AN INDEPENDENT AUDIT OF

RESTRAINT-RELATED DEATH INVESTIGATIONS

AT MARYLAND'S OFFICE OF THE CHIEF MEDICAL EXAMINER (OCME) FROM 2003-2019

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TABLE OF CONTENTS

STATE OF MARYLAND

OFFICE OF THE GOVERNOR

Wes Moore

Dear Maryland Residents,

I write to announce the release of a statewide audit report entitled, "An Independent Audit of Restraint-Related Death Investigations at Maryland's Office of the Chief Medical Examiner (OCME) from 2003 – 2019." The report is the culmination of a 4-year effort, spearheaded by the Office of the Attorney General (OAG). This audit responds to public outcry from medical professionals across the country who expressed concerns about the former leadership at the Maryland Office of the Chief Medical Examiner, the agency charged with determining the cause and manner of an individual's sudden or unexpected death.

Many Marylanders have never heard of the Office of the Chief Medical Examiner. Nevertheless, their duties, responsibilities, and actions help to inform legal proceedings and provide clarity to families. Determining the cause and manner of death – and doing so accurately and precisely – is one of the most important tools we have to help guide legal investigations. Just as an accurate accounting of cause and manner of death can help bring individuals to justice, so too can an inaccurate accounting lead to serious gaps.

I have made clear from the beginning of our administration that we must do more to restore the frayed bonds of trust between the stewards of our justice system and the communities they are duty-bound to serve. In an effort to promote transparency, Maryland became the first state in the country to thoroughly evaluate its medical examiner system to ensure accuracy and integrity. The results of this report are the product of four years and two administrations, from former Governor Larry Hogan and Attorney General Brian Frosh to the Moore-Miller Administration and Attorney General Anthony Brown.

The Audit studied sixteen years of files at the Office of the Chief Medical Examiner, ultimately evaluating 87 different death investigations, where the death occurred during or soon after the individual was restrained. As you review the report, you will notice that the Audit makes several findings regarding the policies and procedures at the OCME during that sixteen-year timeframe. Notably, the Audit's independent case reviewers' manner-of-death opinion differed from the official OCME determination for 44 of the 87 cases, including 36 cases that the case reviewers deemed homicides and OCME ruled as either undetermined, accidental, or natural. These findings are of great concern and demand further review.

This is a complex and sensitive matter of public concern, particularly for the families of the deceased. This audit marks the beginning of a long conversation – one that must be handled with honesty, delicacy, resolve, and deep consideration. As a first step in that work, it is important to view the results of this report through the unique lens they represent: the operations of the Office of the Chief Medical Examiner from 2003 to 2019. The State has made several significant improvements to

OCME since 2019, and, more specifically, since the beginning of the Moore-Miller administration. These include:

- Conducting a national recruitment search and appointing Dr. Stephanie Dean as the Chief Medical Examiner in November 2023.
- Under Dr. Dean's leadership, OCME:
    - Agreed to follow the recognized best practices of the National Association of Medical Examiners (NAME) recommendations for handling in-custody deaths;
    - Regularly holds case conferences to assist medical examiners in completing difficult or complex cases by presenting the cases to a group of peers for review;
    - Reduced the case backlog and is meeting the NAME standard of completing 90% of cases within 90 days;
    - Reduced a staffing shortage; and
    - Maintained a provisional NAME accreditation.
- In 2020, five years before the National Association of Medical Examiners disavowed the term "excited delirium" as a valid medical diagnosis or cause of death, OCME updated its standards of practice and discontinued use of the term.
- In 2023, the General Assembly passed HB977, which changed the role of the Post Mortem Examiners Commission (PMEC) and transferred direct responsibility and accountability for the OCME's operations to the Maryland Department of Health (MDH). Prior to this, the PMEC had oversight authority over the Office of the Chief Medical Examiner, including its policies, procedures, and personnel.
- In 2024, the General Assembly passed HB969, which allows decedent families to petition the OCME to correct findings and conclusions related to the cause and manner of death.

Although progress has been made, there is still more to do. In response to the Audit's findings, I have signed an Executive Order to begin the next phase of our work. It is entitled, "Advancing In-Custody Restraint-Related Death Investigations in Maryland." The Executive Order:

- Directs the Attorney General, in consultation with local State's Attorneys Offices, to review each case included within the Audit to determine if the case should be reopened for investigation. If an investigation is necessary, I have directed the Maryland Department of State Police to assist.
- Creates the Maryland Task Force on In-Custody Restraint-Related Death Investigations—a multidisciplinary entity consisting of state and government officials, the Office of the Chief Medical Examiner, the Maryland Department of Health, legal professionals, law enforcement, a community advocate, and experts in forensic pathology or medicolegal death investigations.
- The Task Force is charged with:
    (1) Identifying ways to improve in-custody restraint-related death investigations in Maryland;

(2) Making recommendations to establish a multidisciplinary statewide oversight committee to review future manner-of-death determinations for all in-custody restraint-related deaths within the State;

(3) Implementing ways to reduce the risk of in-custody restraint-related deaths;

(4) Evaluating current training standards for law enforcement and promoting greater collaboration with mental health and substance abuse professionals; and

(5) Exploring the need and feasibility of conducting a subsequent audit.

- Directs the Maryland Department of Health to review the practice and policy recommendations provided in the Audit and conduct a need-based analysis for implementing the recommendations related to the Office of the Chief Medical Examiner. MDH will also work with OCME to improve how in-custody restraint-related deaths are investigated, facilitate any necessary training, and ensure that OCME consistently operates in accordance with National Association of Medical Examiners standards.
- Requires MDH and OCME to deliver a report detailing their progress in carrying out the duties outlined in the Executive Order.

I also want to emphasize that our administration will continue to uplift and support our hard-working medical examiners, law enforcement, and correctional and security officials, who are the keystones of our justice system and dedicate their lives to protecting our people, honoring our laws, and maintaining public order. Now is the time to build firm partnerships across all levels of society – and spark new collaborations between legal professionals, law enforcement, and medical examiners.

In-custody restraint-related death investigations represent less than 1% of the cases that the Office of the Chief Medical Examiner handles. Still, we must continue to take the necessary steps to improve our policies and procedures for this 1%, in keeping with my firm commitment to leave no one behind. I am confident in the new leadership at both the Maryland Department of Health and the Office of the Chief Medical Examiner, and I am confident that Maryland will serve as a model for medical examiner systems throughout the country.

This Audit is not the end – it is a continuation of our commitment to improving government oversight and serving all Marylanders to the very best of our ability. And our dedication to that mission will not waver.

Sincerely,

Wes Moore
Governor

CAROLYN A. QUATTROCKI
Chief Deputy Attorney General

LEONARD J. HOWIE III
Deputy Attorney General

CARRIE J. WILLIAMS
Deputy Attorney General

SHARON S. MERRIWEATHER
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STATE OF MARYLAND
OFFICE OF THE ATTORNEY GENERAL

ANTHONY G. BROWN
Attorney General

Dear Marylanders,

The Office of the Attorney General has completed a comprehensive four-year audit of the Maryland Office of the Chief Medical Examiner (OCME), examining 87 cases where individuals died while under restraint, typically by law enforcement. Our findings require immediate attention.

In 36 of these cases, all three independent forensic pathologists unanimously concluded the deaths were homicides where the OCME had classified them as "undetermined," "accidental," or "natural." In an additional 5 cases, two of three reviewers determined deaths should have been classified as homicides. This means that in nearly half of all reviewed cases, our expert reviewers disagreed with the original classifications.

This audit was initiated in response to serious concerns raised when former Maryland Chief Medical Examiner, Dr. David Fowler, testified in 2021 that George Floyd's death wasn't a homicide but rather due to "undetermined" causes. This testimony prompted more than 450 medical experts to question similar death determinations made in Maryland under Dr. Fowler's leadership.

We recognize these findings have profound implications for families seeking closure, communities requesting transparency, and the dedicated law enforcement officers who serve our state. It's important to note that a homicide determination is a medical classification, not a judgment of criminal wrongdoing or police misconduct.

At the Governor's direction, our office is reviewing each of the 41 cases thoroughly, in consultation with State's Attorneys' Offices, to assess whether further action is appropriate and identify areas for improvement. To the families who lost loved ones: We're working to reach all of you. If we haven't connected yet, please contact us through our dedicated hotline or email.

The audit also validated concerns that bias may have affected death investigations in Maryland. Addressing these concerns benefits everyone in our system of justice—including the vast majority of law enforcement professionals who perform their duties with integrity and deserve clear, consistent standards.

Together with Governor Moore, we're committed to implementing recommendations to improve training, standardize procedures, and promote objectivity. These changes will strengthen public trust while providing law enforcement with clearer guidance.

The thoroughness of this four-year audit reflects the complexity and importance of the task. Each case required careful review by multiple independent experts, examination of extensive medical and investigative records, and application of consistent evaluation criteria. This meticulous approach was essential to ensure our findings could withstand scrutiny and provide a solid foundation for necessary reforms.

The path forward requires collaboration—state officials, medical professionals, law enforcement agencies, impacted families, and communities must work together to ensure that when someone dies in custody, the cause is determined fairly and accurately. Our justice system depends on this shared commitment.

Together, we can build a Maryland where our justice system genuinely serves all its people, where public safety and individual rights are equally protected, and where truth guides our actions.

I extend my deepest appreciation to the dedicated experts and staff who made this audit possible, approaching this sensitive work with diligence and integrity. Thank you to the OCME ADT members, Dr. William C. Thompson, Dr. Alfredo Walker, Dr. Michael Freeman, Dr. Deborah Davis, and Dr. Jack Crane. Thank you to our Case Manager, Dr. Jeff Kukucka, for managing the case reviews, leading the audit report's writing process, and finalizing its findings in conjunction with the OCME ADT. Special thanks to the following OAG staff for supporting the OCME Audit's work, especially Carolyn Quattrocki, Chief Deputy Attorney General, Zenita Wickham Hurley, Deputy Attorney General, Carrie Williams, Deputy Attorney General, Menelik Coates, Deputy Division Chief, Criminal Appeals, Tiffany Dayemo, Assistant Attorney General, and Aneesa Mahmud.

I also want to thank former members of the OCME ADT who stood up the OCME Audit, including Dr. Itiel Dror and Dr. Stephen Cordner. Thank you also to Attorney General Brian Frosh and former OAG staff Elizabeth Embry and David Eppler for their leadership in staffing the OCME Audit and members of the Governor's Office of Legal Counsel for providing critical collaboration and funding support for the Audit: Amanda La Forge, Chief Counsel, Jessica Williams, Associate Deputy Legal Counsel, and former Deputy Counsel Kunle Adeyemo.

Sincerely,

Anthony G. Brown

Executive Summary

In May 2020, George Floyd died while being physically restrained by several Minneapolis police officers. A viral bystander video showed one of these officers, Derek Chauvin, kneeling on Floyd's neck for over nine minutes, during which Floyd said "I can't breathe" over 20 times, became unresponsive, and went into fatal cardiopulmonary arrest. In April 2021, Chauvin was tried for Floyd's murder. Forensic pathologist Dr. David Fowler—the former Chief of Maryland's Office of the Chief Medical Examiner (OCME)—testified that Floyd's death resulted from a combination of factors, such that his death was not a homicide but rather was due to "undetermined" causes. Even so, the jury convicted Chauvin of Floyd's murder.

Following the verdict, over 450 medical experts co-signed a letter to Maryland Attorney General Brian Frosh and others, which condemned Fowler's testimony as showing "obvious bias" and demanded a "review of all the deaths in custody investigated by the Maryland OCME [during Fowler's tenure as Chief] by an appointed independent international panel of expert forensic pathologists" out of "genuine concern that there may be an inappropriate classification of deaths in custody by the Maryland OCME as either accident or undetermined to purposefully usurp a manner of death classification of homicide."

Soon thereafter, Maryland's Office of the Attorney General (OAG), in consultation with the Governor's Office of Legal Counsel (GOLC), agreed to sponsor an audit of deaths in custody investigated by OCME during Fowler's tenure (2003-2019). In September 2021, the OAG appointed an Audit Design Team (ADT) of international experts in forensic medicine and pathology, psychology, and research methodology to design and execute the audit. The ADT was tasked with designing the audit in such a way as to assess whether OCME had inappropriately classified deaths that occurred during or soon after restraint, as well as whether OCME's determinations showed patterns consistent with racial and/or pro-police bias.

From a review of over 1,300 OCME cases of death in custody from 2003 through 2019, the ADT identified 87 cases for inclusion in the audit, each involving an unexpected death during or soon after restraint. The ADT then stripped these 87 case files of extraneous or potentially biasing information, including the decedent's race, the identities of decedents and OCME staff, and OCME's determinations of cause and manner of death. To review these files, OAG recruited and thoroughly vetted an international group of 12 forensic pathologists with an average of 14 years' experience to serve as case reviewers.

From September through December 2024, three of the 12 case reviewers reviewed each of the 87 case files and independently opined on the cause and manner of death. They made these judgments both before and after learning the race of the decedent. If the three case reviewers did not all reach the same manner-of-death opinion, they were convened to discuss the case and attempt to reach consensus. OCME's cause and manner determinations were subsequently revealed to case reviewers, and each case reviewer separately commented on the reasonableness of OCME's determinations for each case.

Case reviewers' consensus manner-of-death opinion differed from OCME's manner determination for more than half (44) of the 87 audit cases, including 36 cases that case reviewers unanimously deemed homicides but which OCME had ruled as either undetermined (29 cases), accidental (5 cases), or natural (2 cases). Whereas case reviewers judged 48 of the 87 deaths as homicides, OCME ruled only 12 of those same deaths as homicides, and OCME ruled those deaths as homicides even less often if the decedent was Black (rather than White) or was restrained by police (rather than by others).

In nearly half (42) of the 87 audit cases, OCME's cause-of-death statement referenced "excited" or "agitated" delirium, which has been widely rejected as a valid cause of death. In those cases, OCME almost always certified the manner of death as 'undetermined' (93%), with only one case (2%) ruled a homicide. In contrast, case reviewers deemed 25 of those same 42 deaths (56%) to be homicides.

For 47% of cases, at least one case reviewer judged OCME's cause-of-death determination to be "not reasonable." For 66% of cases, at least one case reviewer judged OCME's manner-of-death determination to be "not reasonable." Case reviewers often noted that OCME's autopsy reports (a) failed to acknowledge restraint as a potential contributing factor when appropriate, (b) correctly acknowledged restraint as a contributing factor but did not certify the death as a homicide (thus violating the "but-for" standard that

requires deaths resulting from another person's actions, regardless of intent, to be certified as homicides), and/or (c) did not provide adequate justification for their determinations.

Regarding the quality of OCME's investigations, case reviewers frequently commented that key details about the nature and/or duration of restraint were lacking, such that video (*e.g.*, body-worn camera) footage and/or more reliable first-hand accounts of the restraint would have been helpful. Case reviewers praised OCME's regular use of consultation services (*e.g.*, cardiac pathology, neuropathology) but also noted routine deficiencies in OCME's post-mortem examinations, including the number, content, and quality of autopsy photographs. Finally, case reviewers suggested that law enforcement should be better educated on the dangers of improper restraint and trained in non-lethal restraint techniques, and that crisis response teams should include not only law enforcement but also professionals who specialize in mental health and/or de-escalation.

Informed by these findings, this report concludes with a list of concrete practice and policy recommendations to better serve public health and social justice—including, among others, adhering to the "but for" standard for homicide determinations, abandoning the discredited concept of "excited delirium," and improving the investigation and documentation of in-custody deaths.

Audit Personnel and Timeline

On September 9, 2021, Maryland Attorney General Brian Frosh announced the appointment of an Audit Design Team (ADT) of international experts in forensic pathology and behavioral science who had been vetted and recommended by the Office of the Attorney General (OAG). The ADT was tasked with developing procedures for reviewing in-custody death determinations made by Maryland's Office of the Chief Medical Examiner (OCME) during the tenure of Dr. David Fowler. The initial members of the ADT were:

- **William Thompson**, J.D., Ph.D. (ADT co-chair), Professor Emeritus of Criminology, Law & Society, University of California, Irvine;

- **Alfredo Walker**, HBM (Gold), FRCPath, DMJ (Path), MB.BS, MFFLM, MCSFS (ADT co-chair), Forensic Pathologist & Coroner, Eastern Ontario Regional Forensic Pathology Unit; Assistant Professor of Pathology and Laboratory Medicine, University of Ottawa;

- **Stephen Cordner**, MA, MBBS, BMedSc, DipCRIM, DMJ, FRCPath, FRCPA, Senior Consultant and Professor Emeritus of Forensic Medicine, Monash University;

- **Jack Crane**, CBE MB BCh FRCPath DMJ (Clin et Path) FFFLM FFPathRCPI, State Pathologist for Northern Ireland; Professor of Forensic Medicine, Queen's University Belfast;

- **Deborah Davis**, Ph.D.; Professor of Psychology, University of Nevada, Reno;

- **Itiel Dror**, Ph.D., Honorary Senior Research Associate, University College London; and

- **Michael Freeman**, Med.Dr., Ph.D., MScFMS, MPH, FRCPath, FFFLM, DLM, David Jenkins Memorial Professor and Chair in Forensic and Legal Medicine, Royal College of Physicians (London); Associate Professor of Forensic Medicine and Epidemiology, Maastricht University; Affiliate Professor of Forensic Psychiatry, Oregon Health & Science University.

On September 30, 2022, the ADT released a written proposal concerning the design, methodology, and scope of the audit of OCME's work. The ADT also provided a confidential report to Governor Larry Hogan and Attorney General Frosh regarding its preliminary investigations of the matter.

In January 2023, newly elected Maryland Attorney General Anthony Brown and Governor Wes Moore reaffirmed their commitment to the audit, and the ADT began the next phase of its work. For this phase, Dr. Cordner and Dr. Dror were unable to continue their service on the ADT due to other professional obligations, but all other members of the ADT remained on, and the ADT was also joined by:

- **Jeff Kukucka**, Ph.D., Professor of Psychology, Towson University.

From March 2023 through July 2024, the ADT collectively developed the audit materials and procedure, advised the OAG on the recruitment of case reviewers, and completed the painstaking work of obtaining, reviewing, and redacting OCME case files. From September through December 2024, Dr. Kukucka led the data collection process, including supervision of case reviewers and data analysis.

Introduction

Background and Impetus for the Audit

In 2021, following the highly publicized trial of Officer Derek Chauvin for the murder of George Floyd, concerns were raised about the work of Maryland's Office of the Chief Medical Examiner (OCME) during the tenure of its former Chief, Dr. David Fowler. The concerns arose, at least in part, from Dr. Fowler's testimony at Chauvin's trial. An open letter to Maryland Attorney General Brian Frosh and others, which was co-signed by over 450 medical experts, accused Dr. Fowler of deviating from standard medical practice in characterizing Floyd's manner of death as "undetermined" rather than as a homicide. The letter called for an investigation into OCME's practices for investigating the cause and certifying the manner of in-custody deaths under Dr. Fowler's leadership.

In response, Governor Larry Hogan and Attorney General Brian Frosh announced that Maryland's Office of the Attorney General (OAG), in consultation with the Governor's Office of Legal Counsel (GOLC), would sponsor an independent audit of OCME's investigations during Dr. Fowler's tenure at OCME. In September 2021, Attorney General Frosh appointed an Audit Design Team (ADT) composed of international experts in forensic medicine/pathology, social science, and research methodology. The ADT was tasked with designing and carrying out an audit to evaluate the appropriateness of OCME's investigations and determinations of cause and manner of death, including specifically any patterns consistent with racial and/or pro-police bias.

The ADT first performed a preliminary review of 1,313 OCME cases for keywords potentially indicating that a death occurred during or soon after restraint. From that review, the ADT identified for closer evaluation a subset of cases in which restraint by police officers or other individuals may have played a role in causing the death. The ADT interviewed OCME's Acting Chief Medical Examiner and Deputy Chief Medical Examiner concerning the history, policies, and practices of the OCME. The ADT also reviewed scientific publications and guidelines issued by professional organizations that pertained to the determination of cause and manner of death in cases involving prone (*i.e.*, face down) restraint.

In September 2022, the ADT issued a confidential interim report to Maryland Attorney General Brian Frosh and Governor Larry Hogan, stating that its preliminary investigation raised concerns that OCME had systematically (i) reached conclusions with insufficient information about the circumstances of deaths following prone restraint and (ii) routinely classified the manner of death in ways that failed to serve the fundamental purposes of the death investigation system. In particular, the ADT expressed concern that OCME may have failed to alert authorities to dangerous police practices that led to preventable deaths by inappropriately classifying deaths that stemmed from the actions of police as "undetermined," when by generally accepted standards they should have been deemed homicides.

To gain further insight into OCME's investigative practices for deaths during or soon after restraint, their consistency with generally accepted practices, and how they might be improved, the ADT recommended that an independent group of experts in forensic pathology be recruited to perform a detailed review of OCME case files describing sudden and/or unexpected deaths during or soon after physical restraint. Such cases warrant particular scrutiny because the potentially preventable death of an individual during physical restraint is an issue of vital public concern. The ADT undertook the design of the audit using scientifically valid methods designed to promote objectivity and minimize the potential for bias.

The OAG and GOLC worked together to secure funding for the proposed audit and in recruiting and thoroughly vetting 12 experienced forensic pathologists to independently review and evaluate 87 OCME case files that were identified as describing deaths that occurred during or shortly after restraint. This report describes the methodology and results of the audit, including differences in how OCME staff and independent case reviewers assessed the same cases, as well as other concerns raised by the audit findings. The report concludes with suggestions for how to improve the reliability of OCME procedures and modify policing practices in the interests of public health and social justice.

The Purpose and Importance of Medicolegal Death Investigations

Because human life is precious, the investigation of unexpected or suspicious deaths has long been viewed as vital to a just, fair, and safe society. Families of decedents have a right to know why and how a loved one died. This information is also vital to the legal system for evaluating whether a crime occurred and, if so, who is responsible. This information also plays a vital role in protecting public health and safety by identifying hazardous situations that lead to preventable deaths. Data collected by medical examiners and coroners on cause and manner of death have historically been important in identifying and devising preventive strategies to address such diverse risks as tractor roll-overs amongst farmers, poorly run methadone programs, dangerous roadway designs, toddler drownings in domestic pools, Legionnaires Disease associated with inadequately maintained cooling towers, and many others.

To serve these important purposes, medicolegal death investigations must be carried out appropriately and without prejudice. Systemic problems in such investigations not only undermine the legal system; they also undermine public officials' ability to recognize diffuse disasters, identify preventable deaths, and devise ways to save lives. Inappropriately labelling a natural death, accident, or suicide as a homicide—or conversely, mistaking a homicide for a natural death—may result in a miscarriage of justice whereby either an innocent person is wrongly accused of a serious crime or a guilty person escapes justice. Inappropriate death classifications can also prevent families from seeking or obtaining justice for deaths of loved ones at the hands of government authorities.

Cause and Manner of Death

A medicolegal death investigation includes a post-mortem examination of the decedent (*i.e.*, autopsy procedures) as well as an investigation of the circumstances surrounding the death. On completion of these investigations, medical examiners in the United States are expected to make two key determinations: the *cause of death* and the *manner of death*.

The *cause of death* is largely a medical determination. A position paper on investigating and reporting deaths in custody, issued by the National Association of Medical Examiners (NAME)[1] in 2017, explained that "the cause of death should be diagnosed as the underlying physical injury, disease, or combination thereof responsible for the death."[2]

Manner of death is a determination that is made in part to assist with public health statistics, although it may also have implications for subsequent criminal and civil investigations. Classification of cases according to manner of death is an American invention. Standard US death certificates began requiring a statement about manner of death in 1910. Medical examiners outside the United States rarely make manner of death determinations, as those determinations are viewed as matters for legal or judicial authorities. In Maryland, like most US states, the acceptable options for manner of death are:

- Natural
- Accident
- Suicide
- Homicide
- Undetermined

The same cause of death may be given a different manner classification based on the known circumstances of the death. A fatal gunshot wound, for example, might be classified as suicide, homicide, or accident depending on investigative information about how it happened.

[1] OAG informed NAME of this audit and invited the organization to have a representative on the Audit Design Team. NAME declined this offer.
[2] Roger A. Mitchell, Jr. et al., *National Association of Medical Examiners Position Paper: Recommendations for the Definition, Investigation, Postmortem Examination, and Reporting of Deaths in Custody*, 7 ACAD. FORENSIC PATHOL. 604 (2017).

In 2002, NAME issued "A Guide for Manner of Death Classification,"[3] which provides the following "general rules" for classification:

- Natural deaths are due solely or nearly totally to disease and/or the aging process.

- Accident applies when an injury or poisoning causes death and there is little or no evidence that the injury or poisoning occurred with intent to harm or cause death. In essence, the fatal outcome was unintentional.

- Suicide results from an injury or poisoning as a result of an intentional, self-inflicted act committed to do self harm or cause the death of one's self.

- Homicide occurs when death results from a volitional act committed by another person to cause fear, harm, or death. Intent to cause death is a common element but is not required for classification as homicide… It is to be emphasized that the classification of Homicide for the purposes of death certification is a "neutral" term and neither indicates nor implies criminal intent, which remains a determination within the province of legal processes.

- Undetermined or "could not be determined" is a classification used when the information pointing to one manner of death is no more compelling than one or more other competing manners of death in thorough consideration of all available information.

- In general, when death involves a combination of natural processes and external factors such as injury or poisoning, preference is given to the non-natural manner of death.

In cases where an individual dies during or soon after restraint, death may arise from a complex "intermingling of natural and non-natural factors." The NAME Guide states that medical examiners should distinguish natural deaths from unnatural deaths (*i.e.*, homicide, suicide, accident) in such cases by applying the "but-for" principle: If death would not have occurred "but for" the non-natural factor, then the manner of death should be classified as unnatural.

> *Regardless of whether the non-natural factor (a) unequivocally precipitated death, (b) exacerbated an underlying natural pathological condition, (c) produced a "natural" condition that constitutes the immediate cause of death, or (d) contributed to the death of a person with natural disease typically survivable in a non-hostile environment, this principle remains: the manner of death is unnatural when injury hastened the death of one already vulnerable to significant or even life-threatening disease. (p. 7)*

The NAME guide also comments specifically on restraint deaths, saying:

> *Deaths due to positional restraint induced by law enforcement personnel or to choke holds or other measures to subdue may be classified as homicide. In such cases, there may not be an intent to kill, but the death results from one or more intentional, volitional, potentially harmful acts directed at the decedent (without consent, of course). Further, there is some value to the homicide classification toward reducing the public perception that a "cover up" is being perpetrated by the death investigation agency. (p. 11)*

Another important reason to classify such deaths as homicides is that they may be preventable. If it is recognized that such deaths result from intentional police actions, then questions can be raised about whether those actions were necessary or whether other less dangerous procedures might be adopted.

It is important to recognize that the NAME guidelines are somewhat vague and leave considerable room for professional judgment. As the Guide itself explains: "It must be realized that when differing opinions

[3] Randy Hanzlick et al., *A Guide for Manner of Death Classification (First Edition)*, National Association of Medical Examiners (February 2002), available at https://name.memberclicks.net/assets/docs/MANNEROFDEATH.pdf

occur regarding manner-of-death classifications, there is often no 'right' or 'wrong' answer or specific classification that is better than its alternatives." Nevertheless, some classification practices may fail to serve the public interest if, for example, a practice results in failure to identify preventable deaths or makes it difficult to properly assign criminal or civil liability to individuals whose behavior caused a death.

The Potential for Bias in Death Investigations

The death investigation system cannot effectively serve legal justice and public health unless it is internally consistent—*i.e.*, if two deaths occur under highly similar circumstances, then their manners should be classified similarly. In other words, the criteria used to classify a person's death should be the same regardless of, for example, the decedent's race or the identity of the person(s) who restrained them. The Attorney General specifically asked that the ADT design the audit to allow for evaluation of whether OCME's determinations may have been influenced by racial or pro-police bias.

The term *cognitive bias* refers to the class of effects by which a person's pre-existing beliefs, expectations, motives, or situational context influence their collection, perception, or interpretation of information, or their resulting judgments, decisions, or confidence.[4] As a result, two individuals may interpret the very same information in different or even contradictory ways. This phenomenon has been studied for many decades and has been observed in a variety of professions, including scientific investigations. The risk of cognitive bias is greatest when investigators are making subjective judgments and when the standards for making those judgments are vague or flexible. These biases are largely implicit, which means that they typically operate outside of conscious awareness.

There has been much psychological research on racial bias, which shows that it can operate through emotions (*e.g.*, antipathy toward a group) or cognitive mechanisms (*e.g.*, stereotyping). For example, a person who believes that members of a certain social category are unintelligent or violent is more inclined to misinterpret their behaviors in line with those beliefs. Allegiance effects, which occur when a person's identification with a certain group colors their judgment, can also play a role.[5] For instance, medical examiners who identify more strongly with law enforcement may unwittingly interpret ambiguous information and/or render determinations in ways that are more favorable to police.

Because they recognize their own vulnerability to cognitive bias, scientists in many fields take active steps to protect against bias when making critical but subjective judgments. Blind and double-blind studies are common in clinical medicine, and blind scoring and interpretation are common in fields where scientists' conclusions rely, at least in part, on subjective judgment (*e.g.*, psychological assessment). "Blinding" means that decision-makers are deliberately shielded from potentially biasing information until after their judgment has been recorded. Or, if exposure to potentially biasing information is inevitable or necessary, it is withheld for as long as possible—a procedure known as sequential unmasking.[6]

A 2009 report by the National Academy of Sciences (NAS)[7] recognized the potential for cognitive bias to undermine forensic science, including forensic pathology, and called for more research on bias and more safeguards against it. Since then, many studies have shown that contextual factors that are irrelevant to forensic experts' scientific and medical judgments can influence them nonetheless. For example, latent fingerprint examiners sometimes formed conflicting opinions of the very same fingerprint evidence if led to believe that the suspect gave a confession as opposed to an alibi.[8] Similar findings have been reported in

[4] Barbara A. Spellman et al., *Challenges to Reasoning in Forensic Science Decisions*, 4 FORENSIC SCI. INT'L SYNERGY 100200 (2022).
[5] Daniel C. Murrie et al., *Are Forensic Experts Biased by the Side That Retained Them?*, 24 PSYCHOL. SCI. 1889 (2013).
[6] Itiel E. Dror et al., *Context Management Toolbox: A Linear Sequential Unmasking (LSU) Approach for Minimizing Cognitive Bias in Forensic Decision Making*, 60 J. FORENSIC SCI. 1111 (2012); Itiel E. Dror & Jeff Kukucka, *Linear Sequential Unmasking-Expanded (LSU-E): A General Approach for Improving Decision Making as well as Minimizing Noise and Bias*, 3 FORENSIC SCI. INT'L SYNERGY 100161 (2021); Dan E. Krane et al., *Sequential Unmasking: A Means of Minimizing Observer Effects in Forensic DNA Interpretation*, 53 J. FORENSIC SCI. 1006 (2008).
[7] National Research Council, STRENGTHENING FORENSIC SCIENCE IN THE UNITED STATES: A PATH FORWARD (2009). Available at https://www.ojp.gov/pdffiles1/nij/grants/228091.pdf
[8] Itiel E. Dror & David Charlton, *Why Experts Make Errors*, 56 J. FORENSIC IDENT. 600 (2006).

many other forensic disciplines, including DNA analysis, firearms analysis, document examination, bite mark analysis, bloodstain pattern analysis, forensic anthropology, and others.[9]

In most forensic science disciplines, it is clear that examiners should draw conclusions from the physical evidence and not be influenced by contextual factors. Judgments of whether two fingerprints or blood samples share a common source, for example, should depend solely on the expert's examination of the fingerprint patterns or the genetic characteristics of the blood, not on other evidence in the case. By contrast, medical examiners must often rely on contextual information, such as the decedent's medical history and the circumstances of their death, to draw conclusions. Because the range of information that medical examiners may need to consider is quite broad, there may be disagreement about whether an item of information is relevant, or whether it is irrelevant and potentially biasing.

To illustrate, in a recent study,[10] researchers found that medical examiners' opinions as to whether a child's death was an accident or a homicide were strongly influenced by non-medical contextual information. Experts more often judged the child's death as a homicide if it was a Black child under care of the mother's boyfriend as opposed to a White child under care of the child's grandmother, even though the child's injuries and medical history were identical. Other studies have similarly shown that non-medical contextual information can influence manner-of-death and other vital medicolegal determinations.[11] These findings have sparked debate over what information should be considered relevant to such determinations.[12]

For this audit, however, no such question should arise about the relevance of the decedent's race. A basic premise of the audit is that the decedent's race is *not* medically relevant to either cause or manner of death. In other words, there is no good reason for the decedent's race to have influenced medical examiners' determinations for the cases included in this audit. To be clear, this does not necessarily mean that there should be no differences between racial groups if the groups happen to differ in ways that are medically relevant (*e.g.*, age, medical history, physical condition). It means that any differences between racial groups should arise solely from medically-relevant factors rather than from race *per se*.

When designing the audit, a key goal of the ADT was to minimize the risk that the decedent's race would influence case reviewers' assessments. To that end, the audit employed a "sequential unmasking" process in which information about the decedent's race was initially withheld from case reviewers to ensure that it could not affect their initial judgments. As explained in detail below, the case files were carefully redacted such that any information that might be used to infer the decedent's race (including autopsy photographs) was hidden until after case reviewers had rendered their initial judgments of the cause and manner of death. The autopsy photos were then "unmasked," and case reviewers were given the opportunity to revise their initial judgments (which, as explained below, they rarely did).

OCME's determinations of cause and manner of death were also redacted from the case files to ensure that case reviewers' assessments were independent and not influenced by knowledge of how OCME had classified the case. Once case reviewers completed their assessment of a case, OCME's determinations were "unmasked" so that case reviewers could comment on OCME's determinations.

The ADT considered whether it would be possible to temporarily "mask" the identity of the person(s) involved in restraining the decedent. In many cases, however, the very nature of the interaction between the decedent and the person applying restraint provided strong clues as to whether that person was a police officer (*e.g.*, the use of handcuffs). After thorough review of the files, the ADT concluded that it was not possible to redact this information without also obscuring information that was relevant to determining cause

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[9] *See*, *e.g.*, Glinda S. Cooper & Vanessa Meterko, *Cognitive Bias Research in Forensic Science: A Systematic Review*, 295 FORENSIC SCI. INT'L 35 (2019); Jeff Kukucka & Itiel E. Dror, *Human Factors in Forensic Science: Psychological Causes of Bias and Error*, in THE OXFORD HANDBOOK OF PSYCHOLOGY AND Law (David DeMatteo & Kyle C. Scherr eds., 2023).

[10] Itiel E. Dror et al., *Cognitive Bias in Forensic Pathology Decisions*, 66 J. FORENSIC SCI. 1751 (2021).

[11] *e.g.*, James Anderst et al., *Using Simulation to Identify Sources of Medical Diagnostic Error in Child Physical Abuse*, 52 CHILD ABUSE & NEGL. 62 (2016); Itiel E. Dror et al., *Contextual Information in Medicolegal Death Investigation Decision-Making: Manner of Death Determination for Cases of a Single Gunshot Wound*, 5 FORENSIC SCI. INT'L SYNERGY 100285 (2022); Marie-Louise H. J. Loos et al., *Paediatric Femur Fractures—The Value of Contextual Information in Judgment in Possible Child Abuse Cases: Are We Bias?*, 180 EURO. J. PEDIATRICS 81 (2021).

[12] *e.g.*, Itiel E. Dror et al., *Authors' Response to Peterson et al. Commentary*, 66 J. FORENSIC SCI. 2545 (2021); Brian L. Peterson et al., *Commentary on Dror et al. 'Cognitive Bias in Forensic Pathology Decisions'*, 66 J. FORENSIC SCI. 2541 (2021).

and manner of death. Consequently, while the case reviewers were initially "blind" to the decedent's race, they were not blind to whether the person applying restraint was a police officer.

Evolving Theories on the Cause of Death

When evaluating the appropriateness of OCME's determinations, it was important to consider changes over time in two related medical theories concerning the role of physical restraint in causing death. During this audit's timeframe of interest (2003-2019), there had been growing awareness that physical restraint—and particularly weighted restraint in a prone position—can impair respiration, leading to asphyxia and sudden cardiac arrest. At the same time, there had been growing skepticism—and ultimately widespread rejection—of a theory that attributed the deaths of some restrained individuals to "excited delirium."

Asphyxia is defined as a lack of oxygen caused by an interruption in breathing, and it is a well-known trigger of cardiac dysrhythmia and arrest. While asphyxia is often associated with the total inability to breathe (as occurs with choking, drowning, or strangulation), any restriction of an individual's respiratory needs is "asphyxial" if the body is not receiving the amount of oxygen it requires. This is an important concept to recognize in the investigation of prone restraint-related asphyxia, as the exertions leading up to the restraint can easily triple the normal at-rest respiratory requirement of 12 to 20 breaths per minute.

Compression of the neck, chest, and abdomen during physical restraint is an asphyxial mechanism resulting from restricted inspiration. Positional asphyxia, in the context of restraint, typically refers to increased difficulty with breathing that is associated with the use of restraint (*e.g.*, handcuffs, hobble restraint) that is used on a prone (*i.e.*, face down) person, but which can occur in any position in which the restrained person is forced into a position that limits their ability to breathe. The terms "compression" and "positional" are sometimes used interchangeably when referring to the circumstances of asphyxial death. Cardiac arrest results from a combination of metabolic acidosis from the accumulation of carbon dioxide, inadequate ventilation, and a reduction in cardiac output.

While the dangers of positional asphyxia during prone restraint have been known for many years, some of the key publications that provide the scientific foundation for those dangers appeared *after* this audit's timeframe of interest.[13] Hence, the OCME medical examiners whose work is being evaluated here may have been less familiar with those dangers compared to contemporary medical examiners.

"Excited delirium" is a controversial term used to describe an individual in a potentially fatal state of extreme agitation and delirium, often combined with aggressive behavior, heightened pain tolerance, and extreme physical strength. The term was introduced in 1985 by Florida medical examiner Charles Welti in a publication describing seven deaths of individuals who were restrained by police in South Florida.[14] It has been widely used by medicolegal death investigators since the 1980s as an independent explanation for deaths occurring in police custody. OCME personnel—including then-Chief Medical Examiner Dr. David Fowler and Dr. Pamela Southall, then an Assistant Medical Examiner and now acting Chief Medical Examiner—endorsed the theory of excited delirium in two publications on the topic in the late 2000s.[15] In one of those papers, they described 45 deaths in police custody that OCME investigated from 1990 to 2004, 24 of which were attributed to excited or agitated delirium, with only six cases deemed to be homicides.

Despite its widespread use among medical examiners, excited delirium has never been accepted in the broader medical community. In the years since Dr. Southall and her colleagues published their articles about it, the use of excited delirium as a cause of death has been extensively criticized. In June 2021, the American Medical Association (AMA) Council on Science and Public Health concluded that current scientific evidence does not support the use of excited delirium as a valid medical diagnosis, and that the term is

[13] Mark Campbell et al., *Thoracic Weighting of Restrained Subjects During Exhaustion Recovery Causes Loss of Lung Reserve Volume in a Model of Police Arrest*, 11 SCI. REPORTS 15166 (2021); Ellen M. F. Strömmer et al., *The Role of Restraint in Fatal Excited Delirium: A Research Synthesis and Pooled Analysis*, 16 FORENSIC SCI. MED. PATHOL. 680 (2020).
[14] Charles A. Wetli & David A. Fishbain, *Cocaine-Induced Psychosis and Sudden Death in Recreational Cocaine Users*, 30 J. FORENSIC SCI. 873 (1985).
[15] Jami R. Grant et al., *Excited Delirium Deaths in Custody: Past and Present*, 30 AM. J. FORENSIC MED. PATHOL. 1 (2009); Pamela Southall et al., *Police Custody Deaths in Maryland, USA: An Examination of 45 Cases*, 15 J. FORENSIC LEG. MED. 227 (2008).

disproportionately applied to people of color as a rationale for the inappropriate use of chemical restraint, including the anesthetic ketamine, in out-of-hospital settings and particularly during encounters with police.[16] A 2020 position statement by the American Psychiatric Association also rejected excited delirium, citing a lack of valid scientific evidence and the association of the term with deaths of Black men in police custody.[17]

In 2022, Physicians for Human Rights (PHR) issued the following statement:[18]

> *PHR's review leads to the conclusion that "excited delirium" is not a valid, independent medical or psychiatric diagnosis. There is no clear or consistent definition, established etiology, or known underlying pathophysiology. There are no diagnostic standards, and it is not included as a diagnosis in any version of the International Classification of Diseases, the international standard for reporting diseases and health conditions, currently in its tenth revision (ICD-10), or in the Diagnostic and Statistical Manual of Mental Disorders (DSM-5) criteria for psychiatric illness. Both the American Medical Association and the American Psychiatric Association have rejected the diagnosis as invalid, noting that the term is disproportionately applied to people of color in out-of-hospital settings, particularly during arrest, and that it is associated with deaths in police custody, particularly among black men. In general, there is a lack of scientific data, and the body of literature supporting the diagnosis is small and of poor quality, with homogenous citations rife with conflicts of interest.*

In 2023, both the National Association of Medical Examiners (NAME)[19] and the American College of Emergency Physicians (ACEP)[20] issued statements indicating that they do not support the use of excited delirium as a cause of death.

A 2020 publication[21] comprehensively reviewed the scientific literature on excited delirium and analyzed all of the "excited delirium" cases that the reviewed studies described in detail. Based on the results of their analysis, the authors concluded that there is no valid scientific evidence that excited delirium is an independent cause of death; rather, the term has been used as a proxy for restraint-related death while in police custody. The authors argued that ascribing deaths to an invalid diagnosis for which there is no evidence at autopsy would have the effect of diverting attention away from the role of restraint in causing an investigated death. This conclusion was supported by the finding that there was a dose-response relationship between the described severity of restraint and the risk of death, thus supporting a causal link between the restraint and deaths, while at the same time demonstrating the lack of a valid scientific basis for the use of excited delirium as a cause of death. The widespread use of excited delirium as a cause of death over the past several decades may have prevented relevant authorities and governing bodies from recognizing dangerous restraint techniques that are under police control.

When the ADT met with OCME's Acting Chief Medical Examiner and Deputy Chief Medical Examiner in 2022, the ADT asked how OCME currently views the concept of excited delirium. The Acting Chief Medical Examiner indicated that OCME has no official policy with regard to excited delirium, and the decision to list it as a cause of death is up to the professional discretion of each medical examiner.

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[16] American Medical Association, *New AMA Policy Opposes "Excited Delirium" Diagnosis* (June 2021), available at https://www.ama-assn.org/press-center/press-releases/new-ama-policy-opposes-excited-delirium-diagnosis

[17] American Psychiatric Association, *Position Statement on Concerns about Use of the Term "Excited Delirium" and Appropriate Medical Management in Out-of-Hospital Contexts* (December 2020), available at https://www.psychiatry.org/getattachment/7769e617-ee6a-4a89-829f-4fc71d831ce0/Position-Use-of-Term-Excited-Delirium.pdf

[18] Physicians for Human Rights, "EXCITED DELIRIUM" AND DEATHS IN POLICE CUSTODY: THE DEADLY IMPACT OF A BASELESS DIAGNOSIS (March 2022), available at https://phr.org/wp-content/uploads/2022/03/PHR-Excited-Delirium-Report-March-2022.pdf

[19] National Association of Medical Examiners, *Excited Delirium Statement* (March 2023), available at https://name.memberclicks.net/assets/docs/Excited%20Delirium%20Statement%203%20-%202023.pdf

[20] American College of Emergency Physicians, *ACEP's Position on Hyperactive Delirium* (April 2023), available at https://www.acep.org/news/acep-newsroom-articles/aceps-position-on-hyperactive-delirium

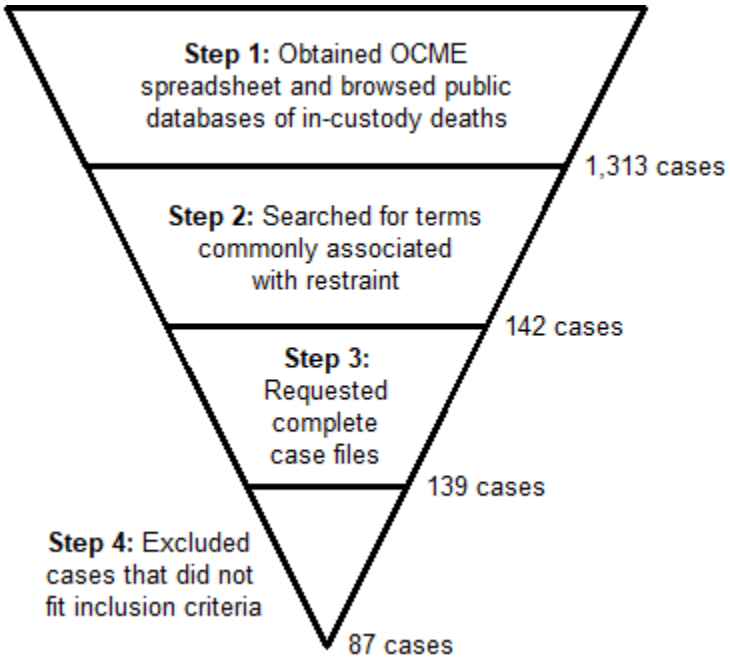
[21] Strömmer et al., *supra* note 13.

Audit Design

Selection of Audit Cases

The ADT followed a four-step process (see Figure 1 below) to identify OCME cases that fit the audit inclusion criteria—*i.e.*, sudden cardiopulmonary collapse and/or unexpected death during or soon after physical restraint. Restraint was defined as any physical restriction of body movement by externally applied manual force, device, or chemical means. The timeframe of interest was from 2003 through 2019, the years during which Dr. David Fowler served as OCME's Chief Medical Examiner.

Figure 1. Four-Step Process to Identify OCME Cases that Fit the Audit Inclusion Criteria



In the first step, the ADT requested—and OCME provided—a spreadsheet of deaths in custody that OCME had investigated from 2003 through 2019. This spreadsheet included 1,313 such cases along with basic information about each, including OCME's cause-of-death statements and manner-of-death determinations for every case. In addition, the ADT consulted public databases of deaths during encounters with police[22] to identify any other OCME cases that might fit the audit's inclusion criteria.

In the second step, the ADT culled these cases by searching for specific terms commonly associated with restraint (see Appendix A for a list of these terms). Whenever one of those terms was found, the ADT more closely examined the available information for that case to assess whether it might fit the audit's inclusion criteria and thus warrants closer scrutiny. This process resulted in the identification of 142 such cases.

In the third step, the ADT requested OCME's complete files for those 142 cases. OCME was able to provide complete files for 136 of those cases, as well as for three additional cases that the ADT had identified from public databases as potentially meeting the audit's inclusion criteria.

[22] These public databases included: (1) Fatal Encounters, managed by D. Brian Burghart (www.fatalencounters.org); (2) Mapping Police Violence (www.mappingpoliceviolence.org); and (3) TheCounted, maintained by *The Guardian* newspaper (www.theguardian.com/thecounted).

In the fourth step, two ADT members—including one forensic medical expert and one social science expert—scrutinized each of these 139 files and excluded cases in which no autopsy had been performed, as well as deaths that were obviously not restraint-related (*e.g.*, gunshot wounds, drug overdoses while incarcerated). This resulted in the identification of 87 cases for inclusion in the audit. See Appendix B for a list of the 87 decedents whose cases were ultimately included in the audit.

In each of the 87 audit cases, the ADT's review indicated that the decedent experienced cardiopulmonary collapse and/or sudden unexpected death during or shortly after physical restraint. However, it should be noted that OCME's cause-of-death statements only mentioned "restraint" for 40 of these 87 cases (46.0%). Six other cases (6.9%) mentioned "asphyxia" in the cause-of-death statement as a potential indication that restraint was a contributing factor, and one case (1.1%) mentioned "police arrest" in the cause-of-death statement but did not mention "restraint" *per se*. The remaining 40 cases (46.0%) did not include any of these terms in the cause-of-death statement.

Preparation of Case Files

The ADT collectively developed and implemented a set of standardized rules for redacting sensitive and/or potentially biasing information from the final 87 case files, which are described below.

- Any documents that are plainly irrelevant to the determination of cause and manner of death (*e.g.*, fax cover sheets, property receipts, insurance forms, organ donation records, documents pertaining to funeral arrangements, invoices) were removed from the case file altogether.

- Any personally identifiable information pertaining to decedents or their family members (*e.g.*, names, addresses, phone numbers, Social Security numbers, vehicle identification numbers, driver's license numbers, etc.) was digitally redacted using Adobe Acrobat Pro.

- Any information about the race/ethnicity of the decedent or their family members was digitally redacted. This included not only explicit mentions of their race/ethnicity but also information that may be used to infer their race/ethnicity (*e.g.*, eye color, hair color, hair style). For any forms with a specific "race/ethnicity" field, we redacted the entire field (including the words "race/ethnicity") so that (a) the size of the redaction box could not be used to infer the redacted information and (b) it was not clear that the information being redacted pertained to race/ethnicity.

- Any personally identifiable information pertaining to OCME personnel (*e.g.*, names, initials, e-mail addresses, signatures, etc.) was digitally redacted.

- Each case file included an autopsy report that provided OCME's determinations of cause and manner of death. For those sections, any interpretations (*e.g.*, "None of these injuries caused or contributed to the deceased's death.") or conclusions (*e.g.*, "The manner of death is certified as accident.") were digitally redacted, but factual observations (*e.g.*, "A comprehensive postmortem examination detected evidence of significant dehydration") were not redacted.

Eighty-five of the 87 case files (97.7%) included autopsy photos, and two case files (2.3%) also included video footage. Any personally identifiable information that was visible in the autopsy photos (*e.g.*, on a hospital bracelet) was digitally redacted. Because these materials necessarily revealed the decedent's skin tone, each case file was split into two PDF documents—*i.e.*, one with only autopsy photos, and another with all other information (including, if applicable, internal photos of the decedent that did not reveal their skin tone)—so that reviewers could review and opine on the latter file before being exposed to photos and videos that revealed the decedent's skin tone, as further described below.

Each case file underwent three rounds of review to ensure that it was redacted appropriately. First, an ADT member (*i.e.*, a pathologist or social scientist) marked the file for redaction by following the above rules. Second, another ADT member (from the opposite specialty area) independently checked the redactions

and made corrections as needed. Third, OAG staff again checked the redactions in each case file while extracting the autopsy photos and organizing all files in secure Google Drive folders.

Overview of Audit Cases

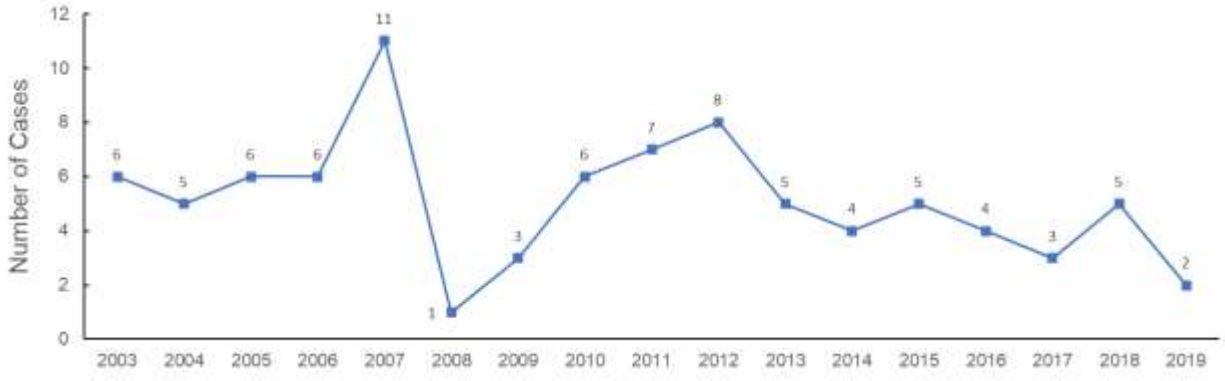
As shown in Table 1 below, the 87 audit cases included at least one case from 12 of Maryland's 23 counties and a plurality of cases (22 cases; 25.3%) from Baltimore City.

Table 1. Number (and %) of Audit Cases by County/Jurisdiction

County	Cases
Anne Arundel	7 (8.0)
Baltimore City	22 (25.3)
Baltimore County	8 (9.2)
Carroll	1 (1.1)
Cecil	1 (1.1)
Frederick	4 (4.6)
Harford	2 (2.3)
Montgomery	14 (16.1)
Prince George's	14 (16.1)
Talbot	5 (5.7)
Washington	3 (3.4)
Wicomico	4 (4.6)
Worcester	2 (2.3)
Total	87

As shown in Figure 2 below, the number of audit cases per year was fairly stable from 2003 through 2019, aside from a spike in 2007 (11 cases) and a dip in 2008 (1 case).

Figure 2. Number of Audit Cases by Year (2003-2019)



Characteristics of Decedents

See Appendix B for a list of all 87 decedents whose cases were included in the audit. Eighty-four of the 87 decedents were men (96.6%) and three were women (3.4%). Most decedents were Black (61 cases; 70.1%), with fewer being White (24 cases; 27.6%) or Hispanic (2 cases; 2.3%). Their average age at death was 38.0 years (*SD* = 11.2, *Median* = 37.0, Range = 17 – 67).

Recruitment and Selection of Case Reviewers

In September 2023, OAG e-mailed a recruitment letter to 15 relevant professional organizations of medical examiners and forensic pathologists with a request to distribute the letter to their members/constituents. Those 15 organizations are listed below. Four of these organizations, including NAME, explicitly confirmed receipt of the recruitment letter.

- American Academy of Forensic Sciences (AAFS)
- British Association in Forensic Medicine (BAFM)
- Colleges of Medicine of South Africa (CMSA)
- Faculty of Forensic and Legal Medicine (FFLM)
- International Association of Coroners and Medical Examiners (IACME)
- National Association of Medical Examiners (NAME)
- Office of the Chief Medical Examiner of Manitoba
- Office of the Chief Medical Examiner of Newfoundland and Labrador
- Office of the Chief Medical Examiner of Nova Scotia
- Ontario Forensic Pathology Service (OFPS)
- Pathology Delivery Board (PDB)
- Royal College of Pathologists (RCPath)
- Royal College of Pathologists of Australasia (RCPA)
- Royal College of Physicians and Surgeons of Canada
- Victorian Institute of Forensic Medicine (VIFM)

The recruitment letter directed individuals who were interested in serving as case reviewers to complete an online application (shown in Appendix C) that required them to:

(a) provide information about their professional training, experience, and certifications,
(b) upload a copy of their curriculum vitae (CV) or résumé,
(c) disclose any previous professional relationship with Maryland OCME and/or any other information that could be perceived to create a conflict of interest,
(d) affirm that they have never been charged with any criminal offense nor have they ever been subject to disciplinary action from any medical licensing authority, and
(e) promise to notify OAG immediately should any of those circumstances change.

The OAG ultimately received 36 complete applications (*i.e.*, all questions answered and a CV or résumé provided). Thirteen of these applicants were determined to have potential conflicts of interest or other disqualifying concerns (*e.g.*, personal relationship with Dr. Fowler, prior professional relationship with OCME, documented ethics violations, controversial media coverage, fewer than five years of post-fellowship experience) and were thus excluded from consideration.

From April through June 2024, a panel of officials from the OAG and Governor's Office interviewed each of the remaining 23 applicants via Zoom and ultimately extended formal offers to 15 applicants, 12 of whom accepted the offer and were hired as contractual employees. For time spent on audit-related work, each case reviewer was compensated at an agreed-upon hourly rate, with a maximum cap on the total amount of compensation (which no case reviewer reached).

Characteristics of Case Reviewers

Our final group of 12 case reviewers included seven women (58.3%) and five men (41.7%). Their average age was 48.0 years (*SD* = 7.3, *Median* = 46.5, Range = 39 – 69). With respect to race/ethnicity, six case reviewers (50%) self-identified as White only, three (25%) self-identified as multiracial, and the remaining three self-identified as Hispanic, Black/African American, and African (8.3% each).

All 12 case reviewers were practicing forensic pathologists and/or medical examiners with an average of 14.2 years of experience at the time of recruitment (*SD* = 6.0, *Median* = 12.5, Range = 6 – 29). Seven were currently practicing in the United States and five were currently practicing in other countries, including three in the United Kingdom, one in Canada, and one in South Africa. Eight were practicing in US-type medical examiner systems; the other four were practicing in coroner's systems.

All 12 case reviewers had completed a fellowship in forensic pathology (or equivalent) and held a professional certification in forensic pathology (*i.e.*, ABPath, RCPath, SoA, or CPath). Some had also completed residencies in anatomical pathology (8 reviewers) or histopathology (2 reviewers) and/or fellowships in cardiac pathology (2 reviewers) and/or neuropathology (1 reviewer).

Audit Procedure

Orientation Sessions

All case reviewers were required to attend a two-hour online orientation session, which was offered on both August 27th and 30th, 2024. During each session, OAG staff gave an overview of the audit procedure described below, including considerations related to maintaining privacy and confidentiality.

In addition, case reviewers heard a 45-minute presentation from an experienced forensic pathologist who was otherwise unaffiliated with the audit. This presentation, which the presenter had previously developed independently of the audit, gave an overview of factors to consider when determining cause and manner of death, including the distinction between cause and manner, and NAME's guidelines on how to properly differentiate amongst the five manner of death categories. Case reviewers could ask questions, and OAG staff later transcribed and shared those questions and the presenter's responses with all case reviewers so that all were privy to the information discussed in both sessions. Case reviewers were also provided with academic papers that presented contrasting perspectives on "excited delirium," although they were not given any instructions as to whether it should or should not be used as a cause of death during the audit.

Case Distribution Procedure

On every Monday for 11 weeks (*i.e.*, from September 9th to November 18th), OAG staff used a random number generator to select eight of the 87 audit cases at random. Then, OAG staff assigned each of those eight cases to three of the 12 case reviewers in a quasi-random fashion, ensuring that:

(a) each case reviewer would receive exactly two cases per week, and
(b) each case would have at least one US-based and at least one international case reviewer.

In theory, this protocol would result in nine of the 12 case reviewers each reviewing 22 cases, while the other three case reviewers each reviewed 21 cases. However, one US-based case reviewer discontinued participation in the audit in early November due to a family emergency, so we randomly reassigned their unfinished cases to the other US-based case reviewers. As a result, the total number of cases reviewed by each case reviewer ranged from 16 to 23 (see Table 20 below).

Case Review Procedure

On every Monday during the 11-week case distribution period, OAG staff sent each case reviewer two hyperlinks, each of which directed the case reviewer to a secure webpage (on the platform Qualtrics) that housed the materials for one of the 87 audit cases. On that page, the case reviewer could access the materials for that case and complete their review of that case as described below.

At the top of the page was a button to open the redacted case file (without autopsy photos) in a new browser tab, at which point the case reviewer could view and/or download it. After reviewing the case file, the case reviewer completed the survey in Appendix D, including their initial opinions of cause (in an open-ended format) and manner (*i.e.*, natural, accident, homicide, suicide, or undetermined) of death.

After completing the survey in Appendix D, the case reviewer advanced to a new webpage and clicked a button to open the autopsy photos (and video, if applicable) in a new browser tab. After reviewing those materials, the case reviewer completed the survey in Appendix E, which allowed them to revise their initial opinions of cause and/or manner of death in light of this new information if they so chose.

As shown in Table 2 below, case reviewers rarely revised their initial opinions after viewing the autopsy photos and/or videos. Across 255 total case reviews (*i.e.*, 85 cases with photos and/or videos times 3 reviewers), there were only 14 instances across 11 cases in which a case reviewer revised their initial

cause-of-death opinion (5.5% of all reviews) and only nine instances across eight cases in which a case reviewer revised their initial manner-of-death opinion (3.5% of all reviews).

Table 2. Number of Cases in Which Case Reviewers Revised Their Initial Opinions

	How many case reviewers revised their initial opinion?			
	None	One	Two	Three
Cause of Death	74	8	3	-
Manner of Death	77	7	1	-

Note: For the two audit cases without autopsy photos, case reviewers did not complete the survey in Appendix E, and hence those two cases are not included in this table.

Of the eight cases for which at least one case reviewer revised their initial manner-of-death opinion, there were three in which one case reviewer changed from 'undetermined' to 'homicide' after viewing the autopsy photos—and in each of those cases, both other case reviewers also opined 'homicide' before viewing the autopsy photos. In two other cases (including the only case where multiple case reviewers revised their initial manner-of-death opinion), case reviewers did not ultimately reach a consensus manner-of-death opinion. In one other case, the case reviewer who revised their manner-of-death opinion subsequently disclosed in a written comment that they did so by accident; they had meant to change their initial manner-of-death opinion before submitting it but neglected to do so. For the remaining two cases, one case reviewer changed their opinion from 'accident' to 'undetermined' for one case, and one case reviewer changed their opinion from 'accident' to 'homicide' for the other case.

Whenever a case reviewer revised their initial cause-of-death and/or manner-of death opinion, they were asked to explain why. Their explanations generally cited new and relevant medical information gleaned from the autopsy photos (*e.g.*, the exact nature of certain fractures or hemorrhages, other injuries that were not documented in the autopsy report, or that the decedent was obese).

Consensus Meetings

For each case, once all three assigned case reviewers had completed their independent reviews as described above, OAG staff compared the three case reviewers' independent manner-of-death opinions to determine whether a consensus meeting would be scheduled.

If all three case reviewers independently reached the same manner-of-death opinion, no consensus meeting was held, and case reviewers were immediately asked to complete the post-consensus survey for that case (described below). Overall, this occurred for 38 of the 87 cases (43.7% of cases).

If the three case reviewers did *not* all reach the same manner-of-death opinion, OAG staff scheduled a consensus meeting (via Zoom) for all three case reviewers to discuss the case and attempt to reach a unanimous manner opinion. Overall, this occurred for 49 of the 87 cases (56.3% of cases).

Each consensus meeting was scheduled for 30 minutes. At the start, OAG staff instructed case reviewers to discuss the case in question and attempt to reach a consensus manner-of-death opinion, but also made clear that they were not required to reach consensus. These meetings were not recorded to protect case reviewers' anonymity. After instructing case reviewers, OAG staff remained muted and off-camera until case reviewers notified them that they had reached (or could not reach) consensus. Overall, 36 of the 49 consensus meetings (73.5%) resulted in a consensus manner-of-death opinion; there were 13 cases for which case reviewers did not reach a consensus manner-of-death opinion.

Post-Consensus Surveys

After each consensus meeting (or upon learning that no consensus meeting was needed), OAG staff sent all three case reviewers a hyperlink to the online post-consensus survey for that case. The post-consensus survey (shown in Appendix F) revealed OCME's cause and manner determinations for that case (which were previously redacted) and asked case reviewers to evaluate them.

At the top of the post-consensus survey webpage was a button to open the partially-unredacted autopsy report for that case in a new browser tab. This partially-unredacted report now displayed OCME's determinations of cause and manner of death, but the identities of the decedent and OCME staff remained redacted. Case reviewers then completed the survey shown in Appendix F, which asked them to judge and explain whether OCME's determinations were "reasonable" or "not reasonable."

Exit Survey

Once a case reviewer completed all of their assigned case reviews, consensus meetings (as needed), and post-consensus surveys, OAG staff sent them one final hyperlink—to an online exit survey (shown in Appendix G) that asked them to reflect on all of the cases that they reviewed for the audit, rate their overall difficulty, comment on the overall quality of OCME's work (including both strengths and weaknesses), and offer any practice and/or policy recommendations to better facilitate cause and manner determinations and/or reduce the risk of preventable restraint-related deaths.

Audit Results

Comparison of Manner-of-Death Decisions

Table 3 below compares OCME's manner-of-death determinations for the 87 audit cases—*i.e.*, homicide ['HOM'], accident ['ACC'], natural ['NAT'], or undetermined ['UND']—against case reviewers' consensus manner-of-death opinions for those same cases.

Table 3. Comparison of OCME's Manner-of-Death Determinations against Case Reviewers' Consensus Manner-of-Death Opinions for the 87 Audit Cases

		Case Reviewers' Consensus Opinion					
		HOM	ACC	NAT	UND	[none]	Total
OCME's Determination	HOM	**12 (9)**	-	-	-	-	12
	ACC	5 (2)	**4 (2)**	-	-	-	9
	NAT	2	1	**1 (1)**	1	2	7
	UND	29 (19)	6 (4)	-	**13 (1)**	11	59
	Total	48 (30)	11 (6)	1 (1)	14 (1)	13	87

Note: Values in parentheses indicate the number of cases for which all three case reviewers independently reached the same manner opinion and thus no consensus meeting was held.

Bolded values denote the 30 cases (34.5% of all cases) for which case reviewers' consensus manner-of-death opinion was the same as OCME's determination. For 44 other cases (50.6% of all cases), case reviewers' consensus manner-of-death opinion differed from OCME's determination. For the remaining 13 cases (14.9%), case reviewers did not reach a consensus manner-of-death opinion.

Overall, OCME certified 12 of the 87 deaths (13.8%) as homicides, but case reviewers unanimously judged 48 of those same deaths (55.2%)—exactly four times as many—as homicides. Stated differently, there were 36 total deaths (41.4% of all cases) that case reviewers unanimously judged as homicides but OCME had certified as either accidental (5 cases), natural (2 cases), or undetermined (29 cases). Of those 36 deaths, there were 21 that all three case reviewers independently judged as homicides, including two that OCME certified as accidents and 19 that OCME certified as undetermined.

Figure 3 and Table 4 below break down those 36 cases by year and county/jurisdiction, respectively.

Figure 3. Cases Judged as Homicides by Case Reviewers but Not by OCME, by Year

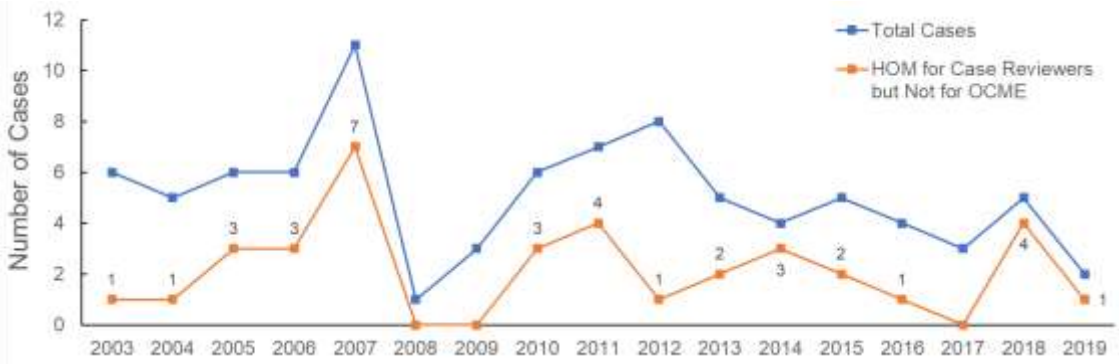


Table 4. Cases Judged as Homicides by Case Reviewers but Not by OCME, by County/Jurisdiction

County	All Cases	HOM for Case Reviewers but Not for OCME
Anne Arundel	7	1
Baltimore City	22	12
Baltimore County	8	5
Carroll	1	1
Cecil	1	-
Frederick	4	3
Harford	2	-
Montgomery	14	5
Prince George's	14	4
Talbot	5	1
Washington	3	2
Wicomico	4	2
Worcester	2	-
Total	87	36

Lastly, of the 13 cases for which case reviewers did not reach a consensus manner-of-death opinion (shown as "[none]" in Table X above), there were five cases for which:

(a) two of the three case reviewers independently judged the death as a homicide, and
(b) OCME certified the death as something other than a homicide.

Across those five cases, the third case reviewer opined 'accident' three times and 'undetermined' twice. Of the other eight cases without consensus, there were two for which two case reviewers opined 'undetermined' and six for which all three case reviewers reached different manner-of-death opinions.

Decedent Race and Manner of Death

Another goal of this audit was to assess whether OCME's manner determinations show patterns consistent with the possibility of racial bias. As shown in Table 5 below, there was a statistically significant difference ($\chi^2_{(3)} = 10.36$, $p = .016$) in the overall pattern of OCME's manner determinations for White versus Non-White decedents in the 87 audit cases, such that OCME less often certified deaths of non-White individuals as homicides and more often certified them as accidents or 'undetermined.' [*Note:* If one were to exclude the two Hispanic decedents from the analysis so as to only compare White versus Black decedents, this difference remains statistically significant, $\chi^2_{(3)} = 10.02$, $p = .018$.]

Table 5. Number (and %) of OCME's Manner Determinations by Decedent Race

	OCME's Manner Determination				
	HOM	ACC	NAT	UND	Total
White	7 (29.2)	0 (0)	3 (12.5)	14 (58.3)	24
Non-White	5 (7.9)	9 (14.3)	4 (6.3)	45 (71.4)	63

In contrast, as shown in Table 6 below, case reviewers—whose manner-of-death opinions were almost always blind to race—showed no statistically significant difference ($\chi^2_{(3)} = 6.62$, $p = .085$) in the overall pattern of their consensus manner-of-death opinions for White vs. Non-White decedents in the 74 cases for which they reached consensus. [*Note:* If one were to compare only White versus Black decedents as described above, there is still no statistically significant difference, $\chi^2_{(3)} = 5.99$, $p = .112$.]

Table 6. Number (and %) of Case Reviewers' Consensus Manner-of-Death Opinions by Decedent Race

	Case Reviewers' Consensus Opinion					
	HOM	ACC	NAT	UND	[none]	Total
White	16 (66.7)	1 (4.2)	1 (4.2)	2 (8.3)	4 (16.7)	24
Non-White	32 (50.8)	10 (15.9)	0 (0)	12 (19.0)	9 (14.3)	63

Although the former difference was statistically significant and the latter was not, the two groups' overall patterns were similar, with both OCME and case reviewers producing higher rates of 'homicide' and lower rates of 'accident' and 'undetermined' judgments for White decedents. These parallel trends suggest that the observed racial differences in OCME's manner determinations may have arisen, at least in part, from factors other than the decedent's race (*i.e.*, confounding variables).

Another way to assess racial bias is by looking at whether the degree of concordance between case reviewers' consensus manner-of-death opinions and OCME's determinations depended on the decedent's race. These data are shown in Table 7 below. Case reviewers' consensus manner-of-death opinion more often differed from OCME's determination when the decedent was non-White (63% of cases) than when the decedent was White (50% of cases), although this difference was not statistically significant ($\chi^2_{(1)} = 1.02$, $p = .313$). [*Note:* If one were to compare only White versus Black decedents as described above, there is still no statistically significant difference, $\chi^2_{(1)} = 1.44$, $p = .230$.]

Table 7. Number (and %) of Differences of Manner-of Death Opinion by Decedent Race for All 87 Audit Cases

	Did case reviewers' consensus opinion differ from OCME's determination?		
	No	Yes	Total
White	10 (50.0)	10 (50.0)	20
Non-White	20 (37.0)	34 (63.0)	54
Total	30	44	74

Given the unique ramifications of 'homicide' determinations, we also looked specifically at differences of opinion between OCME and case reviewers in the subset of 48 cases that case reviewers unanimously judged as homicides, including whether the frequency of such differences of opinion depended on the decedent's race. [*Note:* Case reviewers did not judge either of the two cases involving Hispanic decedents as homicides, so this analysis compares subgroups of 16 White and 32 Black decedents.]

As shown in Table 8 below, OCME's determination was 'homicide' for only 12 of the 48 cases (25%) that case reviewers unanimously judged as homicides. Moreover, there was a statistically significant difference ($\chi^2_{(1)} = 4.50$, $p = .034$) such that differences of opinion were more common in cases with a Black (84.4%) as opposed to White (56.3%) decedent. Stated otherwise, for deaths that case reviewers unanimously judged as homicides, OCME rarely certified the manner as homicide, and they did so even less often if the decedent was Black. It should be understood that this difference has multiple possible explanations and does not necessarily reflect racial animus or intentional bias.

Table 8. Number (and %) of Differences of Manner-of Death Opinion by Decedent Race for 48 Cases Judged as Homicides by Case Reviewers

	Did case reviewers' consensus opinion differ from OCME's determination?		
	No	Yes	Total
White	7 (43.8)	9 (56.3)	16
Black	5 (15.6)	27 (84.4)	32
Total	12	36	48

Lastly, as noted above, OCME's cause of death statements mentioned "restraint" (or some variant thereof) for 47 of the 87 audit cases (54.0%). OCME's cause of death statement mentioned "restraint" for 16 of the 24 cases with White decedents (66.7%) and for 31 of the 63 cases with non-White decedents (49.2%), which was not a statistically significant difference ($\chi^2_{(1)} = 2.13$, $p = .144$).

Police Involvement and Manner of Death

Another goal of this audit was to assess whether OCME's manner-of-death determinations show patterns consistent with the possibility of pro-police bias. Among the 87 audit cases, there were 68 cases (78.2%) in which the decedent was restrained by police and 19 cases (21.8%) in which the decedent was restrained by other individuals—including security guards (10 cases), civilians (***e.g.***, neighbors, family members; 6 cases), fire/EMS personnel (2 cases), or corrections officers (1 case).

As shown in Table 9 below, there was a statistically significant difference ($\chi^2_{(3)} = 12.46$, $p = .006$) in the overall pattern of OCME's manner determinations for cases involving restraint by police versus restraint by other individuals, such that deaths involving restraint by police were less often certified as homicides and more often certified as accidents or 'undetermined.'

Table 9. Number (and %) of OCME's Manner Determinations by Who Applied Restraint

	OCME's Manner Determination				
	HOM	ACC	NAT	UND	Total
Restraint by Police	5 (7.4)	9 (13.2)	6 (8.8)	48 (70.6)	68
Restraint by Others	7 (36.8)	0 (0)	1 (5.3)	11 (57.9)	19

However, as shown in Table 10 below, case reviewers showed this same pattern: There was a statistically significant difference ($\chi^2_{(3)} = 7.95$, $p = .047$) in the overall pattern of case reviewers' consensus manner-of-death opinions as a function of who applied restraint, such that deaths involving restraint by police were less often judged as homicides and more often judged as accidents or 'undetermined.'

Table 10. Number (and %) of Case Reviewers' Consensus Manner-of-Death Opinions by Who Applied Restraint

	Reviewers' Consensus Opinion					
	HOM	ACC	NAT	UND	[none]	Total
Restraint by Police	35 (51.5)	11 (16.2)	0 (0)	12 (17.6)	10 (14.7)	68
Restraint by Others	13 (68.4)	0 (0)	1 (5.3)	2 (10.5)	3 (15.8)	19

As with decedent race, interpretation of the above data is complicated by the fact that these subsets of cases may differ in other ways aside from who applied restraint (*i.e.*, confounding variables). We thus also compared these subsets of cases in terms of how often reviewers' consensus manner-of-death opinions differed from OCME's manner determinations. These data are shown in Table 11 below.

There was a statistically significant difference ($\chi^2_{(3)} = 4.08$, $p = .043$), such that case reviewers' consensus manner-of-death opinion more often differed from OCME's manner determination if the decedent was restrained by police (65.5%) rather than restrained by other individuals (37.5%).

Table 11. Number (and %) of Differences of Manner-of-Death Opinion by Who Applied Restraint for All 87 Audit Cases

	Did case reviewers' consensus opinion differ from OCME's determination?		
	No	Yes	Total
Restraint by Police	20 (34.5)	38 (65.5)	58
Restraint by Others	10 (62.5)	6 (37.5)	16
Total	30	44	74

As we did with decedent race (above), we also looked specifically at differences of opinion between OCME and case reviewers in the subset of 48 cases that case reviewers unanimously judged as homicides, including whether the frequency of such differences of opinion depended on who had applied restraint. As shown in Table 12 below, this subset of cases included 35 cases in which the decedent was restrained by police and 13 cases in which the decedent was restrained by other individuals.

There was a statistically significant difference ($\chi^2_{(1)} = 7.91$, $p = .005$) such that differences of opinion were more frequent in cases where the decedent was restrained by police (85.7%) rather than restrained by others (46.2%). Stated otherwise, for deaths that case reviewers unanimously judged as homicides, OCME rarely certified the manner as homicide, and they did so even less often if the decedent had been restrained by police. Again, however, it should be understood that this difference has multiple possible explanations and does not necessarily reflect intentional favoritism toward police.

Table 12. Number (and %) of Differences of Manner-of-Death Opinion by Who Applied Restraint for 48 Cases Judged as Homicides by Case Reviewers

	Did case reviewers' consensus opinion differ from OCME's determination?		
	No	Yes	Total
Restraint by Police	5 (14.3)	30 (85.7)	35
Restraint by Others	7 (53.8)	6 (46.2)	13
Total	12	36	48

Lastly, as noted above, OCME's cause-of-death statements mentioned "restraint" (or some variant) for 47 of the 87 audit cases (54.0%). As shown in Table 13 below, OCME's cause-of-death statements tended to mention restraint less often if the decedent had been restrained by police (48.5%) rather than by others (73.7%), but this difference fell just shy of statistical significance ($\chi^2_{(1)} = 3.78$, $p = .051$).

Table 13. Number (and %) of OCME's Cause-of-Death Statements Mentioning Restraint

	Did OCME's cause-of-death statement mention restraint?		
	No	Yes	Total
Restraint by Police	35 (51.5)	33 (48.5)	68
Restraint by Others	5 (26.3)	14 (73.7)	19
Total	40	47	87

Decedent Race and Police Involvement

As shown in Table 14 below, there was no statistically significant relationship ($\chi^2_{(1)} = 2.57$, $p = .109$) between the decedent's race and who restrained the decedent. In other words, White (66.7%) and non-White (82.5%) decedents did not significantly differ in the likelihood that they were restrained by police.

Table 14. Comparison of White and Non-White Decedents by Who Applied Restraint

	Restrained by Police	Restrained by Others	Total
White	16 (66.7)	8 (33.3)	24
Non-White	52 (82.5)	11 (17.5)	63
Total	68	19	87

OCME's Use of "Excited Delirium" as a Cause of Death

The 87 audit cases included 42 cases (48.3% of cases) for which OCME's cause-of-death statement mentioned "excited delirium" (17 cases), "agitated delirium" (16 cases), or some variant thereof (*i.e.*, five cases with "agitated behavior," two cases with "agitated state," one case with "agitation," and one case with "delirium"). Table 15 below shows OCME's manner determinations for those 42 "delirium" cases, along with case reviewers' consensus manner-of-death opinions for those same 42 cases–which were rendered without knowledge of OCME's determinations.

Table 15. Number (and %) of OCME's and Case Reviewers' Manner-of-Death Judgments in 42 "Delirium" Cases

	HOM	ACC	NAT	UND	No Consensus
OCME's Determination	1 (2.4)	1 (2.4)	1 (2.4)	39 (92.9)	N/A
Reviewers' Consensus Opinion	25 (59.5)	1 (2.4)	0 (0)	7 (16.7)	9 (21.4)

As shown in Table 16 below, case reviewers' consensus manner-of-death opinion differed from OCME's manner determination for 25 of the 33 "delirium" cases (75.8%) for which case reviewers reached consensus. In contrast, case reviewers reached a consensus manner-of-death opinion in 41 of the other 45 cases (91.1%), 19 of which (46.3%) differed from OCME's determination. This was a statistically significant difference ($\chi^2_{(1)} = 6.56$, $p = .010$): Case reviewers' consensus manner-of-death opinion more often differed from OCME's manner determination for cases in which (unbeknownst to case reviewers) OCME's cause-of-death statement mentioned "delirium" and/or "agitation."

Table 16. Number (and %) of Differences in Manner-of-Death Opinion for "Delirium" vs. Other Cases

	Did case reviewers' consensus opinion differ from OCME's determination?		
	No	Yes	Total
"Delirium" Cases	8 (24.2)	25 (75.8)	33
Other Cases	22 (53.7)	19 (46.3)	41
Total	30	44	74

Of the 42 "delirium" cases, 28 (66.7%) involved Black decedents, 12 (28.6%) involved White decedents, and two (4.8%) involved Hispanic decedents. The racial makeup of decedents in "delirium" cases was not different from the racial makeup of decedents across all audit cases (*i.e.*, 70.1% Black, 27.6% White, and 2.3% Hispanic). In other words, no racial group was overrepresented in the subset of "delirium" cases.

Of the 42 "delirium" cases, 34 (81.0%) involved restraint by police and eight (19.0%) involved restraint by others. Stated differently, OCME's cause-of-death statement mentioned "delirium" for 34 of the 68 cases involving restraint by police (50.0%) and for eight of the 19 cases involving restraint by others (42.1%), which was not a statistically significant difference ($\chi^2_{(1)} = 0.37$, $p = .543$).

Adequacy of Case Information

Table 17 below shows the number (and percentage) of cases for which the indicated number of case reviewers (*i.e.*, none, one, two, or all three) judged the information in the case file as adequate, as well as the mean (*M*) number of case reviewers per case who judged the information as adequate.

Table 17. Number (and %) of Cases for Which Case Reviewers Judged the Available Information as Adequate

	# of Case Reviewers Who Answered "Yes"				
	Zero	**One**	**Two**	**Three**	***M***
Was the information about the circumstances of the death generally adequate to allow an informed assessment of cause and manner of death?	9 (10.3)	15 (17.2)	30 (34.5)	33 (37.9)	2.00
Did the file contain adequate information about…					
… the nature/method of restraint?	10 (11.5)	20 (23.0)	26 (29.9)	31 (35.6)	1.90
… the duration of restraint?	33 (37.9)	24 (27.6)	18 (20.7)	12 (13.8)	1.10
… the decedent's body position while restrained?	20 (23.0)	19 (21.8)	13 (14.9)	35 (40.2)	1.72
… the decedent's behavior while restrained?	9 (10.3)	21 (24.1)	25 (28.7)	32 (36.8)	1.92
... when, if at all, the decedent apparently became unresponsive relative to the restraint?	5 (5.7)	10 (11.5)	33 (37.9)	39 (44.8)	2.22
... the sequence of events before, during, and after restraint?	6 (6.9)	20 (23.0)	28 (32.2)	33 (37.9)	2.01
Were there any deficiencies in the post mortem examination of the decedent?	39 (44.8)	42 (48.3)	5 (5.7)	1 (1.1)	0.63

Case reviewers' responses suggest that information about the duration of restraint was especially lacking: For 75 of the 87 case files (86.2%), at least one case reviewer rated that information as inadequate, including 33 cases (37.9%) where all three case reviewers rated it as inadequate.

There were 48 cases (55.2%) for which at least one case reviewer indicated that there were deficiencies in the post-mortem examination. Table 18 below shows the number of cases for which at least one case reviewer judged the post-mortem examination as deficient in the indicated area. The most commonly noted deficiencies pertained to history and background circumstances (23.0% of cases), internal examinations (20.7% of cases), and post-mortem imaging and routine histology (each 19.5% of cases).

Table 18. Number (and %) of Post-Mortem Examinations for Which at Least One Case Reviewer Judged the Indicated Area as Deficient

Area	Cases
History and background circumstances	20 (23.0)
Scene information	9 (10.3)
Post-mortem imaging	17 (19.5)
External examination	9 (10.3)
Internal examination	18 (20.7)
Routine histology	17 (19.5)
Toxicology	15 (17.2)
Neuropathology	11 (12.6)
Cardiac pathology	13 (14.9)
Molecular pathology	5 (5.7)

Reasonableness of OCME's Determinations

After case reviewers completed their review of a case, OCME's cause and manner determinations were revealed, and case reviewers separately commented on them. Table 19 below shows the number (and percentage) of cases for which the indicated number of case reviewers judged OCME's determinations as reasonable, as well as the mean (*M*) number of case reviewers per case who judged them as reasonable.

Table 19. Number (and %) of Cases for Which Case Reviewers Judged OCME's Determinations as Reasonable

	# of Case Reviewers Who Answered "Yes"				
	Zero	**One**	**Two**	**Three**	***M***
Was OCME's *cause of death* determination reasonable?	5 (5.7)	13 (14.9)	23 (26.4)	46 (52.9)	2.26
Was OCME's *manner of death* determination reasonable?	14 (16.1)	24 (27.6)	19 (21.8)	30 (34.5)	2.09

Generally, case reviewers judged OCME's cause-of-death determinations as reasonable more often than they judged OCME's manner-of-death determinations as reasonable. There were 69 cases (79.3%) for which at least two case reviewers judged OCME's cause determination as reasonable, but only 49 cases (56.3%) for which at least two case reviewers judged OCME's manner determination as reasonable. Conversely, there were 14 cases (16.1%) for which all three case reviewers judged OCME's manner determination as not reasonable, including 12 with Black decedents and two with White decedents.

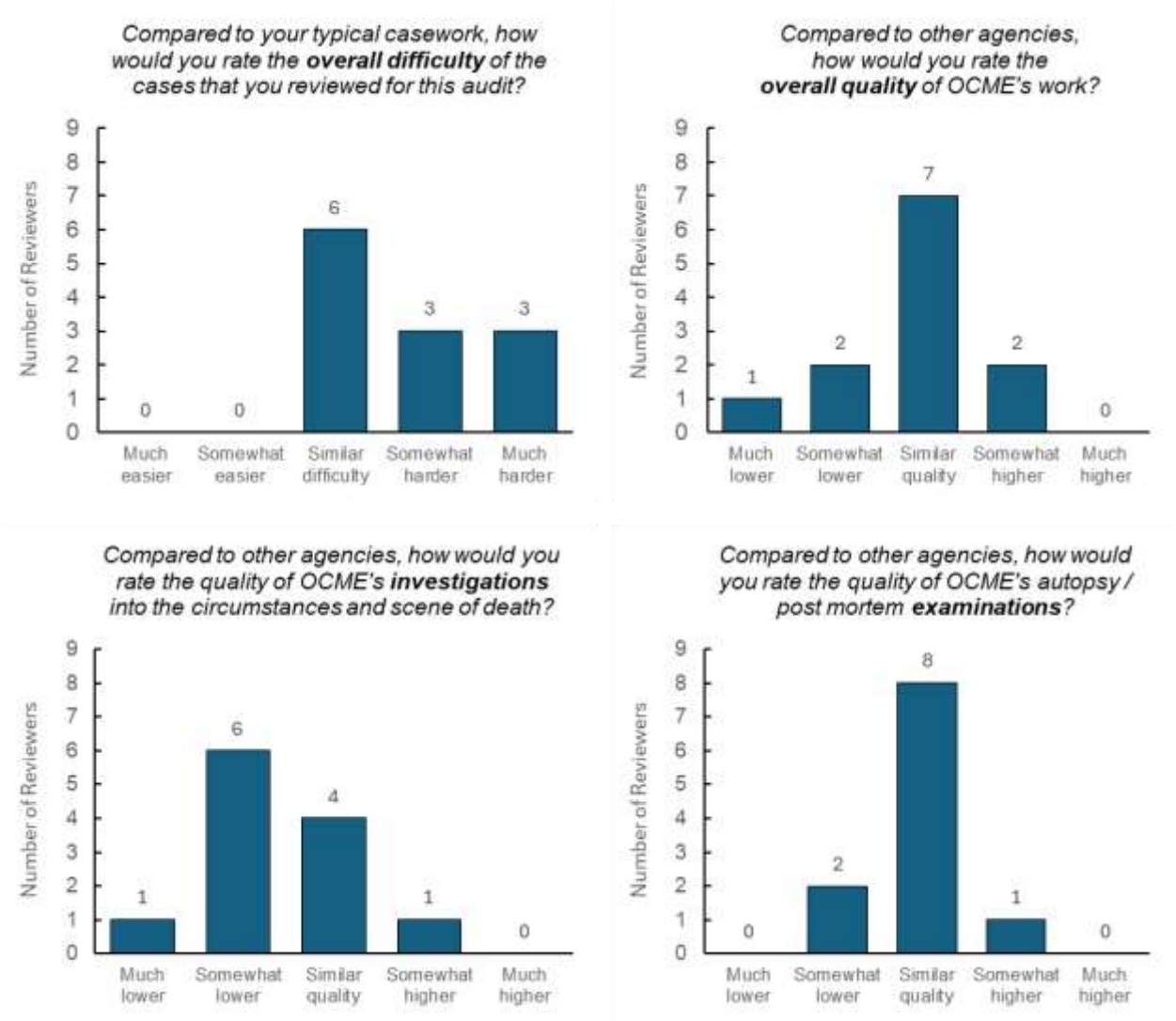
As noted above, there were 36 cases that case reviewers unanimously judged as homicides but OCME did not certify as homicides. Of those cases, there was only one case (2.8%) for which all three case reviewers judged OCME's non-homicide determination as reasonable, whereas there were 30 cases (83.3%) for which multiple case reviewers judged OCME's non-homicide determination as "not reasonable."

Exit Survey

After reviewing all of their assigned cases, case reviewers completed an exit survey that asked them to reflect more broadly on the difficulty of the cases that they reviewed for the audit, as well as the quality of OCME's work as evidenced by all of the materials that they reviewed for the audit.

As shown in Figure 4 below, all case reviewers rated the audit cases as similar (50%) or greater (50%) in difficulty than their typical casework. Case reviewers' opinions on the overall quality of OCME's work and of OCME's post-mortem examinations were somewhat mixed, with most (62.5% and 72.7%, respectively) rating them as similar to other agencies. However, most case reviewers (62.5%) rated the quality of OCME's investigations into the circumstances and scene of death as lower than other agencies.

Figure 4. Case Reviewers' Opinions of the Difficulty of the Audit Cases and the Quality of OCME's Work



Note: The bottom-right figure displays only 11 responses because one case reviewer did not answer that question.

Manner-of-Death Opinions by Case Reviewer and Location

Table 20 below shows the number of cases reviewed and the frequency of each manner-of-death opinion for each of the 12 case reviewers, as well as the overall frequencies for US-based and international case reviewers. As one might expect, individual case reviewers varied in their propensity to reach certain manner-of-death opinions; for instance, one case reviewer judged nearly half (43.5%) of their 23 cases as 'undetermined' while another case reviewer produced zero 'undetermined' judgments across 23 cases. These variations may reflect differences in case reviewers' decision criteria/thresholds and/or differences in the nature/complexity of the cases that they were randomly assigned to review.

Notably, there was no statistically significant difference between US-based and international case reviewers in terms of their overall pattern of manner-of-death opinions ($\chi^2_{(3)} = 2.30$, $p = .512$).

Table 20. Number (and %) of Manner-of-Death Opinions by Case Reviewer and Location (US vs. International)

		Manner-of-Death Opinion			
Reviewer	**Cases**	**HOM**	**ACC**	**NAT**	**UND**
R01	23	16 (69.6)	2 (8.7)	-	5 (21.7)
R02	22	12 (54.5)	6 (27.3)	-	4 (18.2)
R03	23	16 (69.6)	4 (17.4)	3 (13.0)	-
R04	16	5 (31.3)	8 (50.0)	-	3 (18.8)
R05	22	15 (68.2)	5 (22.7)	1 (4.5)	1 (4.5)
R06	23	10 (43.5)	6 (26.1)	1 (4.3)	6 (26.1)
R07	23	9 (39.1)	4 (17.4)	-	10 (43.5)
R08	22	12 (54.5)	7 (31.8)	-	3 (13.6)
R09	22	12 (54.5)	3 (13.6)	-	7 (31.8)
R10	21	13 (61.9)	2 (9.5)	1 (4.8)	5 (23.8)
R11	22	14 (63.6)	4 (18.2)	1 (4.5)	3 (13.6)
R12	22	18 (81.8)	2 (9.1)	1 (4.5)	1 (4.5)
US	152	83 (54.6)	35 (23.0)	5 (3.3)	29 (19.1)
Non-US	109	69 (63.3)	18 (16.5)	3 (2.8)	19 (17.4)

Themes in Case Reviewers' Comments

Each case-specific survey also included open-ended questions that asked case reviewers to comment on the adequacy of the information in the case file (Appendix D), the accuracy and completeness of OCME's autopsy report (Appendix E), and the reasonableness of OCME's cause and manner determinations (Appendix F). In addition, the exit survey (Appendix G) asked case reviewers to comment more broadly on the difficulty of the audit cases and the quality of OCME's work, and to offer concrete practice and policy recommendations based on all of the cases that they reviewed for the audit.

OAG staff and the ADT exhaustively reviewed case reviewers' open-ended responses to identify recurring themes therein. Those themes are listed below, along with representative comments from case reviewers (who are identified as R01 through R12; see Table X above). For each comment, we also note the year of the case on which that comment was made.

Adequacy of Case Information

1) Echoing the data in Table 17 above, case reviewers often noted that case files were lacking in detail about the restraint—especially its duration and nature, the decedent's body position and behavior, and the number, behavior, and positions of the individuals who applied restraint. For some cases, case reviewers also noted that the case file provided conflicting information about the restraint.

    - "The description of the restraint by police was lacking in details. One can only guess at many things, including the position of the body, the type of restraint applied, and the length of time the decedent was held down." (R07, 2006 case)
    - "There is no clear description of the decedent's body position(s) during restraint, the timing/duration of restraint, and when exactly he went unresponsive." (R08, 2014 case)
    - "No description as to whether the decedent was ever in prone restraint. If yes, for how long, and how many officers pinning him down (and where are they pinning him)?" (R04, 2007 case)
    - "Insufficient information on how he was subdued; he has facial injuries without any information on those occurred." (R01, 2011 case)
    - "How was the decedent restrained while the other officers assisted? What position was decedent initially handcuffed in? Was any other use of force applied? (*i.e.*, blows with hands or knees or other object such as baton)." (R08, 2012 case)
    - "Exactly how was decedent positioned/handcuffed in the transport vehicle? It is unclear." (R05, 2009 case)
    - "My impression is that the decedent was restrained by the limbs, and lying on his bed, but this needs to be clarified too, in case that is my assumption." (R10, 2011 case)
    - "The restraint was described as prone with an officer on each leg. Was he handcuffed in front or behind his back? How long did this take?" (R01, 2003 case)
    - "There is little information as to the subject's behavior (other than he would not obey commands) or if he was threatening LE in any way." (R01, 2007 case)
    - "Did the patient converse, moan or groan during restraint? Did he attempt to fight off the restrainers?" (R12, 2011 case)
    - "Was he able to talk during restraint? What happened when he was on the ground? Did the struggle continue? What position was he in when he was taken to ground? Did he remain in this position? I'm not sure what "torso on torso" means." (R09, 2006 case)

- "How many officers subdued him? How was the hood used on his face? How long after restraint or placed in the cage car did he become unresponsive? These are unclear." (R12, 2012 case)
- "Who and how many individuals were pressing/laying on the decedent's back during restraint." (R04, 2013 case)
- "I would like more information about how many officers were involved in the restraint." (R07, 2017 case)
- "Was any pressure applied to the back of his torso to keep him down on the ground that might have compromised his respiratory function? This is unclear." (R06, 2006 case)
- "There is a question about whether choking has indeed taken place." (R11, 2014 case)
- "It remains unclear to me whether he was prone and whether a neck/choke hold was used." (R08, 2013 case)
- "The duration of restraint and more description of the relative positions of the decedent and law enforcement would have been helpful." (R02, 2007 case)
- "More information on the exact positions of the officers during the incident may also have been helpful." (R09, 2004 case)
- "One statement indicates that the decedent was handcuffed while another states that he was not." (R01, 2018 case)
- "One LE officer's statement says they were on top of individual's back; others did not mention. Timing/duration of this unclear." (R06, 2007 case)

2) Case reviewers often noted that it would be helpful to have more first-hand accounts of the restraint (*e.g.*, police reports, eyewitness statements)—though they also cautioned that such accounts may be less reliable when given by or filtered through the individuals who applied restraint.

- "There are reports from police officers but it would be better to have more of these with particular emphasis on the manner and duration of the restraint." (R10, 2007 case)
- "Although the emergency medical responders described the decedent's position during restraint, it would have been helpful to have more detailed descriptions of the event from the law enforcement reports." (R02, 2007 case)
- "Where are the statements from all of the officers on scene?" (R05, 2004 case)
- "Observations of witnesses and each officer would have been helpful. I always request these." (R09, 2004 case)
- "Although a general description of the decedent's arrest was provided, the file did not include any witness statements or summaries of the actual subdual and restraint… In my opinion, a more detailed summary or officer statements should have been requested." (R08, 2013 case)
- "The information about the restraint is lacking. There should be statements available from the officers involved describing the actions taken, and from any eyewitnesses." (R10, 2006 case)
- "I'd like to hear from the individual who was acting as the observer while the individual was restrained." (R05, 2011 case)
- "Maybe specifically ask the witnesses if there was restraint around the neck at any point in the altercation." (R04, 2011 case)
- "The observations (*i.e.*, original statements) of witnesses are always helpful." (R09, 2004 case)

- "Actual interviews with involved personnel, not an investigator's opinion of what they are being told." (R05, exit survey)
- "Witness statements of those involved are best reviewed directly rather than through third parties." (R04, 2007 case)
- "Transcribed interviews with LE and members of hospital security staff who responded." (R06, 2014 case)
- "The law enforcement agencies should be obliged to furnish the OCME with detailed circumstantial information, and this should include first-hand accounts, not information transmitted through a third party." (R10, exit survey)
- "Information from witnesses other than police regarding the type and force used by the police during the restraint of the decedent. Also, police reporting on their own actions may be biased (intentionally or unintentionally)." (R07, 2017 case)

3) Case reviewers often expressed that it would be helpful to view body-worn camera, dash cam, and/or surveillance footage of the incident, especially to clarify details of the restraint.

- "As ever, any body worn video footage is always helpful." (R10, 2010 case)
- "Do the police have body worn cameras? If so, this video should be reviewed by the pathologist to assist understanding of the incident." (R04, 2007 case)
- "Body camera footage to access timeline for restraint with force to decedent's back, and to access exactly at which point and what was occurring at the time the decedent became unresponsive." (R04, 2007 case)
- "In present day, I would ask for any police officer body camera or police vehicle video footage or indoor/outdoor surveillance video footage if available." (R08, 2010 case)
- "Was there any CCTV of the individual in custody? If so, this needs to be reviewed by the forensic pathologist." (R10, 2006 case)
- "Cam footage or video recordings from witnesses could be of major assistance." (R11, 2015 case)
- "Any video footage would be very helpful. I saw in the handwritten record what appeared to be mention of video, but it is not clear whether it was reviewed by the ME." (R10, 2017 case)
- "There was a mention of video in the wagon. Was this reviewed/available?" (R05, 2017 case)
- "With the advent of body cam footage, this may be extremely helpful in determining the role that LE may have played in a death." (R01, exit survey)
- "Access to any video footage if needed, including the body worn video which police tend to wear in the modern day. I found that these pieces of information were frequently lacking, and this made the assessments more difficult in some cases." (R10, exit survey)
- "Where video footage was available, its review was critical, if extremely emotionally difficult, to determine cause and manner of death. Law enforcement in particular needs to be more transparent with their processes." (R02, exit survey)
- "On the top of my list, is any video footage. I suggest universal body cameras for all law enforcement responding to scenes/incidents." (R04, exit survey)

- "Law enforcement agencies should be encouraged to embrace body worn video. This is likely to be to the benefit of their officers rather than a threat, and is of benefit when it comes to reassuring the public that officers have behaved reasonably/appropriately under the circumstances." (R10, exit survey)

4) Case reviewers often stated that the case files contained insufficient information about the decedent's medical history, particularly for the purpose of considering natural disease as a contributing factor.

    - "Insufficient medical history was given." (R10, 2011 case)
    - "A past medical history would be helpful." (R11, 2014 case)
    - "No medical history (if available) was provided. We don't even know if he was alive when the police found him." (R07, 2010 case)
    - "Deceased's past medical history and the circumstances surrounding death all very scant." (R09, 2007 case)
    - "Past medical history was not supplied in detail (*e.g.*, general practice notes)." (R09, 2011 case)
    - "Medical history including any psychiatric history… was not in the file." (R08, 2010 case)
    - "More medical history would be helpful, including any prescribed medication." (R10, 2012 case)
    - "List of decedent's prescribed medications if any, and clarification on his medical history (some documents state none, EMS report states hypertension and gout)." (R08, 2018 case)
    - "Medical history of sickle cell disease/trait?" (R05, 2019 case)
    - "Did the decedent actually have a history of schizophrenia as reported by his family?" (R08, 2007 case)
    - "The medical history should have been sought to exclude/include the possibility of a seizure, arrhythmia, or other cause of death that cannot be identified by autopsy." (R08, 2010 case)
    - "Additional medical history could potentially reveal fatal disease that would have no anatomic findings, such as cardiac conduction system abnormalities or seizure disorder." (R02, 2010 case)

5) As for specific additional testing that would have been helpful, case reviewers most often mentioned additional histology and vitreous fluid testing. Case reviewers also often questioned the appropriateness of the samples on which toxicology findings were based.

    - "Histology should have been taken in this case in my view." (R03, 2003 case)
    - "This report does not include any histology." (R11, 2017 case)
    - "Routine histology should have been performed in such a case to exclude/include the role of any occult natural disease." (R08, 2005 case)
    - "There is no mention in the report of any histology of the other internal organs. The brain appears to have been examined by a neuropathologist, but there is no record of lung, liver, kidney histology, etc." (R10, 2004 case)
    - "I did not see evidence of any histology being carried out on the heart... To have failed to sample the heart for histology would be a significant omission in a case of this kind. At least some of the seemingly fresh rib fractures could have been sampled for histology to ensure that they were indeed fresh." (R10, 2010 case)

- "Histology on at least the spleen may have assisted in determining whether there was underlying spleen pathology to contribute to susceptibility to laceration." (R08, 2012 case)
- "Vitreous electrolyte analysis to check the decedent's diabetes status." (R04, 2007 case)
- "Vitreous biochemistry could have been useful." (R10, 2004 case)
- "Vitreous chemistries would also have been useful to exclude other entities." (R08, 2005 case)
- "Additional laboratory testing to include vitreous electrolytes." (R02, 2010 case)
- "In no cases was vitreous chemistries obtained; occult electrolyte and glucose abnormalities could have been missed." (R08, exit survey)
- "It looks like blood taken at autopsy, rather than hospital blood, was tested for PCP, this seems peculiar given that the level at the time decedent was admitted to hospital would be most pertinent to the investigation of death." (R02, 2015 case)
- "Toxicology: Performed on heart blood, when peripheral blood is the ideal substrate. Should include why peripheral blood was not used (could not be obtained)." (R08, 2010 case)
- "Tox testing on hospital admission samples (if available)." (R07, 2010 case)
- "I thought I saw a request to obtain the admission blood. I probably would have run a panel on blood prior to the brother's visit and blood taken immediately after, if possible." (R05, 2011 case)
- "Toxicology doesn't appear to be complete and on non-standard samples." (R11, 2011 case)
- "I would want to know that toxicology had been performed on non-autopsy samples, because otherwise drug toxicity remains a serious concern in this case." (R10, 2010 case)
- "What blood sample was used for tox (*i.e.*, date/time of sample)?" (R03, 2011 case)
- "Additional toxicology studies on admission blood if available." (R06, 2012 case)
- "This OCME performed toxicology on cardiac blood in all cases in the audit. This seems to be their routine practice. Peripheral blood is generally considered the ideal substrate and the "gold standard", with use of cardiac blood if peripheral blood cannot be obtained." (R08, exit survey)

<u>Accuracy and Completeness of OCME's Post-Mortem Examinations</u>

1) Case reviewers often expressed concern over the limited number of autopsy photographs, which many considered insufficient, especially for complex deaths involving restraint.

- "Are these really all of the photographs that exist for this case? I expected dozens more based on the autopsy report." (R05, 2007 case)
- "The pictures are inadequate to document the findings in this case." (R02, 2003 case)
- "If this were my case, there would likely be over a hundred detailed scaled images of all the injuries." (R09, 2007 case)
- "If these are the only photographs of the body, then this is not an adequate photographic record of the decedent." (R10, 2007 case)
- "It might be just local practice, but I expect to have more photos of the body (general and localised) with larger scales." (R11, 2018 case)

- "It's amazing how few photos used to be taken during autopsies before digital photography became commonplace. It would have been nice to have more photos, but I think this was in keeping with the practice of the time." (R07, 2006 case)
- "There should be more photographs taken in a case like this one." (R10, 2011 case)
- "Three photos is inadequate for an in custody death." (R08, 2005 case)

2) Case reviewers often noted that OCME's autopsy photographs neglected to document important information—such as failing to document certain areas or examinations altogether, neglecting to include a visible measurement scale to facilitate the interpretation of patterned skin injuries, and neglecting to produce "negative photos" that document the absence of injuries to a certain area.

- "The photos are very limited only showing the external parts of the body mostly generally with no close ups. There are no internal photos included." (R11, 2012 case)
- "No photos of cut down of the back or other closeups of injuries." (R01, 2007 case)
- "Critical areas such as the inside of the eyelids were not shown." (R09, 2012 case)
- "There are no photos of the eye's conjunctivae or sclerae to confirm the petechiae. This puts into question the mechanical (traumatic) asphyxia in the decedent." (R04, 2007 case)
- "There is no documentation of examination of subcutaneous tissues." (R02, 2007 case)
- "There should be photos of the soft tissue cut down/dissections that were mentioned in the report." (R08, 2011 case)
- "Shaving the hair from the skin in the areas of injury would make the injuries easier to see." (R06, 2006 case)
- "There needs to be more thorough documentation. There aren't even close up photos of the wrists/ankles where the restraints were applied!" (R05, 2011 case)
- "There are no photographs of these injuries with a right-angled measuring scale, and this is important to allow for matching/comparison of these patterned injuries to objects or surfaces at the scene where the arrest occurred." (R10, 2005 case)
- "Photos of taser injuries and probes should have been taken with a scale." (R08, 2005 case)
- "Each injury or cluster of injuries should be photographed and typically "negative" photos of certain body regions (eyes, mouth, external and internal neck, genitalia…) would be taken to show the absence of injury." (R08, 2010 case)
- "There are no pertinent negative photos—like photos of the eyes or neck muscle dissection showing an absence of asphyxia findings." (R04, 2004 case)
- "I'd like to see images of pertinent negatives to show there is no trauma." (R05, 2009 case)
- "The case should be recorded more fully to facilitate review later (including negative external findings and organs)." (R09, 2009 case)

3) Case reviewers sometimes expressed concern over the quality of OCME's autopsy photographs, including their distance and lighting, and for older cases, the lack of color photos.

- "The photographs are very poorly composed with lots of background showing. Extremely distracting and takes away from the findings of the photo." (R05, 2011 case)

- "There are very limited photos available. These don't appear to have been taken professionally. There are no close ups." (R11, 2011 case)
- "No photos of cut down of the back or other closeups of injuries." (R01, 2007 case)
- "The image quality does not permit assessment of the absence/presence of petechiae." (R09, 2016 case)
- "These photos are truly terrible. I can't tell if the decedent's face is congested based on the lighting and black/white coloring. There's minimal documentation of the injuries to any part of the body. The neck hemorrhages are important to see because it is unclear if they are traumatic or related to therapy." (R05, 2003 case)
- "Why, if color photography was an option as indicated on one of the OCME pages, are the photos black and white? It is harder to see the described wrist injuries." (R06, 2006 case)
- "The autopsy photos are black and white wherein the quality is not good." (R12, 2003 case)
- "The photography was very poor. Much more detail is required and the images should be taken by a professional photographer." (R09, exit survey)

4) Case reviewers sometimes noted apparent discrepancies between the autopsy photos and report, such that the photos sometimes depicted injuries that were not mentioned in the report.

- "The autopsy report doesn't contain some overt skin injuries present on the photos. Therefore, such casts doubt on objective reporting of findings particularly flap subcutaneous dissection as well as internal finding." (R12, 2018 case)
- "The photos capture the extent of the abrasions more thoroughly than the autopsy report (which didn't report them all)." (R07, 2019 case)
- "The abdomen is pretty distended in the photos (as was noted by clinicians at hospital) but is described as 'flat' in the autopsy report." (R05, 2003 case)
- "I could see a number of injuries that were not mentioned, including a cuff tramline mark on the left ankle." (R11, 2004 case)
- "This man's head appeared to be congested… The medical notes documented a congested head but this doesn't come across in the autopsy report." (R09, 2005 case)
- "The autopsy report notes that there is no hemorrhage on posterior cutdown of the back and extremities. The photographs suggest to the contrary." (R12, 2015 case)
- "There is a photo of the posterior neck with a possible bruise, but no posterior neck dissection." (R01, 2018 case)

Reasonableness of OCME's Determinations

As shown in Table 19 above, at least one case reviewer judged OCME's cause-of-death determination as "not reasonable" for 41 of the 87 audit cases (47.1%), and at least one case reviewer judged OCME's manner-of-death determination as "not reasonable" for 57 of the 87 cases (65.5%). Below are recurrent themes in case reviewers' explanations as to why they judged OCME's determinations as not reasonable, along with representative case reviewer comments to illustrate each theme.

1) Case reviewers consistently rejected "excited delirium" as an acceptable cause of death, particularly if it was used without any qualification or further explanation.

[*Note:* As noted above, OCME's cause-of-death statements mentioned "excited delirium" or some variant thereof for 42 of the 87 audit cases (48.3%). In contrast, across 261 total reviews—*i.e.*, 87 cases times three case reviewers—there were only five total instances (1.9%) of a case reviewer using that terminology in their cause-of-death opinion, and all were given by the same case reviewer.]

- "Forensic pathologists have reached consensus that excited delirium is not a pathologic diagnosis. Therefore, the use of such as a diagnosis has become obsolete." (R12, 2012 case)
- "Excited delirium is no longer an appropriate diagnosis." (R01, 2006 case)
- "Agitated or excited delirium may have been considered an appropriate cause of death description at the time this case was evaluated, but has since been rejected by the medical community." (R02, 2012 case)
- "Excited delirium is not an acceptable cause of death because it is not etiologically specific, and in this case is used to excuse the involvement of the police subdual in this person's death." (R07, 2006 case)
- "Although the etiology of the agitated delirium is stated (cocaine induced), it is my opinion that agitated/excited delirium should not be used as a cause of death as the term is controversial and not a specific, independent cause of death." (R08, 2010)
- "The terminology of 'excited delirium' is outdated in the context of drug toxicity. This case does not even have a tox component, compounding it inappropriateness." (R03, 2007 case)
- "The use of excited delirium is not recommended but it is likely that this was acceptable at the time." (R11, 2010 case)
- "It is no longer standard practice to use 'excited delirium' as a stand-alone COD." (R04, 2007 case)
- "Excited delirium syndrome should not be used without qualification." (R10, 2005 case)
- "Although excited delirium is no longer deemed an acceptable cause of death, when it has been used in the past, there was typically a history of behavior to support the diagnosis. There is nothing known about the decedent's behavior in this case." (R02, 2010 case)

2) Case reviewers often noted that OCME's cause-of-death statements neglected to acknowledge restraint (and/or its associated physiological effects) as a potential contributing factor.

- "I think there should be some reference to the possibility of restraint playing a role in the death and the COD should at least reflect that uncertainty." (R10, 2006 case)
- "I do not believe that one can exclude the possibility that the struggle and restraint played a role in his death, which is not even included in their final diagnoses." (R01, 2016 case)
- "There is absolutely nothing in the COD regarding LE involvement." (R01, 2007 case)
- "Although I agree that complications of n-ethylpentylone intoxication did contribute to death, I believe the lack of mention of the police restraint and subdual is incorrect." (R07, 2016 case)
- "Asphyxia is a mechanism of death and not an etiologic specific cause of death… There should be an underlying cause of the asphyxia stated such as 'due to subdual and prone restraint by law enforcement officers' or 'due to neck compression', etc." (R08, 2012 case)
- "Listing only cocaine intoxication does not implicate the potential contribution of blunt force injuries, police restraint, and/or natural disease." (R07, 2006 case)

- "Ignores the significant struggle and restraint and temporal relationship with cardiac arrest… If stress of the struggle contributed, as is mentioned in the report's opinion, why is it not included in COD lines?" (R06, 2018 case)

- "The wording should be: Police restraint in the presence of phencyclidine in blood (NOT phencyclidine intoxication)." (R12, 2007 case)

- "The author of report has ignored a number of other factors including the lack of toxicology as well as any role of the restraint." (R11, 2007 case)

- "While I agree that PCP/Ethanol intoxication was likely the precipitating factor… I can't exclude the role that a struggle, conductive electronic device, and prone positioning had on this… vulnerable individual." (R05, 2011 case)

- "There is a clear temporal relationship between restraint and collapse… Author ascribes cause of death disproportionately to elements such as dehydration and mild nodal arterial dysplasia." (R03, 2013 case)

- "I would add (although I am not sure whether it was) the pathophysiological stress of the incident to the COD." (R09, 2014 case)

3) Case reviewers noted numerous audit cases in which OCME's manner determinations clearly violated the "but-for" principle, in that OCME's autopsy report explicitly acknowledged that restraint was a contributing factor in the death but did not certify the death as a homicide.

- "The report acknowledges that the restraint contributed to death, so homicide is the most reasonable manner of death determination." (R02, 2018 case)

- "I consider the manner of death to be homicide, because I believe that the restraint has contributed to death. The author of the report indicates that they believe the restraint was a factor too, so I would suggest that they should consider the manner of death to be homicide rather than undetermined." (R10, 2010 case)

- "If they're invoking restraint in the COD, why is the manner undetermined? That doesn't make sense to me." (R05, 2019 case)

- "If restraint is part of COD, why is MOD not homicide?" (R06, 2007 case)

- "Although the forensic pathologist opines/acknowledges that physical restraint was a factor in causing death, the manner was listed as undetermined." (R08, 2018 case)

- "Since the cause of death is listed (appropriately) as 'PCP induced agitated delirium associated with police restraint', this means that the police restraint is part of the cause of death. Therefore, the actions of others (the police) contributed to death, pointing to a manner of homicide." (R07, 2018 case)

- "The forensic pathologist opines/acknowledges that 'the action of restraint itself did play a role in the cause of death'. However, they state that 'the degree to which it did, is unknown'. Although this is not an unreasonable and in fact true statement, it is my opinion and that of the NAME that when restraint plays a role in the cause the of death the manner should be homicide." (R08, 2003 case)

- "In my experience, if an inflicted injury contributes to causing death, the 'relative' contribution in comparison to underlying drugs and/or natural disease is irrelevant. MOD = homicide." (R06, 2015 case)

- "There is an acknowledged contribution from restraint in this case. In any case where the intentional or volitional actions of another person contributed to death, homicide is the most appropriate manner of death. This is correct even when the relative contributions of many factors cannot be established." (R02, 2013 case)

- "I think the restraint has clearly contributed to death in this case - indeed the comments alluded to this. I'm not sure that the 'stress' of the incident, which included a struggle with the police, has been taken into account." (R09, 2014 case)

- "Where the MEs are confident that restraint has played a role, then they should record these cases as 'homicide' as per the NAME guidelines." (R10, exit survey)

4) Case reviewers stated that OCME tended to over-certify and/or mis-certify deaths as 'undetermined', and when they certified a death as 'undetermined', they often neglected to adequately explain why.

[*Note:* As shown in Table 3 above, of the audit cases for which case reviewers reached a consensus manner-of death opinion, OCME certified 48 of 74 deaths (64.9%) as 'undetermined', but case reviewers judged only 14 of those same 74 deaths (18.9%) as 'undetermined.']

- "Undetermined as manner is for cases where you don't know what happened, not when you cannot make up your mind." (R03, 2010 case)

- "I think the OCME's practice of using 'undetermined' as manner of death for cases in which multiple factors, the relative contributions of which cannot be determined, led to death is an outlier in the US medical examiner community. This indicates a need for refamiliarizing OCME with standard practices." (R02, 2015 case)

- "It seems that the OCME defaults to undetermined manner in restraint related deaths when trauma or neck compression did not cause death, however fail to recognize that prone restraint, or other restraint methods, can compromise ventilation/circulation or cause sudden death by other mechanisms." (R08, 2013 case)

- "Though I did not go back and go through the unredacted reports from the cases I reviewed, in my recollection it seems that a LOT if not all of them had MOD undet[ermined], which seems like dodging the question." (R06, 2015 case)

- "These are difficult cases, and often undetermined is the safest call for the ME as no one is responsible. However, it is our responsibility to make the hard calls and if it is more than likely a homicide, we have to make the call." (R01, 2018 case)

- "OCME should abandon the practice of calling restraint deaths with other contributing factors undetermined." (R02, 2010 case)

- "It is not appropriate to just call all OD cases undetermined." (R02, 2015 case)

- "If the manner of death is 'undetermined', then the basis for that determination should be described in the opinion statement." (R07, 2019 case)

- "Please list reason for using 'undetermined' so people reviewing the report can follow the reasoning behind this determination." (R05, 2015 case)

- "Because there is almost no discussion regarding how the manner of death was arrived at, then it is not possible to consider how the determination was made, and whether it was reasonable or not… This report would fail a Critical Conclusions Check in the UK, particularly given the absence of any meaningful commentary." (R09, 2017 case)

- "If the report summary/comment states decedent was arrested without incident, why is MOD undet[ermined] instead of accident? Comment should clarify." (R06, 2003 case)

- "Whilst the agreement was the manner of death was undetermined, the process of reaching such conclusion in the report does not seem too logical." (R11, 2011 case)

- "I'm uncertain if this case is undetermined due to MD's convention of calling all drug deaths undetermined, or if it was called undetermined for another reason (suicide?). I would have called this an accident." (R01, 2009 case)

Difficulty of Audit Cases

1) Reviewers acknowledged the greater difficulty and rarity of restraint-related death investigations compared to routine casework, as well as the importance of getting such investigations right.

    - "Deaths involving individuals who die during an encounter with law enforcement are some of the most complex cases that a forensic pathologist can be tasked with handling." (R05, exit survey)

    - "Most cases, even in the forensic setting, have one clear driving force and unambiguous circumstances. The cases included in the review universally have more than one underlying condition/entity and exceptional circumstances." (R03, exit survey)

    - "Every case in which someone dies in custody and restraint is a factor is complicated. During my career so far, these types of cases have been relatively uncommon." (R02, exit survey)

    - "We only reviewed officer-involved/restraint-related cases, which are inherently difficult. They also occur in my jurisdiction, but I cannot judge the frequency. Reviewing multiple in fairly quick succession makes it *seem* like a lot, but it probably isn't." (R06, exit survey)

    - "These tend to always be complex and require extensive investigations. In my practice such deaths are relatively uncommon." (R11, exit survey)

    - "In general, these were complex cases with multiple issues happening simultaneously… Many times, the case circumstances are unclear or incomplete. And because the circumstances are often difficult to untangle, this makes determining a manner of death all the more difficult. And there are major consequences for individuals and agencies for different manner of death determinations… so you don't want to get it wrong." (R07, exit survey)

    - "They are often the most difficult in my view due to the significant ramifications that our answers can cause to the families, LE and the organization itself." (R01, exit survey)

Overall Quality of OCME's Work

1) Case reviewers were generally impressed by OCME's routine use of consultation services, especially cardiac pathology and neuropathology—though some case reviewers expressed concern that the latter did not include microscopic examinations.

    - "The OCME got neuropathology examinations as part of almost every examination, which is very thorough and appropriate. Similarly, there was cardiovascular pathology for almost every case, which is above and beyond what I have seen in other offices." (R02, exit survey)

    - "Having a specialized brain and heart examination for most of these cases is above standard." (R04, exit survey)

    - "Many cases appeared to have been thoroughly examined with cardiac pathology and neuropathology performed." (R11, exit survey)

    - "The autopsies seemed to be competently performed. Cardiac and neuropath consultation was used liberally." (R07, exit survey)

    - "Similar to other offices I've worked in, with the exception of the majority of cases getting formal cardiac pathology and neuropathology consults, which is nice." (R05, exit survey)

- "routine cardiac and neuropathology consultations" (R06, exit survey)
- "Almost all of the Neuropathology reports did not include a microscopic description, leading me to believe these were gross only neuropathology consultations." (R08, exit survey)
- "In some cases, there seemed to have been neuropathology undertaken but this did not include microscopy, which would be an expectation where I work." (R10, exit survey)

2) Case reviewers noted that the quality of OCME's investigations, autopsy procedures, and reports varied between cases, with some believing that their quality had generally improved over time.

- "A degree of variability in detail of autopsy procedure and autopsy reports is expected/usual and similar to other agencies." (R08, exit survey)
- "There was some variability in work-up of the decedents." (R06, exit survey)
- "The investigation into the circumstances was quite variable depending on the case… Some cases had thorough reports from medics, medical records, and police investigation. Other cases had minimal or no records from one or more of those agencies." (R07, exit survey)
- "My impression was that the detail and thoroughness increased over time and was more marked in more recent cases. There seemed to be variation between pathologists - basing this on the different handwriting on the autopsy record forms!" (R10, exit survey)
- "In the earlier cases, it is my opinion that there was less information gathered, but this changed over time." (R01, exit survey)
- "The standard was somewhat variable with the later cases (with body cam for example) were of much higher quality." (R11, exit survey)
- "In my opinion, sufficient details regarding the circumstances of death (*i.e.* scene and restraint) were lacking in most cases. A few cases had excellent details and these seemed to be more recent cases (perhaps due to overall increased awareness/education in forensic pathology community about restraint related deaths in the last decade or so)." (R08, exit survey)

3) Case reviewers generally expressed that OCME's autopsy reports did not provide sufficient justification for their manner determinations.

- "One of the main differences seen in the reports by the pathologist was the lack of explanation of how the conclusions had been drawn. They were often very brief - whereas in my experience of similar reports, the discussion segment is long and includes scientific references." (R09, exit survey)
- "While they do write an opinion, oftentimes they don't really explain the reasoning behind that opinion, which is crucial in cases with a manner of 'undetermined.'" (R05, exit survey)
- "It was not always clear from the opinion statement why a particular manner of death was chosen." (R07, exit survey)
- "The way manner of death was selected in most of these cases is bemusing." (R03, exit survey)
- "Even when allowing for the different approach at the time, there are cases where the conclusion seems somewhat not too logical or in one or two cases may be even rushed." (R11, exit survey)

4) Some case reviewers discussed OCME's relationship with police, with some noting that the quality of OCME's investigations naturally depends on the amount and quality of information they are given, while others expressed concern over the possibility of pro-police bias.

- "Like other forensic pathology services, the OCME is at the mercy, to some degree, of the other agencies with whom they work, *e.g.*, law enforcement." (R10, exit survey)
- "I suspect that OCME is reliant on their law enforcement partners for 1) determining how in depth an investigation is going to be and 2) actually providing that information to OCME." (R05, exit survey)
- "Many, if not most, of the OCME reports for deaths involving restraint in custody had the manner of death certified as undetermined, despite the acknowledgment that restraint caused or contributed to death. The rationale for this appeared very contorted to me and I thought OCME was making a concerted effort to avoid the appearance of assigning blame to law enforcement." (R02, exit survey)
- "It is difficult to tell, but there may have been a slight bias towards LE in determining the manner of death in some cases. It is our responsibility to be the most objective entity in these situations. While often not popular, our determinations must be objective and scientifically based." (R01, exit survey)

<u>Practice and Policy Recommendations</u>

1) Case reviewers stated that OCME would benefit from adopting standardized procedures (which may vary by case type) to promote consistency in the information sought and examinations performed.

- "Make certain procedures and documentation standardized on specific categories of cases (to include neck dissections, soft tissue cut downs and extensive autopsy photo documentation)." (R04, exit survey)
- "Developing local/national SOPs for these and other type of cases. This is to cover all aspects of the investigation including police investigation, dealing with such cases by the police/medics, autopsy examination, toxicology, minimum required info, etc." (R11, exit survey)
- "For instance, our crime lab photographers have a standardized set of photos taken on all suspicious cases and cases with charges pending." (R04, exit survey)
- "Many offices don't have a formal SOP dictating which photos should be taken in each type of case and it is left up to individual pathologist discretion." (R05, exit survey)
- "A standardized approach to histological sampling." (R10, exit survey)
- "Is there a standard minimum work-up for an in-custody/restraint type case?" (R06, 2004 case)
- "A unified protocol to be used in such cases would be beneficial in standardizing the forensic pathology aspect." (R11, 2018 case)

2) Case reviewers stated that OCME would benefit from having internal and/or external case discussions and/or peer review procedures—particularly for challenging cases—to encourage consideration of multiple perspectives and ensure that written reports meet a minimum standard of quality.

- "Autopsy reports of in custody deaths should be reviewed by at least one other forensic pathologist. (In some jurisdictions, ALL other FPs in the office review the case.) The reviewer should not always be the same person (*i.e.*, the Chief Forensic Pathologist or Deputy Chief) to avoid bias." (R05, exit survey)
- "The report should be read by a second pathologist to consider whether the report is reasonable and detailed enough." (R09, exit survey)

- "At least some cases seem to have reviewed by one other Forensic Pathologist, but it unclear whether this occurred for all cases." (R08, exit survey)

- "I think this is quite a difficult case and, as such, these cases often benefit from discussion with colleagues and consideration of other opinions. In the UK, every report gets a Critical Conclusions Check whereby the reasoning of the report is tested. This could be of benefit especially in these more difficult cases." (R09, 2011 case)

- "Internal/external audit or review process is needed… Engagement with other and international centers to develop such procedures and offer an forum to discuss and learn from other experiences." (R11, exit survey)

- "These cases are often extremely difficult and must be discussed with a group of other forensic pathologists. Attempting to determine the cause and manner of death as a lone pathologist can lead to lack of objectivity that we may not even be aware that exists." (R01, exit survey)

- "Overall, this process has really highlighted how important discussion and multiple viewpoints are in these difficult cases. I would never want to sign out a police-involved death without discussing the case with my colleagues, and probably consensus conferences should be recommended for all of these kinds of cases." (R07, exit survey)

- "Regular meetings to discuss cases with colleagues from other institutions. Such approach may assist to bring plurality of ideas, reasoning and approach from persons outside the OCME." (R12, 2013 case)

3) Case reviewers suggested that responses to individuals in crisis should involve not only police but also other professionals with specialized training in mental health and/or de-escalation. For certain audit cases, some case reviewers questioned whether a police response was necessary at all.

    - "Some jurisdictions have implemented multi-disciplinary response teams that include police officers, paramedics, social workers/counselors, and sometimes physicians that are specifically trained to effectively respond to agitated or psychotic individuals who may require police restraint." (R08, exit survey)

    - "Dealing with people having mental health crises (substance involved and otherwise) is not an appropriate role for LE and might be better handled by specifically trained behavioral health crisis intervention teams... Emergency medical responders and behavioral health crisis intervention teams who are empowered to intervene with police procedures should be present during any situation in which people are taken into custody." (R02, exit survey)

    - "Have specialized trained social service workers and/or EMTs present at all officer-involved scenes with people who are in psychological distress… Maybe the situation can de-escalate to the level of voluntary passive restraint (if restraint is necessary at all) in order to get the individual transported to a hospital where they can be medically stabilized. I believe having an intentional trained 'calming agent' at the scene could decrease the risk of restraint-related deaths in custody." (R04, exit survey)

    - "Have people trained in handling people in crisis respond to the scene." (R05, exit survey)

    - "I was struck during these case reviews by the large numbers of unnecessary encounters between law enforcement and citizens. With a notable exception or two, there did not seem to be any urgent need for these people to be taken into custody. Everyone involved would have been better off if LE had just gone back to the precinct." (R02, exit survey)

    - "Leave something that is quiet, quiet. At least a couple of these cases included people 'behaving erratically' but not really presenting themselves as a danger to others. Seems like law enforcement's actions escalated the situation that eventually led to someone dying." (R03, exit survey)

4) Case reviewers suggested that police should be better educated about the dangers of improper restraint techniques (including some specific examples) and/or better trained in the proper use of non-lethal restraint techniques that are developed in conjunction with medical professionals.

- "I think law enforcement agencies need to be aware of the dangers of restraining highly agitated people, and the risks that may entail." (R10, exit survey)
- "Increase understanding of law enforcement and healthcare personnel that restricting breathing slightly, whether from prone positioning or awkward positioning, while simultaneous increasing the need for oxygen intake and (more importantly) carbon dioxide excretion is a recipe for bad outcomes." (R07, exit survey)
- "It would be important that SOPs are developed and training is made available to everyone involved in these cases, including the police and indeed medics, to understand the risks of dealing with such patients and learn about ways to reduce this." (R11, exit survey)
- "It is important for LE to realize that many of these persons have underlying diseases which will be exacerbated by these situations." (R01, exit survey)
- "Avoid prone restraint techniques and applying pressure to the upper body and back, and avoid neck/choke holds or applying pressure to the neck. Avoid restraint devices that could compromise ventilation/oxygenation or pose a strangulation risk." (R08, exit survey)
- "Ban any kind of choke holds or pressure restraint applied to the neck." (R04, exit survey)
- "They also need to get past the idea that conducted electrical devices or TASERs are a non-lethal intervention, because these things aren't safe." (R02, exit survey)
- "No taser discharged at chest level and above on the front/back of the body." (R04, exit survey)
- "Responding officers [should] have specialized training on non-lethal restraint." (R04, exit survey)
- "Specialist training in restraint. I think the UK developed some techniques alongside the pathologists in these cases. I'm not sure if the USA has similar guidelines for officers." (R09, exit survey)
- "It would be wise, in my view, for these agencies to engage with the medical profession, including emergency physicians and psychiatrists to help devise strategies to limit the risk." (R10, exit survey)

Summary and Recommendations

In April 2021, over 450 medical experts signed an open letter to Maryland Attorney General Brian Frosh and others, calling for an investigation into the practices of the Maryland Office of the Chief Medical Examiner (OCME) for certifying deaths that occurred in police custody during Dr. David Fowler's tenure as Chief Medical Examiner (2003-2019). The letter expressed concern that OCME may have classified deaths in a way that is "outside the standard practice and conventions for investigating and certification of in-custody deaths," and that as a result, OCME may have inappropriately ruled an unknown number of homicides as undetermined or accidental deaths.

The Audit Design Team (ADT) was tasked with two primary goals: (1) to evaluate the appropriateness of OCME's cause- and manner-of-death determinations for in-custody deaths during Dr. Fowler's tenure, and (2) to assess whether patterns within OCME's determinations suggest the possibility of racial and/or pro-police bias. The ADT first identified 87 OCME cases that fit the audit criteria of unexpected deaths that occurred during or shortly after restraint. Those cases were then independently reviewed by a panel of 12 expert case reviewers (with three assigned to each case). For 74 of the 87 cases, the three case reviewers reached a unanimous opinion on the manner of death.

Appropriateness of OCME's Determinations

The audit results substantiate the concerns expressed in the April 2021 letter to Maryland's Attorney General, as case reviewers frequently disagreed with OCME on the cause and manner of death. Overall, OCME certified only 12 of the 87 audit cases (13.8%) as homicides, while case reviewers judged four times as many (48 of 87, or 55.2%) of those same deaths as homicides (see Table 3). This included 36 cases that case reviewers judged as homicides but which OCME had assigned to a non-homicide category—either undetermined (29 cases), accident (5 cases), or natural (2 cases). Furthermore, the audit found that OCME's cause-of-death included the discredited concept of "excited delirium" for 42 of the 87 audit cases, nearly all of which (39 of 42, or 92.9%) OCME certified as "undetermined." The case reviewers, on the other hand, judged most of those same 42 deaths (59.5%) as homicides (see Table 15).

OCME's failure to properly classify such a large number of deaths as homicides is inconsistent with national standards of death investigation and undermines important objectives of the death investigation system. While classifying a death as a homicide does not necessarily mean that it resulted from misconduct or criminal actions, neglecting to classify homicides as such effectively discourages—or even prevents—efforts to further investigate the circumstances of the death and make a fair determination of whether any person(s) should be held responsible. Additionally, the systematic undercounting of restraint-related deaths as homicides jeopardizes public health and safety by deflecting attention from dangerous situations, which precludes public officials from raising critical questions about whether some, or even most, of such deaths could have been prevented. Finally, OCME's persistent misclassification of restraint-related homicides occurring in police custody as non-homicides would have served as a barrier to recognizing and identifying unnecessarily dangerous police practices in the application of restraint, thus depriving law enforcement agencies of opportunities to improve training and prevent future deaths.

Assessments of Racial and Pro-Police Bias

The audit results revealed patterns within OCME's determinations that are consistent with the possibility of both racial bias and pro-police bias. Overall, OCME less often certified as homicides the deaths of individuals who were non-White or were restrained by police (see Tables 5 and 9)—although the audit methodology did not permit assessment of whether the observed disparities resulted from those factors *per se* or from other relevant circumstances that happened to correlate with those factors. More to the point,

OCME more often failed to appropriately classify homicides as such when the decedent was non-White or was restrained by police (see Tables 8 and 12).

An important feature of the audit design was that the decedent's race was hidden from case reviewers until after they had rendered judgments of cause and manner of death, and reviewers very rarely (only 3.5% of the time) changed their manner-of-death opinion after viewing the autopsy photographs. These audit findings therefore suggest that race played a role in OCME's manner determinations for reasons beyond the considerations that guided case reviewers' manner-of-death opinions for those same cases.

Case reviewers could not be blinded as to whether the decedent was restrained by police or by others, and hence the observed difference in how OCME and case reviewers classified those subsets of cases might reflect pro-police bias within OCME, or it could reflect anti-police bias among the case reviewers (or some combination of the two). However, the possibility of pro-police bias within OCME is further supported by the fact that OCME's cause-of-death statements more often failed to acknowledge restraint as a potential contributing factor if the decedent had been restrained by police rather than by others (see Table 13). Indeed, case reviewers often expressed the concern that OCME neglected to acknowledge restraint as a contributing factor to the death when, in their view, it clearly had been.

Practice and Policy Recommendations

In light of these findings, it is evident that reforms are needed at OCME, and perhaps also in policing more generally. Informed by the case reviewers' judgments and comments as well as our own expertise, the ADT respectfully suggests that Maryland State officials consider the following steps toward reform:

- Issue policy statements advising OCME's medical examiners of the importance of following accepted national standards for certifying the cause and manner of death, and/or recommend retraining of OCME's medical examiners on those standards, including especially:
    - utilizing NAME's "but-for" standard for homicide determinations, which mandates that deaths resulting from the actions of another person, regardless of that person's intent or affiliation, be certified as homicides, and
    - adopting the current medical and scientific consensus view that rejects assigning the cause of death to the discredited concept of "excited delirium," which, when used, is a roadblock to a complete and just determination of cause and manner of death.
- Take steps to improve OCME's documentation of post-mortem examinations in cases involving deaths in custody, including more extensive photographic documentation and, to the extent possible, standardizing the procedures for investigations of in-custody deaths.
- Recommend that OCME take steps to improve their investigation and documentation of the circumstances of in-custody deaths, especially the nature and duration of restraint (including the positions and behaviors of all persons involved) in cases where restraint may have contributed to the death. Such steps should also include:
    - training medical examiners in the current medical and scientific understanding of the potential dangers of prone weighted restraint,
    - developing a list of essential information to be gathered and reviewed when investigating a restraint-related death in custody,

- expanding OCME's investigative capacity so that death scene investigators can more easily supplement police investigations by, for example, collecting relevant documents or directly interviewing witnesses regarding the decedent's medical history and/or the circumstances of their death, and

- requiring continuing education and/or periodic external peer review to ensure that examiners remain abreast of the relevant medical and scientific literature and produce reports that meet an acceptable standard of quality. External peer reviews could ideally be performed by reviewers who are kept unaware of the decedent's race.

- Take steps to ensure that police agencies adequately document the circumstances of in-custody deaths, such as recording potentially dangerous encounters with civilians via body-worn cameras and taking verbatim statements from witnesses (and especially non-police witnesses).

- Review the 36 audit cases for which case reviewers unanimously agreed that the manner of death should have been (but was not) certified as homicide—first to determine whether additional actions are warranted for the decedents and their families, and second to consider what can be learned from those cases in terms of steps that might be taken to reduce the risk of death during potentially dangerous encounters between police and civilians.

    - Given that many audit cases involved police encounters with individuals who were suffering from mental illness and/or substance abuse, this review may also reveal opportunities for improved police training on how to handle such individuals and situations more safely, and/or opportunities for collaboration between police agencies and other agencies with specific expertise in such matters (*e.g.*, mental health professionals).

Our final recommendation is that if feasible, the Attorney General, in consultation with the Governor's Office, should conduct a follow-up audit five years after the release of this report to determine whether the above recommendations have succeeded in reforming OCME's practices. The follow-up audit should utilize the same procedures developed for this audit, and focus on restraint-related deaths in police custody that were evaluated by OCME in the intervening period. We suggest the following specific steps:

- OCME shall identify all restraint-related deaths in police custody that it has evaluated since this report was issued.[23]

- Files for those cases shall be provided to an Audit Design Team (ADT), which will redact the files in the same manner as for the current audit.

- The ADT and OAG staff shall recruit an independent panel of expert reviewers in the same manner as done for the current audit.

- The independent reviewers shall independently evaluate the cases, following the same sequential unmasking procedure used in the current audit.

- The ADT will compare the evaluations of the independent reviewers with OCME's determinations.

A follow-up audit will allow the State to determine how successfully reforms instituted in light of the current audit have addressed the underlying problems discussed in this report. It will reveal how far OCME has progressed toward evaluations that accord with national standards and serve the best interests of the justice system and the public, while identifying any residual problems that remain to be addressed.

[23] These recommendations presume that the number of such cases is sufficient for a meaningful review—in our judgment at least 20. If fewer than 20 cases have occurred in the five-year period, then the follow-up audit should be postponed until sufficient cases are available.

As a final point, we hope that state officials in other jurisdictions will consider undertaking similar audits to better understand the extent to which the concerning issues that were uncovered in the course of this audit are also present in other US medical examiner/coroner systems.

Appendix A: Search Terms Used to Identify Cases Involving Restraint

Agitat*
Arrest
Breathe
Conducted Electrical Weapon (CEW)
Chok*
Cocaine intoxication
Cocaine toxicity
Cuff
Deliri*
Detain
Fasten
Haldol
Haloperidol
Handcuff
Injection
Ketamine
Law enforcement
Lorazepam
Methamphetamine
Olanzapine
Police
Promethazine
Prone
Release
Security
Sedation
Subdue
Submission
TASER
Uncuff
Unresponsive
Untie
Ziprasidone

Note: Including an asterisk at the end of a word stem searches for all variants of a given term. For example, the search term “agitat*” will return cases that mention “agitate,” “agitated,” “agitation,” etc.

Appendix B: List of Decedents in Audit Cases

Name	Year of Death	County[24]	OCME MOD[25]	Audit MOD
Maurice McClain	2003	Anne Arundel	Undetermined	Accident
Michael Cofiell	2003	Anne Arundel	Undetermined	Undetermined
Steven Ellison	2006	Anne Arundel	Undetermined	Undetermined
Michael Butkus	2009	Anne Arundel	Natural	[No Consensus]
Patrick Toney	2012	Anne Arundel	Undetermined	Undetermined
Pedro Doradea	2012	Anne Arundel	Undetermined	Undetermined
Shawn Floyd	2018	Anne Arundel	Undetermined	Homicide
Daric Bishop	2003	Baltimore City	Undetermined	Accident
Gregory Williams	2003	Baltimore City	Undetermined	[No Consensus] (2 of 3 case reviewers opined Homicide)
Shawn Bryant	2004	Baltimore City	Undetermined	[No Consensus] (2 of 3 case reviewers opined Homicide)
Charles Karmasek	2005	Baltimore City	Undetermined	Accident
Don Scott	2005	Baltimore City	Undetermined	[No Consensus]
Rodney Wilson	2005	Baltimore City	Undetermined	Homicide
Dondi Johnson	2005	Baltimore City	Accident	Homicide
William Washington	2006	Baltimore City	Undetermined	Homicide
Terrill Heath	2007	Baltimore City	Undetermined	Accident
Carlos Branch	2007	Baltimore City	Undetermined	Homicide
Thomas Campbell	2007	Baltimore City	Undetermined	Homicide
Dwight Madison	2009	Baltimore City	Homicide	Homicide
Bernard Bob	2009	Baltimore City	Undetermined	Accident
Deborah Gray	2010	Baltimore City	Natural	Accident
Eric Dorsey	2011	Baltimore City	Natural	Homicide
Don Thomas	2011	Baltimore City	Undetermined	Homicide
Jontae Daughtry	2011	Baltimore City	Undetermined	Homicide

[24] "County" is the jurisdiction that OCME listed on the cover page of the decedent's autopsy report, which may differ from the county in which the decedent died.
[25] "MOD" refers to manner of death determination. "Audit MOD" is the consensus manner of death opinion of the three case reviewers assigned to that case.

Name	Year of Death	County	OCME MOD	Audit MOD
Anthony Anderson	2012	Baltimore City	Homicide	Homicide
Tyrone West	2013	Baltimore City	Undetermined	Homicide
Ricky Artis	2014	Baltimore City	Undetermined	Homicide
George King	2014	Baltimore City	Natural	Homicide
Antonio Moreno	2014	Baltimore City	Undetermined	Homicide
Uli Yahu	2004	Baltimore County	Undetermined	Undetermined
Thomas Rawls	2006	Baltimore County	Undetermined	Homicide
Ryan Meyers	2007	Baltimore County	Undetermined	Homicide
Carl Johnson	2010	Baltimore County	Undetermined	Homicide
Mary Croker	2010	Baltimore County	Undetermined	Homicide
Christopher Brown	2012	Baltimore County	Homicide	Homicide
Arvel Williams	2014	Baltimore County	Accident	Accident
Tawon Boyd	2016	Baltimore County	Accident	Homicide
Dominic Edwards	2018	Carroll	Undetermined	Homicide
Joel Odom	2012	Cecil	Homicide	Homicide
Jarrel Gray	2007	Frederick	Undetermined	Homicide
Anthony Casarella	2007	Frederick	Undetermined	Homicide
Robert Saylor	2013	Frederick	Homicide	Homicide
Terrance Watts	2018	Frederick	Accident	Homicide
David Matarazzo	2007	Harford	Undetermined	[No Consensus] (2 of 3 case reviewers opined Homicide)
Joseph Breckenridge	2011	Harford	Homicide	Homicide
Eric Wolle	2004	Montgomery	Homicide	Homicide
George Barnes	2007	Montgomery	Undetermined	Homicide
Folahan Oladeinde	2010	Montgomery	Undetermined	Accident
Simon Simon	2010	Montgomery	Undetermined	Undetermined
Kevin Cossette	2011	Montgomery	Natural	Natural
Kareem Ali	2010	Montgomery	Undetermined	Homicide
Delric East	2011	Montgomery	Accident	Homicide

Name	Year of Death	County	OCME MOD	Audit MOD
Nathan Jones	2012	Montgomery	Homicide	Homicide
Larry Coates	2012	Montgomery	Homicide	Homicide
Anthony Howard	2013	Montgomery	Undetermined	Homicide
Dajuan Graham	2015	Montgomery	Undetermined	Undetermined
Thomas George	2016	Montgomery	Homicide	Homicide
Raymond Lee	2018	Montgomery	Homicide	Homicide
Ricardo Manning	2019	Montgomery	Undetermined	Homicide
Cedric Gilmore	2004	Prince George's	Undetermined	Homicide
James Jackson	2003	Prince George's	Undetermined	Homicide
Raphael Jackson	2004	Prince George's	Undetermined	Undetermined
Suba Washington	2005	Prince George's	Undetermined	Undetermined
Curtis Sessoms	2006	Prince George's	Undetermined	Undetermined
Marcus Skinner	2007	Prince George's	Undetermined	[No Consensus] (2 of 3 case reviewers opined Homicide)
Alexis Caston	2007	Prince George's	Undetermined	Homicide
Ricky Walston	2011	Prince George's	Natural	Undetermined
Brian Allen	2013	Prince George's	Homicide	Homicide
Deontre Dorsey	2015	Prince George's	Undetermined	Homicide
Jimmy Nero	2015	Prince George's	Undetermined	Undetermined
Surrano Coward	2015	Prince George's	Undetermined	[No Consensus]
Jasmine Young	2017	Prince George's	Undetermined	[No Consensus]
Kevin Jessie	2019	Prince George's	Undetermined	Undetermined
James Trott	2003	Talbot	Undetermined	[No Consensus]
Nevin Potter	2006	Talbot	Undetermined	Undetermined
Raymond Bartles	2008	Talbot	Natural	[No Consensus]
Anton Black	2018	Talbot	Accident	Homicide
Everette Greene	2017	Talbot	Accident	Accident
Theodore Rosenberry	2006	Washington	Undetermined	Homicide

Name	Year of Death	County	OCME MOD	Audit MOD
James Adell	2013	Washington	Undetermined	[No Consensus] (2 of 3 case reviewers opined Homicide)
Darrell Brown	2015	Washington	Undetermined	Homicide
Ronald Byler	2005	Wicomico	Undetermined	Homicide
Troy Planter	2007	Wicomico	Undetermined	[No Consensus]
Yekuna McDonald	2012	Wicomico	Undetermined	Homicide
Jerry Rosenberger	2017	Wicomico	Undetermined	[No Consensus]
Jerry Weston	2016	Worcester	Accident	Accident
Byron Tunnell	2017	Worcester	Accident	Accident

Appendix C: Recruitment Survey

What is your name? [ ]

What is your e-mail address? [ ]

What is your gender?

○ Male ○ Female ○ Other / Non-Binary

What is your age?

▼----------
20 30 40 50 60 70 80 90

What is your current employment status?

○ Employed ○ Independent Practitioner ○ Retired

What is your current job title? (If not currently employed, please leave blank.)

[ ]

In which type of medicolegal death investigation system do you currently practice? (If not currently employed, please leave blank.)

○ US-type medical examiner system ○ Coroner's system

For how many total years have you practiced as a forensic pathologist and/or medical examiner?

▼----------
0 10 20 30 40 50 60 70

Below, please indicate how many years you have held each position. (If you have never held the position, please type '0'.)

☐ Medical examiner
☐ Forensic pathologist
☐ Chief medical examiner
☐ Deputy chief medical examiner
☐ State medical examiner
☐ Chief forensic pathologist

In which of these jurisdictions do you **currently** practice?

○ US ○ UK ○ Canada ○ South Africa ○ Australia ○ New Zealand

In which of these jurisdictions have you **ever** practiced? (Select all that apply.)

○ US ○ UK ○ Canada ○ South Africa ○ Australia ○ New Zealand

Which form(s) of postgraduate training have you completed? (Select all that apply.)

○ Residency in anatomical pathology (or equivalent)
○ Residency in histopathology
○ Fellowship in forensic pathology (or equivalent)
○ Fellowship in cardiac pathology
○ Fellowship in neuropathology

Do you hold postgraduate or board certification in any of these areas? If not, select "NONE." If so, please select your certifying body.

	NONE	ABPath	RCPSC	RCPath	SoA	RCPA	CPATH
Anatomical Pathology	○	○	○	○	○	○	○
Histopathology	○	○	○	○	○	○	○
Forensic Pathology	○	○	○	○	○	○	○

Below, please upload a copy of your CV or résumé in Word or PDF format.

Choose File

Next, please answer the following questions about your prior relationship (if any) with the Maryland Office of the Chief Medical Examiner (OCME).

Have you ever had any professional relationship with the Maryland OCME? ○ Yes ○ No

Did you complete any fellowship training at the Maryland OCME? ○ Yes ○ No

Have you ever worked as a medical examiner at the Maryland OCME? ○ Yes ○ No

Were you a signatory on Dr. Roger Mitchell's letter to the Maryland Attorney General regarding Dr. David Fowler's testimony in *State v. Derek Chauvin*? ○ Yes ○ No

Is there any other aspect of your background that may be perceived to create a conflict of interest? If so, please explain.

Have you ever had your medical license withdrawn, restricted, suspended, or declined to renew in any jurisdiction?	○ Yes	○ No
Have you ever been disciplined by a licensing authority/regulator?	○ Yes	○ No
Are there any disciplinary actions pending against you by any licensing authority/regulator?	○ Yes	○ No
Have you ever entered into an agreement with, made a promise or given an undertaking to any licensing authority/regulator in the face of potential disciplinary action by the authority/regulator?	○ Yes	○ No
Have you ever been charged with, and/or found guilty of, any criminal offense in any jurisdiction?	○ Yes	○ No

By signing below, I acknowledge that, throughout my involvement with the audit, I must promptly notify the Maryland Office of the Attorney General if I:

- am charged with any offence,
- become the subject of any conditions of release ('bail conditions'),
- am found guilty of any offence,
- am the subject of a court finding of professional negligence or malpractice, or
- am the subject of a finding of professional misconduct or incompetence by any licensing body.

I also understand that I may be asked to sign a nondisclosure agreement so as to protect the anonymity and confidentiality of all information encountered during this audit, including but not limited to the contents of the case files I am asked to review as well as the identities of fellow auditors.

Appendix D: Initial Case Review Survey

Based on the information you have reviewed thus far, what is your opinion on the cause of death (using the WHO Cause of Death Formulation if possible)?

Based on the information you have reviewed thus far, what is your opinion on the manner of death (using the NAME Guidelines)?

○ Natural ○ Accident ○ Homicide ○ Suicide ○ Undetermined

Please explain the basis for your opinion.

In your view, would the decedent have died if not for the actions of the person(s) who applied restraint?

○ Yes ○ No ○ Unsure

Was the information about the ***circumstances of the death*** generally adequate or inadequate to allow an informed assessment of cause and manner of death?

○ Adequate ○ Inadequate

If you answered 'inadequate', please explain why.

What other information, if any, would have been helpful?

Specifically, with regard to the ***description of restraint*** in this case, did the file contain adequate information about…

	Yes	No
… the nature/method of restraint?	○	○
… the duration of restraint?	○	○
… the decedent's body position while restrained?	○	○

… the decedent's behavior while restrained?	○	○
... when, if at all, the decedent apparently became unresponsive relative to the restraint?	○	○
... the sequence of events before, during, and after restraint?	○	○

What other information about the restraint, if any, would have been helpful?

In your opinion, were there any deficiencies in the post mortem examination of the decedent?

○ Yes
○ No

If so, which area(s) did you believe were deficient? (Check all that apply.)

○ History and background circumstances
○ Scene information
○ Post-mortem imaging
○ External examination
○ Internal examination
○ Routine histology
○ Toxicology
○ Neuropathology
○ Cardiac pathology
○ Molecular pathology
○ Other:

If you checked any area(s) above, please explain why.

What other testing, if any, would have been helpful?

In your view, was the decedent ever restrained in a manner that could have impaired respiratory or circulatory function?

○ Yes ○ No ○ Uncertain

Is there anything else about this case that influenced your opinions that you would like to share?

Appendix E: Final Case Review Survey

Having now seen the autopsy photos, would you like to revise your previous opinion regarding ***cause of death***?

○ Yes ○ No

If so, what is your current opinion on the cause of death?

Having now seen the autopsy photos, would you like to revise your previous opinion regarding ***manner of death***?

○ Yes ○ No

If so, what is your current opinion on the manner of death?

○ Natural ○ Accident ○ Homicide ○ Suicide ○ Undetermined

Below, please explain why your opinion has changed.

In your view, now that you have seen the autopsy photos, would the decedent have died if not for the actions of the person(s) who applied restraint?

○ Yes ○ No ○ Uncertain

Having now seen the autopsy photos, do the photos raise any concern over the accuracy or completeness of the autopsy report?

○ Yes ○ No

If you answered 'yes', please explain.

Is there anything else about this case that you would like to share?

Appendix F: Post-Consensus Survey

In your view, was the OCME's determination of **cause of death** in this case reasonable or not reasonable?

○ Reasonable ○ Not Reasonable

If you selected 'not reasonable', please explain why.

In your view, was the OCME's determination of **manner of death** in this case reasonable or not reasonable?

○ Reasonable ○ Not Reasonable

If you selected 'not reasonable', please explain why.

In your view, do the OCME's findings in this case indicate a need for improvement in their training or procedures? If so, please explain.

Appendix G: Exit Survey

Compared to your typical casework, how would you rate the **overall difficulty** of the cases that you reviewed for this audit?

○	○	○	○	○
Much easier	Somewhat easier	Similar difficulty	Somewhat harder	Much harder

Please explain your answer. In your view, why were these cases generally more/less difficult than your typical cases?

Compared to other agencies, how would you rate the **overall quality** of OCME's work?

○	○	○	○	○
Much lower	Somewhat lower	Similar quality	Somewhat higher	Much higher

Please explain your answer.

Compared to other agencies, how would you rate the quality of OCME's investigations into the **circumstances and scene of death**?

○	○	○	○	○
Much lower	Somewhat lower	Similar quality	Somewhat higher	Much higher

Please explain your answer.

Compared to other agencies, how would you rate the quality of OCME's **autopsy/post-mortem examinations**?

○	○	○	○	○
Much lower	Somewhat lower	Similar quality	Somewhat higher	Much higher

Please explain your answer.

What (if any) do you see as the principal **strengths** of OCME's procedures?

What (if any) do you see as the principal **weaknesses** of OCME's procedures?

Do you have any suggestions on how to improve OCME's procedures? If so, please share them below.

Thinking of the cases that you found most difficult, what additional information (if any) could other government agencies (including law enforcement) have provided to better facilitate cause and manner determination?

Do you have any suggestions for actions that other government agencies (including law enforcement) could take to reduce the risk of preventable restraint-related deaths in custody? If so, please share them below.