroner and medical examiner offices, such as funding for computers, toxicology testing, and personnel. Funding and resource development could be another role for a central office that oversees activities related to medicolegal death investigation.

ACTION AREAS TO CONSIDER FOR IMPROVING DRUG SPECIFICITY ON DEATH CERTIFICATES

During the final session of the in-person meeting in August 2017, meeting participants generated and prioritized specific actions that they considered to be feasible over the next one to two years across the five key areas, listed below. These are the areas where meeting participants suggested focusing initial energy to improve the completeness and specificity of drug information on death certificates for drug overdose deaths. Where discussed, key stakeholders are listed for each action area. Additional ideas for improving drug specificity and completeness on death certificates are available in [Appendix 4](#) in the Potential Solutions document.

Financing

- Improve funding and data systems for medicolegal death investigation. *Key stakeholders to engage:* Medical examiner and coroner groups, local government groups, ASTHO, National Governors Association, and National Association of Attorneys General.
- Integrate EDRS and medical examiner and coroner case management systems, and leverage current work around Meaningful Use and healthcare transformation to improve EDRS. *Key stakeholder to engage:* National Committee on Vital and Health Statistics.

Policy

- Create federal policies that will guide what is needed from medical examiners and coroners at the state and local levels, which can guide changes in local and state policy and practice.
- Create a home in the federal government for medicolegal death investigation.
- Use the Potential Solutions document to develop a menu of policy options for state health departments and other stakeholders.
- Develop model laws related to medicolegal death investigation.

Complementary Sectors and Partners

- Advance public health and law enforcement partnerships and collaboration.
- Establish coalitions comprised of local health departments and treatment centers at the county level to address mental and behavioral health issues.
- At the state level, hold an initial meeting between medical examiners and coroners, vital statistics, and epidemiologists to talk about the status of drug specificity on death certificates in their state.
- Encourage state health departments to obtain more detailed information about death certificates that lack sufficiently detailed information on the drugs involved in the death. This can be done through a query process performed by the state registrar's office to obtain more information about a death. The response to the query allows the state registrar to add information to the death record.¹²
- Develop a train-the-trainer model that can be implemented widely to teach death certifiers about both how to complete the death certificate and the surveillance value of providing information on the specific drugs involved.

Timeliness

- Improve the timeliness of toxicology data to ensure timely death certificate submissions.

- Address pending death certificates by identifying and standardizing the process for revising or amending the death certificate once more information is available (e.g., toxicology results).

Education and Training

- Update NAME position paper on multiple drug overdose deaths.
- Use joint presentations to educate coroners and medical examiners about the importance of drug specificity on death certificates and actions to improve specificity.
- Develop joint position papers between medical examiners and coroners about medicolegal death investigation and death certification.
- Develop an educational slide deck and use it for CMEs, ABMDI credits, and other purposes.
- Develop a national standard for how drugs are listed on the death certificate and educate coroners and medical examiners on it.
- Have state health departments assist medicolegal death certifiers in getting certified and support medical examiner and coroner offices in seeking accreditation. There are currently two organizations—NAME and IACME—that offer accreditation for medical examiner and coroner offices, while ABMDI offers certification for medicolegal death investigators.¹³
- Develop or find the appropriate communication mechanisms for CDC and federal and state agencies to effectively reach medical examiners and coroners.

IMPLICATIONS AND NEXT STEPS

Based on stakeholder contributions at the meeting, ASTHO offers the following considerations and opportunities for medicolegal death investigation, state health officials, and state health departments in Table 2. The list contains potential actions to address the underlying issues, challenges, and opportunities that individual participants presented.

TABLE 2. IMPLICATIONS OF ASTHO MEETING FOR MEDICOLEGAL DEATH INVESTIGATION AND STATE HEALTH DEPARTMENTS	
Medicolegal Death Investigation Field	State Health Officials/ State Health Departments
<i>Leadership and Vision</i>	
<ul style="list-style-type: none"> • Coroner, medical examiner, and death investigator associations can play a role in building connections across medicolegal death investigation stakeholders. • Federal agencies, including NCHS, CDC, and others, can play a key role in providing guidance and setting standards and expectations for ongoing death certificate data improvements. • Coordination between leaders in the coroner and medical examiner communities and sister agencies would support the development and implementation of a long-range vision to improve drug specificity data. 	<ul style="list-style-type: none"> • State health officials and their teams have an opportunity to partner with and convene medical examiners and coroners, their associations, vital registrars, and others to improve drug specificity on death certificates.
<i>Communication</i>	
<ul style="list-style-type: none"> • Professional associations representing coroners, medical examiners, and death investigators have an opportunity to develop effective communication channels to reach coroners and medical examiners with information about partnerships and coalitions, how to apply for funding, and accessing education opportunities. 	<ul style="list-style-type: none"> • State health departments can ensure that medical examiners and coroners are on the state health alert network to receive relevant information. • They can also support communication and education efforts to reach coroners and medical examiners, both via existing state health department communication channels or the development of new efforts via web, email, print, and virtual engagement.
<i>Policy</i>	
<ul style="list-style-type: none"> • Medicolegal death investigation stakeholders can communicate new standards, guidance, and policy changes to death certifiers at the state and local levels. 	<ul style="list-style-type: none"> • State health departments should be aware of and/or help inform policy initiatives, such as (1) increasing medical examiner/coroner access to EHRs and PDMPs, and (2) creating a two-part death

	certificate (fact of death and separate, detailed information for surveillance).
<i>Timeliness</i>	
<ul style="list-style-type: none"> • The medicolegal death investigation community has an opportunity to engage in discussions to establish a process for finalizing pending death certificates. • The medicolegal death investigation community may benefit from working with partners to leverage more funding to address this issue and learn from best practices in the field. 	<ul style="list-style-type: none"> • State health departments could play a convener role in the process to standardize how death certificates go from pending to final. • State health departments and state health officials could help with or lead proposals to fund additional toxicology, including re-allocations of current budgets, and support efforts to address timeliness of toxicology reporting.
<i>Education and Training</i>	
<ul style="list-style-type: none"> • Medicolegal death investigation stakeholders could generate educational materials about emerging standards and guidelines for completing the death certificate and share them broadly within the medicolegal death investigation community. 	<ul style="list-style-type: none"> • State health departments should be seen as a partner in developing and delivering some of these educational opportunities for coroners and medical examiners, particularly around how the data are used to inform public health prevention and intervention efforts.
<i>Financing</i>	
<ul style="list-style-type: none"> • There are significant financial implications related to toxicology testing, increasing the number of forensic pathologists, improving data systems, and achieving interoperability across data systems. • Another side of financing for medicolegal death investigation is ensuring that medical examiners and coroners are notified of and supported to apply for available funding opportunities. This requires both better communication and more intentional partnerships with stakeholders who can share funding opportunities with medical examiners and coroners. 	<ul style="list-style-type: none"> • State health departments should be aware of the significant financial needs for toxicology. Additional funding for toxicology could be directed to personnel, instrumentation, or a new results delivery system. • Improving and updating EDRS is also a financial priority. • An additional area to explore is student loan forgiveness for forensic pathologists, which could increase the number of forensic pathologists working in the field. • State health departments could address some of these issues by partnering with the medicolegal death investigation community to apply for funding or address and adjust current budgets.
<i>Data-Driven Action</i>	
<ul style="list-style-type: none"> • Two areas of opportunity are (1) engaging coroners and medical examiners in improving data systems, and (2) building coroner and medical examiner capacity around using data systems. • Key leaders in the medicolegal death investigation field could provide more 	<ul style="list-style-type: none"> • Supporting effective data capture, systems interoperability, and access are the biggest areas of opportunity for state health departments and state health officials. • State health officials and their teams can apply for funding to support developing and integrating data systems and convene

<p>education about the public health importance of the data included on the death certificate.</p>	<p>relevant partners to help improve data integration and access for medical examiners and coroners, including educating stakeholders about why this is important.</p>
<p><i>Complementary Sectors and Partners and Engaged Individuals</i></p>	
<ul style="list-style-type: none"> • Medical examiners, coroners, and death investigators are key stakeholders in improving drug specificity on death certificates and need to be engaged in multi-sector and multi-stakeholder efforts on this topic. 	<ul style="list-style-type: none"> • State health departments have an opportunity to support coordination and collaboration throughout the medicolegal death investigation system by partnering closely with state legal and criminal justice officials, including attorneys general. • State health departments and state health officials are expert conveners. State health departments are sometimes home to key medicolegal death investigation stakeholders, but they can also bring together disparate partners. State health departments can both support and drive these necessary coalitions.

APPENDICES

1. [Full Meeting Participant List – Appendix 1](#)
2. [Full Meeting Agenda – Appendix 2](#)
3. [Stakeholder Individual Priorities – Appendix 3](#)
4. [Potential Solutions with Action Steps – Appendix 4](#)

¹ Hedegaard H, Warner M, Miniño AM. Drug overdose deaths in the United States, 1999–2016. NCHS Data Brief, no 294. Hyattsville, MD: National Center for Health Statistics. 2017.

² Ibid.

³ Ibid.

⁴ Ibid.

⁵ Warner M, Paulozzi LJ, Nolte KB, Davis GG, Nelson LS. “State variation in certifying manner of death and drugs involved in drug intoxication deaths.” *Acad Forensic Pathol.* 2013;3(2):231-237.

⁶ CDC. “National Notifiable Diseases Surveillance Systems (NNDSS).” Available at <https://wwwn.cdc.gov/nndss/data-collection.html>. Accessed 11-8-17.

⁷ National Science and Technology Council. “Strengthening the Medicolegal Death Investigation System: Improving Data Systems.” Available at https://obamawhitehouse.archives.gov/sites/default/files/microsites/ostp/NSTC/strengthening_the_medicolegal_death_investigation_system_final.pdf. Accessed 12-20-17.

⁸ Healthcare Transformation Task Force. “About Us.” Available at: <http://hcttf.org/aboutus/>. Accessed 11-13-17.

⁹ Office of the National Coordinator for Health Information Technology (ONC). “EHR Incentives and Certification.” Available at <https://www.healthit.gov/providers-professionals/meaningful-use-definition-objectives>. Accessed 11-8-17.

¹⁰ Tharp-Myers A, Hobron K, Orr R. “The Utility of a Prescription Monitoring Program in Death Investigation: The Virginia Experience.” *Academic Forensic Pathology.* Vol 7, issue 1.

¹¹ National Commission on Forensic Science. “Recommendation to the Attorney General: Formation of a National Office for Medicolegal Death Investigation.” Available at <https://www.justice.gov/archives/ncfs/page/file/905561/download>. Accessed 12-1-17.

¹² Council of State and Territorial Epidemiologists. “Recommendations and Lessons Learned for Improved Reporting of Drug Overdose Deaths on Death Certificates.” April 2016. Available at http://c.ymcdn.com/sites/www.cste.org/resource/resmgr/PDFs/PDFs2/4_25_2016_FINAL-Drug_Overdos.pdf. Accessed 11-2-17.

¹³ National Science and Technology Council. “Strengthening the Medicolegal Death investigation System: Accreditation and Certification, a Path Forward.” Available at http://www.thecfso.org/advocacy/2017/OSTP_accreditation_recommendation.pdf. Accessed 11-2-17.