ANDREWS INTERNATIONAL

REVIEW OF THE OFFICE OF THE CHIEF MEDICAL EXAMINER

REPORT FOR THE DEPARTMENT OF HEALTH AND SOCIAL SERVICES STATE OF DELAWARE

EXECUTIVE SUMMARY

The problems facing the Office of the Chief Medical Examiner for the State of Delaware (OCMED) will continue to worsen unless immediate changes are made and steps are taken to reorganize and rebuild this agency. The rebuilding process can begin even before the selection of an experienced leader as the new Director of Forensic Science created by the Delaware Legislature. While the employees within the OCMED are extremely talented, competent, and working under difficult conditions, immediate steps are needed to prevent the OCMED from continuing in a culture of indifference and incivility. Major findings illuminated during this review include the lack of or insufficient procedures and policies necessary to perform effectively and efficiently within some units, confusing chain of custody documentation performed differently in each unit, inadequate facility security and evidence transfer procedures to protect employees and the integrity of evidence, the need for a more robust accreditation process with a concurrent enhancement of the existing Quality Assurance program, and the realignment of certain positions to more appropriately supervise functions within the OCMED.

INTRODUCTION

Andrews International (AI) was engaged by the Delaware Department of Health and Social Services (DHSS) to perform a comprehensive evaluation of all security, administrative, and scientific functions of the Office of the Chief Medical Examiner for the State of Delaware (OCMED) located at 200 South Adams Street, Wilmington, Delaware. The goal of this evaluation was to assist the OCMED with achieving and maintaining the highest degree of efficiency and effectiveness by identifying opportunities for improvement. This goal was accomplished by executing on-site reviews of policies and procedures and interviews of various key OCMED

personnel. When necessary, reviewers communicated with OCMED personnel from off-site to clarify questions or to more fully understand a point of interest. OCMED supervisors and staff were accommodating and cooperative during this review. This report describes the findings of AI reviewers and outlines recommendations and suggestions that the reviewers feel would allow OCMED to function at optimal efficacy and efficiency.

While conducting the assessment of OCMED administration and laboratories, AI focused on those areas that were most critical for accomplishing its mission. These areas included:

- Security
- Organizational structure
- Roles and responsibilities
- Administrative policies
- Standard Operating Procedures (SOP)
- Quality assurance structure and processes
- Communication and documentation
- Professional competency
- Available resources including technology and professional affiliations
- Compensation

An overall security assessment was performed focusing on building security, security related to operational procedures and evidence transfer, and security of electronic systems. In addition, each unit of the OCMED (Administration, Pathology/Morgue/Investigations, Evidence Control, Quality Assurance, Controlled Substances, Toxicology, and DNA) was evaluated on the basis of the areas listed above. As a result of this comprehensive review, AI was able to identify several significant areas for improvement and then formulate recommendations to address each of the critical issues.

METHODOLOGY

A team of independent experts was assembled to carry out this comprehensive review of the OCMED. The team has extensive scientific, legal, law enforcement, and medicolegal experience. The AI team carried out the review utilizing investigative protocols to acquire data that would most accurately reflect the status of the operational processes at the OCMED. Interviews were conducted with key staff members. Standard operating procedures (SOP) were reviewed for completeness and efficiency. The SOPs were also compared with actual practice in the laboratories to ensure harmonization of written policies and actual operations.

OCMED FINDINGS AND RECOMMENDATIONS

ADMINISTRATION and PATHOLOGY

Many of the issues uncovered at the OCMED described in this review are due in large part to inadequate supervision and management practices on the part of the Chief Medical Examiner. Although we were unable to interview the Chief Medical Examiner, it was apparent from all interviews conducted that he had limited or no oversight of the Forensic Science Services portion of his office. Newly passed legislation that creates a Division of Forensic Science with leadership provided by a nationally recruited Director is a step in the right direction.

Current issues facing the OCMED are based largely on the fact that authority for management and supervision of Forensic Science Services was ignored or delegated to the Deputy Director who has no forensic science training or leadership experience. Noteworthy is the ongoing toxic environment demonstrated at the executive management level within the OCMED. The senior management team does not function as a team. They do not communicate with each other and there is open animosity between the members. Immediate remediation is necessary and the management team must begin to function as a team and demonstrate civil and professional courtesies to each other. The OCMED functions as multiple "silos" with little communication among the various disciplines. This has contributed to low morale, an almost complete lack of unity of purpose, and a culture of indifference. Efforts must be undertaken to integrate the various office functions.

NAME ACCREDITATION

The National Association of Medical Examiners (NAME) is the "gold standard" in the industry. NAME's inspection program is a peer review system designed to improve office performance through objective evaluation. The OCMED was accredited by NAME in 2009 and although it has past the time for re-inspection, NAME is due to perform an assessment in October 2014. With this report and NAME's inspection report, the OCMED and Department should have a clear understanding of the current state of the OCMED. This will also provide a benchmark against future directions for the OCMED which will now report to the Secretary of the Department of Safety and Homeland Security (DSHS).

One issue of paramount concern to pathologists was the recently passed legislation moving the OCMED from DHSS to DSHS. The pathologists expressed concern that this move would jeopardize NAME accreditation as they would be "under a police umbrella." It will be a function of the newly formed Delaware Forensic Science Commission to determine the appropriate reporting structure for the Chief Medical Examiner and pathologists. It was clear in the meeting held with the Secretary of DSHS, the Secretary of DHSS, and the pathologists that the issues faced by the OCMED today result from a lack of leadership and ownership for the entire division. The pathologists (and it can be inferred the Chief Medical Examiner) "don't care about the Controlled Substances Unit, DNA Unit or Arson." The sentiment expressed by a pathologist demonstrates a dichotomy within the office whereby the Chief Medical Examiner and

pathologists saw their oversight starting and stopping with pathology and toxicology. Leadership of the entire office (to include the forensic science disciplines) was never taken and it is the lack of ownership and leadership that has brought the OCMED to its current state. Another statement by a pathologist reiterated this dichotomy when it was asked of the Secretary of DHSS, "why can't you go to the press and tell them that this criminal investigation is not the Medical Examiner. It is the Controlled Substances Unit."

The problems facing the OCMED will continue to worsen unless immediate changes are made and steps are taken to reorganize and rebuild this agency. The rebuilding process can begin even before the selection of an experienced leader as the new Director of Forensic Science. While the staff members within the OCMED are a tremendous asset to the State of Delaware, immediate steps are needed to prevent the OCMED from continuing in a culture of indifference and incivility.

FINDINGS

1. Under DHSS, the Chief Medical Examiner was designated as the Director of the Forensic Sciences Laboratory. When added to the primary responsibilities of running a busy agency, the laboratory director responsibilities were burdensome and ignored by the Chief Medical Examiner. The resultant lack of leadership for the laboratories has greatly reduced the quality and efficiency of the forensic services provided by the OCMED. In addition, the absence of leadership has lowered employee morale. Even when present, the Chief Medical Examiner paid relatively no attention to the laboratory components and that lack of leadership is reflected in the absence of strategic planning, budget formulation, and employee compensation review. As expressed by a number of OCMED employees, a new direction in leadership for the OCMED is needed and welcomed.
2. There are many non-medical and non-forensic science issues that are handled by OCMED staff and management. A Chief Operating Officer (COO) with significant management experience would be able to oversee and manage all non-medical and non-forensic science functions of the Division. Without infringing on the Director's duties in leading a scientific organization or the Chief Medical Examiner's necessary oversight of specific medicolegal functions and decisions, the COO would have the responsibility for overseeing and managing all operational aspects of the Division. This would include, but not be limited to budgets, procurement, and supervision of administrative staff, facilities, information technology, safety, and security. Nothing we are recommending here should be viewed as infringing upon the Division Director or Chief Medical Examiner regarding the authority the legislature conveyed in the recently enacted legislation. All medicolegal functions of the office will continue to be supervised and controlled by the Chief Medical Examiner.
3. The Quality Control/Quality Assurance (QA/QC) program at the OCMED needs to be reviewed and in some cases overhauled. This finding has also been discussed in other sections of this report. The OCMED should enhance its current quality control and quality assurance program. At a minimum, this program should include accreditation by ASCLD/LAB and ABFT (described elsewhere in this report), the periodic review of

selected cases, and the use of existing software and programs to assist in instrument calibration and other QA/QC functions.

4. The OCMED should enhance existing policies in the following critical areas or create policies to include :
    a. Evidence collection
    b. Facility maintenance
    c. Personnel safety
    d. Mass disasters or mass fatality events
    e. Post mortem examination procedures
    f. Qualification for death scene investigators
    g. Criteria for determining when autopsies are complete, partial or external
5. A review of salaries within OCMED is warranted. During the current audit of OCMED, AI personnel noted that the agency salary ranges are problematic. For example, senior DNA analysts in Delaware with 5-10 years of experience are making a salary commensurate with a new hire in most other states. (A senior DNA analyst with eight years of experience receives a salary of $59,000 in Delaware). Maryland, for example, has a current opening for three senior DNA analysts and the starting salary range is from $59,000-$95,000. This range is no different in less populated states like Oklahoma. Further, there is little incentive to become a supervisor within the laboratories when the pay difference between supervisors and staff is less than $3,500 per year. For these reasons, a survey of salary ranges for comparable positions should be carried out followed by a review of OCMED salary ranges to determine if adjustments need to be made. These data could then be used to argue for adjusted pay for OCMED employees. Difficulty in recruiting and retaining quality employees in these critical positions is likely without remediation. It will be difficult if not impossible to recruit and retain quality employees in critical positions without understanding the competition. Although it was mentioned that a "selective market value" option exists in order to offer more pay to an experienced applicant, it does not appear that this option is currently being used. In the DNA section, a recently selected applicant with a master's degree and 13 years of experience was not offered an enhanced starting salary. Delaware is, or will become, a training ground for other states as the other states recruit qualified personnel trained by Delaware. Consideration should also be given to having new employees execute a service agreement requiring a fixed number of years of service for each year (or portion of each year) of training received.
6. The availability of Flex-Time is seen by OCMED employees as a significant benefit and a welcome offset to less benefits within the agency. Flex-Time is one reason why many, if not most, employees enjoy working at OCMED. Several employees expressed; however, that there is a lack of uniform employee policies regarding leave time, Flex-Time, and "working from home". A complete review is warranted regarding personnel policies in these areas so that all employees are treated equally.
7. Continuing education, particularly for professional scientific personnel**,** is required by the Quality Assurance Standards (national standards) and is recognized by OCMED supervisors as an essential element to maintain accreditation. However, there has been a lack of funding for travel and continuing education for some time within the OCMED. A $300.00 budget for travel while attending a scientific meeting is unacceptable. This amount of money will not begin to cover the cost of most meetings or workshops. A

continuing education program for all professional scientific staff, including in particular pathologists and laboratory employees, should be established. This is essential for the agency and its laboratories to maintain their mission and accreditation. Invaluable information regarding new methodologies, problem solving, and data interpretation can then be brought back to OCMED to improve the scientific work product of the agency.

8. The OCMED needs a new facility. The roof leaks, endangering sample integrity, instrumentation, and OCMED personnel safety. Toxicology personnel expressed their concern about the inability of the air handling system to properly control temperature and humidity. Controlled Substances Unit space within the OCMED is not adequate and serious consideration should be given to reconfiguring the laboratory space. There are also a number of security concerns resulting from an aging building and its location. In addition, the current facility is inadequate for accommodating any sort of growth, particularly if the state toxicology laboratories are consolidated as has been recommended later in this review. Should it be determined that the OCMED requires a new facility, then at the very least, an employee impact review should be accomplished in order to provide meaningful input for the location of the new facility.
9. Unit budgets are non-existent and unit personnel appear to have no knowledge of the budgeting process within the OCMED or Department. Consideration should be given to include unit supervisors in the planning and execution of the overall OCMED budget processes beyond the simple initial request for what is needed during the next fiscal year. Without the unit supervisor involvement, input, and execution, the units will continue to operate in the dark with regards to funding levels. Long-range budget planning was also not found at the unit level and, not a part of the OCMED strategic plan. It is essential that the process include goal-setting for all areas of OCMED including instrument purchase and replacement, future staffing needs, and facility maintenance.
10. There is a lack of communication between OCMED leadership and staff. Regular communication with employees is necessary for any agency to be successful in accomplishing its mission. As an example, AI auditors found that there were no regular agency-wide meetings to keep employees informed of issues and events that affect OCMED. Some unit supervisors do hold occasional staff meetings within their units. Agency meetings could be used to apprise the staff of impending legislation, court decisions, or high-profile cases. These meetings could also be used to recognize accomplishments by OCMED employees (e.g., published articles, presentations, and awards). Within units, regular staff meetings go a long way toward ensuring that important issues are addressed and unit goals are discussed.
11. The OCMED has an outdated mass fatality response plan. There is no indication that staff members are aware of its existence and no staff members have been trained in accordance with the plan. Likewise, there is no indication that staff members are trained in handling mass disasters related to Weapons of Mass Destruction (particularly biological, radiological or chemical events). The OCMED would not have the ability to respond in a coordinated and effective fashion as a result of a mass disaster in Delaware. Mass disaster/fatality planning must become a priority for the OCMED and, in accordance with national best practices, a Mass Fatality Plan must be implemented. The plan should also include consideration of conventional and unconventional weapons of mass destruction, protective clothing and equipment, body handling, and decontamination issues. The plan must be developed in coordination with law

enforcement, health care providers, and other public health and safety agencies. Additionally, preparation of a Continuity of Operations Plan, which the OCMED does not have, should be undertaken immediately.

12. Several problems exist with the current information technology system (FLIMS) at the OCMED. Inconsistent use and user unfriendliness of this system renders the data as unreliable. As a result, data quality and integrity is low and the system's use is inefficient and unstable. There are commercially available information management systems for forensic laboratories. These should be investigated to determine if they are compatible with OCMED operations. Another potential solution would be significant upgrades, which are available, to the current system.
13. The current oversight of morgue technicians and histologist by the Chief Investigator is inappropriate. These employees should be supervised by pathologists.

RECOMMENDATIONS

1. A restructuring of primary leadership at OCMED is warranted and already enacted by the Delaware legislature. Appointing a new Director of Forensic Science would improve public perception, enhance OCMED efficiency with new ideas, and increase employee morale. Establishing new leadership and direction for OCMED through the national recruitment of a new Director with scientific and leadership experience will provide new ideas for moving the agency forward.
2. A Chief Operating Officer (COO) with significant management experience should also be considered to oversee and manage all non-medical and non-forensic science functions of the Division.
3. The OCMED should enhance its current quality control and quality assurance program as described above.
4. The OCMED should enhance existing policies in the following critical areas or create policies to include :
    a. Evidence collection
    b. Facility maintenance
    c. Personnel safety
    d. Mass disasters or mass fatality events
    e. Post mortem examination procedures
    f. Qualification for death scene investigators
    g. Criteria for determining when autopsies are complete, partial or external
5. An overall laboratory personnel pay structure review is warranted. A survey of regional and national salaries for comparable positions would provide critical data for adjusting salaries in line with other offices in both government and private industry.
6. A review of the Flex-Time policies is needed so that all employees understand the policies regarding leave time, Flex-Time, and "working from home," if allowed. Flex-Time is a significant benefit appreciated by OCMED employees. This simple review and subsequent communication is recommended so that all OCMED employees understand the system.
7. Establish a continuing education program for all scientific personnel. Within the agency, the continuing education elements could include something as simple as weekly journal

club lunches or webinars from vendors to keep abreast of the latest technical advances. However, funding should be made available for attending regional or national scientific meetings and/or workshops to learn new methodologies and interact with colleagues in the field.

8. Planning should begin for a new OCMED facility. Safety, instrumentation, and evidence integrity warrant this recommendation. It is recommended that a new facility be built and in the meantime, a reconfiguration of the existing facility be accomplished to better utilize the administrative and laboratory space. Space requirements should be reviewed and input from employees obtained so that the impact of structural changes on laboratory function might be determined.
9. Establish unit budgets and include unit supervisors in the OCMED budget process. The supervisors should be more intimately involved beyond a single submission of a yearly budget request.
10. Establish regular agency-wide meetings (e.g., quarterly or semi-annually) to keep OCMED supervisors and staff informed of various issues affecting the agency. Staff meetings within the units do occur occasionally, but should be more consistent.
11. A Mass Disaster Response Plan must be developed in coordination with law enforcement, health care providers and other public health and safety agencies. In addition, drafting of a Continuity of Operations Plan, which the OCME does not have, should be undertaken immediately.
12. It is recommended that a thorough review of FLIMS be implemented and changes made to enhance or overhaul this system. It may be that a completely new information system is necessary.
13. Realign the morgue technician and histologist positions so that they are supervised by pathologists and not by the Chief Investigator.

CONTROLLED SUBSTANCES UNIT

The Controlled Substances (CS) Unit has not performed its mission well primarily due to a lack of leadership in the unit. With new unit leadership already in place, the unit and its experienced analytical chemists will begin to function more effectively and efficiently. The following items should be considered as areas for improvement:

FINDINGS

1. The CS Unit personnel qualifications are good and well documented. The unit's new supervisor has a monumental task to create standard operating procedures, policies and training manuals that have been lacking for a number of years.
2. Staffing is currently adequate, but the current salaries offered to incoming employees and experienced employees within the unit are not competitive with most of the United States (see "Administration and Organization" section).
3. Enhancements are needed in the security and chain of custody of evidence within the CS Unit. Doors are propped open and evidence is left unattended based upon the

overall facility layout and instrumentation needed to analyze evidence located in separate rooms. The use of lockers to receive evidence instead of the analyst promotes the lack of real-time transfers and is questioned as a suitable means to account for chain of custody.

4. Chain of custody documentation is not well organized and notations of transfers can go days without being recorded. There is a lack of uniformity within the OCMED regarding policies and procedures in some of the most basic functions such as chain of custody. Units are documenting the chain of custody in different ways and by different means which leads to confusion. This is one of the most serious deficiencies noted in the overall review of the OCMED.
5. Evidence is currently transferred to the CS Unit via evidence lockers. Recording transfers to maintain chain of custody can sometimes be delayed for hours or even days. Any delay is unacceptable.
6. New employee training is not well documented or well organized. A training manual should be developed that gives the new employee a well-structured training regimen.
7. New method development and training in new methodologies are lacking. A new method should include training that goes beyond simply reading an email about the new procedure (e.g., bath salts).
8. The placement of the Forensic Evidence Specialists (FES) within the CS Unit is troubling. They provide a service to the entire laboratory, but are administratively housed within the CS unit. According to several employees interviewed, the placement of the FES positions within the CS Unit was simply to create a new management position for the unit, not because the FES positions are properly placed. These positions should be extracted from the CS Unit along with the management position to create a new structure to service the entire laboratory in the important component of evidence handling and security.
9. Lack of leadership within the CS Unit diminished the Unit's quality program (see section entitled Quality Assurance for examples). This detrimental affect can be seen in the administration of proficiency tests. It was determined through this review that proficiency tests within the CS Unit are all the same and are worked at the same time by all employees. Instead of being an independent test for each employee, the employees have collaborated to ensure they obtain the same correct result. Immediate changes are needed to the proficiency testing program within the CS Unit.
10. The use of two part-time, seasonal employees is not an efficient use of time and training. Converting part-time to full-time employee status is highly recommended.

RECOMMENDATIONS

1. Create standard operating procedures, policies, and training manuals that have been lacking for a number of years.
    a. A training manual for new employees should be developed that includes a well-structured training regimen.
    b. Procedures for method validation and training for new analytical methods is needed.
2. Perform a security and evidence handling audit to strengthen and enhance these important issues. This is a serious flaw in the OCMED system.

a. Cease serious errors such as doors propped open and unattended.
b. Develop uniform chain-of-custody and evidence handling procedures for the unit and for OCMED in general.
c. Remove the current evidence lockers and transfer evidence hand-to-hand.
d. Each chemist should have their own lock box that is only accessible by the chemist and lab manager.
e. Provide heat sealers for the lab for sealing plastic evidence bags.

3. The FES positions should be extracted from the CS Unit along with the management position to create a new organizational structure to oversee evidence intake, handling, and security for the entire laboratory.
4. Establish a robust proficiency testing program such that the employees are tested differently and at different times so that there is not the appearance of collaboration.
5. It is recommended that the part-time positions be converted to full-time positions in order to eliminate the need to constantly train seasonal employees.

QUALITY ASSURANCE

An analysis of the Quality Assurance documentation supporting the Forensic Quality Services (FQS) Assessment (accreditation for forensic services) was undertaken during this review. Issues are documented below based upon the FQS Standards notation.

4.3.2.1 All documents issued to personnel in the laboratory as part of the management system shall be reviewed and approved for use by authorized personnel prior to issue.
(b) Documents are periodically reviewed and revised when necessary

All units within the laboratory were in compliance by the due date with the exception of the Controlled Substances Unit.

4.10 The laboratory shall continually improve effectiveness of its management system through quality policy, quality objectives, audit results, corrective actions and management review.

Several corrective actions remained open well past the deadline. These corrective actions were for the Controlled Substances Unit and have been unresolved for months even when brought to the attention of the Chief Medical Examiner and Deputy Director of the Laboratory.

4.11.4 Monitoring of corrective actions

Several corrective actions (e.g. CAR QA 2013-001) remained open well past the deadline. These corrective actions were for the Controlled Substances Unit and have been unresolved for months even when brought to the attention of the Chief Medical Examiner and Deputy Director of the Laboratory. In a memo dated April 2, 2013, the audit findings for the

external audit (2012) and the internal audit (2013) demonstrated that the non-compliance of the Controlled Substances Unit was still unresolved. Because of this, the Quality Assurance manager forwarded all pending items to the Laboratory Director without resolution.

4.11.5 Additional audits

Internal audits of the Controlled Substances Unit have captured the non-compliance within the laboratory. Additional audits are meaningless if the non-compliance is not addressed by the leadership within the Medical Examiner's Office.

5.2.2 The management of the Laboratory shall formulate the goals with respect to the education, training, . . . Training actions are to be evaluated as to performance.

Performance reviews were not completed for the Controlled Substances Unit.

5.4 Test and calibration methods and method validation.

Controlled Substances Unit was not in compliance.

5.6.3.2 Reference materials maintained and properly controlled.

Controlled Substances Unit was not in compliance during the last external audit and during the past internal audit.

5.9 Quality of tests and monitoring testimonies

The Controlled Substances Unit was non-compliant.

FINDINGS AND RECOMMENDATIONS

Multiple deficiencies and non-compliance were highlighted in the review of the Quality Assurance program mostly directed at the Controlled Substances Unit. However, these deficiencies and non-compliance were brought to the attention of the Chief Medical Examiner (Laboratory Director) without resolution. The Chief Medical Examiner was not engaged in the operation of the laboratory and the day to day leadership was delegated to the Deputy Director, again with no resolution. Leadership is to blame for these failures at the unit level and the Chief Medical Examiner.

The Quality Assurance (QA) manager has done an adequate job in obtaining and maintaining accreditation for the Medical Examiner's Office and the Forensic Science Laboratory. However, more should be done in terms of accreditation. The office should seek accreditation through the American Society of Crime Laboratory Directors Laboratory Accreditation Board (ASCLD/LAB) and the American Board of Forensic Toxicology (ABFT). Many employees with previous experience from other agencies expressed the inadequate review by FQS as compared to other accrediting bodies. The current minimal effort to maintain FQS accreditation lacks

robustness and should begin to be proactive. In order to be proactive, it will require the utilization of experts within each unit to accomplish this enhancement. The QA manager should also have the time-keeping duties within the office removed from her assigned duties and focus on the job of the QA manager. Enhancements are also needed in the laboratory with regards to fire or disaster drills, mass fatality drills, and safety training.

It is also noted that the QA Manager is not included in management meetings with the Chief Medical Examiner, Deputy Director, or Unit leaders. In order to embrace a quality program throughout the laboratory, the QA Manager should be counted as an integral part of the management team. The QA manager must be included early in discussions regarding quality issues within the laboratory. Additionally, a QA Manager can gain much by attending national meetings that focus on forensic science and quality. It is highly recommended that the QA Manager consider attendance and participation at a national meeting such as the American Academy of Forensic Science. Membership in a Quality organization that only requires dues does not promote self-improvement and does nothing to further the quality program in the OCME.

EVIDENCE CONTROL UNIT

The Evidence Control Unit has not performed its mission well primarily due to a lack of leadership and a lack of uniform policies that should be in place to protect and preserve the integrity of evidence it receives. The following items should be considered as areas for improvement:

FINDINGS

1. The Evidence Control Unit (currently placed within the Controlled Substances Unit) personnel qualifications and training are inadequate and not well documented. This unit is in serious need of a comprehensive review and updating of the Unit Operations Manual, policies, procedures, and training manuals that have been lacking for a number of years. As a part of this report, a review of the current Unit Operations Manual was conducted and several changes were recommended (see below, “Unit Operations Manual Review”). The lack of a criminal background investigation of Unit personnel to include drug screening is a serious flaw throughout the OCMED.
2. As was also mentioned in the Controlled Substances Unit review section, the placement of the Forensic Evidence Specialists (FES) within the CS Unit is troubling. They provide a service to the entire laboratory, but are administratively housed within the CS unit. According to several employees interviewed, the placement of the FES positions within the CS Unit was simply to create a new management position for the unit, not because the FES positions are properly placed. These positions should be extracted from the CS Unit along with the management position to create a new structure to service the entire laboratory in the important component of evidence intake, handling, and security.

3. Enhancements are needed in the security and chain of custody of evidence throughout the OCMED and it begins with the Evidence Control Unit. There is not a consistent way in which evidence is transferred and recorded to maintain chain of custody. Evidence transfers can occur and not noted for several hours or even days. For the most part, there is no real-time chain of custody documentation from the FES to the analytical units with the only exception being the DNA Unit. There is a lack of uniformity within the OCMED regarding policies and procedures in some of the most basic functions like chain of custody. Units are documenting the chain of custody in different ways and by different means which leads to a serious flaw for evidence chain of custody. As mentioned in the Controlled Substances Unit review, this is one of the most serious deficiencies noted in the overall review of the OCMED. The use of lockers to receive evidence instead of the analyst promotes the lack of real-time transfers and is questioned as a suitable means to account for chain of custody.
4. New employee training is not well documented or well organized. A training manual should be developed that gives the new employee a well-structured training regimen.
5. New evidence tracking capabilities are needed and a consistent policy throughout the OCMED is warranted. This should include whether or not evidence is opened by any FES employee and the use of barcoding, plastic containers, and heat-sealed devices.
6. Security issues noted in the OCMED security review are in the process of being addressed through significant improvements of door access, cameras, and other measures.

RECOMMENDATIONS

1. Initiate a comprehensive review and updating of the Unit Operations Manual, policies, procedures, and training manuals. A review of the current Unit Operations Manual was conducted by AI and several changes were recommended (see below, "Unit Operations Manual Review").
2. The FES positions should be extracted from the CS Unit along with the management position to create a new organizational structure to oversee evidence handling and security for the entire laboratory.
3. Develop a consistent, uniform way in which evidence is transferred and documented throughout OCMED. It is necessary to maintain a real-time chain of custody with no delays in log-in times in order to prevent confusion for employees, auditors, and criminal justice officials.
4. A training manual should be developed that gives new employees a well-structured training regimen.
5. A new evidence tracking system with consistent policies should be implemented. Policies should include the use of barcoding, plastic containers, and heat-sealed devices.
6. Security issues for the unit and for OCMED have been described elsewhere and are being addressed at the time this report was being written.

EVIDENCE UNIT OPERATIONS MANUAL REVIEW

A review was conducted of the above-titled manual (hereafter referred to as the "manual") and a comparison was made with current best practices in the area of evidence control, storage, and access. As is so often the case, most agencies with a component of evidence control tend to consider this entity as a low priority when it comes to resources and staffing. This was highlighted in an article by Latta and Kiley (2007) entitled "Property and Evidence Control – the Hidden (and Ticking) Time Bomb." As they point out, the proper storage and safekeeping of physical evidence is crucial in criminal prosecutions and attention must be paid to the policies, procedures, staffing, and oversight of these units.

The current manual states (p. 2) that "Personnel assigned to the property room must possess a valid Delaware Driver license and have a good work record." The duties and responsibilities of the Evidence Control Unit personnel are too important to limit the requirements of the position to this inadequate list. Instead, as mentioned in the Latta and Kiley (2007) article and found in most agency's policies regarding evidence control, the individual responsible for the property room and evidence control should undergo a "thorough and complete background investigation, drug testing, financial checks, and (in some cases) a polygraph examination." The breadth of the background investigation should be equivalent to that of any position of trust within the agency and is lacking in the OCMED.

It is also noted (p. 2) that the position of the Forensic Evidence Specialist (FES) is to work with minimal supervision. On the contrary, the importance of this position requires enhanced supervision and oversight which will be discussed below. The manual states that the FES must have a "good working knowledge of Delaware rules of evidence, Penal Code, Government Code, Civil Code, Health and Safety Code, Administrative Code, and other related codes as they apply to the evidence/property function." The manual is silent as to how this is accomplished and does not prescribe how this is to be completed. The only mention (p.3) of training "recommended" for the FES is the completion of one International Association for Property and Evidence (IAPE) approved basic course. It is our opinion that this is only the beginning of adequate training for the FES. Best practices would dictate training should include policies of the agency, operations, and procedures within the agency, safe handling of firearms and biohazards, chain of custody, and hazardous materials. One basic IAPE course cannot satisfy all of these areas and the other previously listed Delaware-specific codes. It should also be noted that supervisors and management of the Evidence Control Unit should also undergo the same training. As Latta and Kiley (2007) stated "(n)one of their previous training has prepared them to oversee the intake, processing, security, accountability, and proper disposition of evidence."

The manual states (p. 3) that the FES will "supervise, train, and evaluate other unit personnel assigned to the Property Room" and "provide in-service training to in-house personnel regarding appropriate logging, packaging, documenting and storage of property and evidence" (p. 4). Too often, individuals are placed in positions of authority, training, and supervision without their own prerequisite training in these important functions. The manual should prescribe the level and types of training required to assume these duties. The manual further states (p. 4) that the FES should "stay abreast of local, state, and federal law involving property and evidence handling." Again, the manual is silent as to how the FES is expected to complete

these duties or even how they are documented if completed. Continuing education training dollars are usually the first to be cut in an agency pressed for resources.

The manual requires (p. 22) the FES to "maintain an adequate amount of supplies" consisting of packaging material for the proper collection and preservation of evidence. It does not give adequate attention to personal protective equipment as found in similar manuals from other agencies. For example, the FBI's Evidence Policy Guide (2009) requires "Appropriate personal protective supplies (e.g. first aid and safety equipment) must be stored in the (unit) for easy accessibility. This includes, but is not limited to: disposable gloves and gowns, disposable plastic aprons, eye and mouth protection, pails with disinfectant, biohazard bags for the disposal of biohazardous material, containers to hold needles, sink with hot and cold running water, flammable cabinets, acid cabinets, poison cabinets, and biohazard labels and containers. The (unit) must also be equipped with a fire extinguisher." A safety shower and eye wash station are also essential.

The manual lists special handling for narcotics (p. 23) and DNA (p. 24) by stating "employees are encouraged to wear protective gloves or use forceps" with these types of evidence. The manual should be more emphatic requiring the use of disposable gloves or the use of disposable forceps. Also on page 24 and elsewhere, is the requirement for prior approval for any DNA submission. The manual provides for a "verbal" authorization to submit DNA which leaves open the possibility of miscommunication between the submitting agency and the laboratory.

The proper submission of evidence is paramount to the work subsequently done by the laboratory analysts. The manual correctly provides for the "right of refusal" for any evidence that is not properly packaged and in a safe condition (p. 28). The wording in the first paragraph (#1) under heading ""C. Improperly Submitted Evidence – "Right of Refusal"" should be changed. The sentence is not properly worded and the use of "other OCMED policies" without specification is of little value to understanding safety and security of evidence. It would be more beneficial to provide a list of other OCMED policies that deal with this topic. In addition, on the same page under item 3 is mentioned the "safety protocol" without explanation.

In the pages of the manual following this section are items associated with evidence storage. It is clear that the manual is attempting to highlight those items requiring special handling conditions and storage such as DNA, controlled substances, and arson cases. The manual does not, but should, also include special handling for valuable evidence and volatile memory devices (if they are a part of a submission). It is common practice in most agencies that drug and valuable evidence requires unique handling that often mandate the use of a vault witness. This provision requires the use of two individuals in the removal or storage of this type of evidence. Similarly, the increased occurrence of digital evidence in criminal events necessitates further care to prevent the loss or change in evidence associated with mishandling these devices. The manual is silent on this issue and it may be that the OCMED receives no such evidence. On the other hand, the need to obtain DNA or other trace evidence from digital devices is increasing with their universal use.

Regarding homicide cases, the manual (p. 30) unintentionally places a requirement on the FES to store "all items of evidence associated with a homicide case together." The potential exists that evidence associated with a homicide may come from suspects, victims, and multiple crime scenes. It should be the intent of the FES to keep those items packaged and stored separately (i.e. different boxes and packages). It is unusual that the manual specifically requires this added precaution for homicides as compared to any other type of assault such as rape. It may be necessary to either change the wording or practice associated with the explanation of Medico-Legal Evidence found on page 30. The wording seems to indicate that a large portion of the OCMED personnel can access any combination lock which frustrates the use of the locks in the first place.

Tracking changes made to any policy, procedure, or case data is typically required of an accrediting body. Computer entries into the "Computerized Data Entry System" is found on pages 31 and 32 and provides for changes to entry only by evidence room personnel, laboratory managers and chemists. If not already contained in the software of the system, the need for tracking changes and tracking the person making the changes is necessary. Similarly, tracking key and alarm codes also require special attention and documentation. The sections on key control (p. 33) and alarms (p. 33-34) give no indication of a key control inventory or where it is maintained. The section devoted to alarms provides no explanation for a response plan which should be a component of this manual.

Audits and inventories are an important component of evidence operation oversight. Unlike the OCMED where it is stated in the manual (p. 40) that the Deputy Director will conduct the audit of controlled substances, most agencies will rely on two other forms of review. The first would be from an outside assessment (such as those conducted by the accrediting body) and the second would be performed by those individuals within the agency that do not have direct oversight, but instead, are trained in audit functions as an IAPE or other type of accrediting assessor. This function would more properly fall under the responsibility of the Quality Assurance Manager and an ad hoc team (in the event the Quality Assurance unit is limited in personnel) of employees trained in assessment and audit functions. It should not be conducted by the direct line supervisor. The manual continues with multiple examples of audits and reviews that are to be conducted by the Deputy Director on a scheduled and unscheduled/unannounced basis. Many of these were not performed.

Although it will be addressed in the security review in more detail, it is noted that the FES is responsible for securing the vault door (p. 44) although it appears that multiple individuals may be in the vault at the same time with no electronic tracking of who comes and goes. The section continues on page 45 with wording that lacks professionalism or a sense of security and protection of evidence. The wording indicates that the FES must "jiggle" the evidence storage door handle to ensure it properly closes. This is necessitated due to the doors having a tendency to "stick." Wording such as this in a policy and procedures manual leaves open the possibility of evidence found inadmissible in court due to a lack of security and protection. Additionally, the requirement of an escort for "any time an officer leaves with drug evidence" seems to indicate a lack of security in the building for any other person or scenario.

Throughout the remainder of the manual, there are multiple locations containing the same information. For example, on page 46, it dictates the information recorded by the FES on the FES-100 form. Once this is written, it does not need to occur again and again. Instead, simply refer to the first occurrence when subsequent forms are mentioned (as in pages 52, 61, 64, and 66).

The manual provides specific information about the transport of evidence in certain containers such as a Pelican case for DNA evidence (p. 75). The manual provides no direction for the FES regarding how or when the case or any other form of transport item is to be cleaned, disinfected, or rendered safe from biological hazards.

Processing items of evidence in a timely manner is an important function of any laboratory analyzing evidence in criminal investigations. Unintended, no doubt, is the wording found on page 79 indicating that due to storage limitations, the "sooner the large cases (those with multiple items of evidence or large pieces of evidence) are tested" the sooner the cases can be returned to the submitting agency. This manual should not dictate the priority of casework simply by the size of the case or number of items within the case.

Other items not found within the manual but should be included are topics that cover:

1. Off-site storage of evidence
2. HAZMAT transport training
3. Valuable evidence
4. Derivative evidence
5. Volatile memory devices
6. Response plan for security alarm
7. Drug vault witness
8. Deviation requests

References cited:

- Latta, J.T. and W.P. Kiley. 2007. Property and Evidence Control – the Hidden (and Ticking) Time Bomb. CALEA 94: 1-6.
- FBI Evidence Management and Operations Policy Implementation Guide. 2009. FBI Laboratory, Quantico, VA.

FORENSIC TOXICOLOGY UNIT

The Forensic Toxicology Unit for the OCMED handles both postmortem cases from autopsies performed by the OCMED pathology staff, Driving Under the Influence (DUI) cases submitted by the Delaware State Police Crime Laboratory (DSPCL) and fatal cases submitted by police agencies. Postmortem toxicology is performed for all cases where a natural cause-of-death (COD) could not be determined and in cases where the circumstances suggest the involvement

of drugs or alcohol. Toxicology may also be ordered at the discretion of the pathologist handling a particular case should the investigation warrant it.

A review of caseload statistics provided by the Chief Toxicologist indicates that the Toxicology Unit has been experiencing a fairly consistent caseload, averaging 1494 case submissions and 5470 tests performed from 2008 to 2013. Like most postmortem laboratories around the United States, a static number of cases does not account for an increase in case complexity. More and more cases are found to have multiple drugs plus alcohol which puts more strain on laboratory personnel and resources. OCMED and state statutes have tried to offset this pressure by cancelling some types of testing. For example, when a person is found to be driving with a blood alcohol above the legal limit or is positive for THC, Cocaine, or PCP; further testing is stopped as there would be no change in penalties for the driver.

The Toxicology Unit was evaluated in part using the American Board of Forensic Toxicology (ABFT) criteria for forensic toxicology laboratory accreditation. While formal accreditation was not the focus of the current audit, this checklist provided a useful yardstick for measuring the effectiveness and efficiency of the OCMED Toxicology Unit. In addition, interviews of laboratory management and staff were conducted to better understand laboratory operations, identify deficiencies, and explore possible solutions.

Overall, the OCMED Toxicology Unit is performing well and meeting the goals of OCMED. Their customers, the people of the state of Delaware, are receiving very good forensic toxicology services from this team. The management and staff care deeply about the quality and timeliness of their work product. As with any forensic toxicology laboratory around the world, there are areas in which laboratory operations could be improved. The following list of findings and recommendations are not meant to be a condemnation of the laboratory. Rather, they should be interpreted as a list of ways to improve.

FINDINGS

1. The dual laboratory system for toxicology testing between DSPCL and OCMED is both inefficient and detrimental to the overall mission of each agency. For example, samples must be transported between labs complicating specimen chain-of-custody and exposing the system to potential errors.
2. The Toxicology Unit is currently not accredited by a laboratory science-based accrediting body such as ABFT. The Toxicology Laboratory is an ISO 17025:2005 accredited laboratory through Forensic Quality Services (FQS). The OCMED is accredited by the National Association of Medical Examiners (NAME). However, these accreditations (FQS and NAME) are not comprehensive laboratory science-based evaluations and not specifically designed for forensic toxicology.
3. Continuing education is a key component of any successful toxicology laboratory. The value of attending scientific meetings and workshops cannot be overestimated. The travel budget for OCMED is abysmal at $300.00 per year for the entire Division. OCMED personnel often have to plead their case to obtain travel monies and have spent their own money to attend conferences. At a minimum, the Chief Toxicologist should be attending at least one scientific meeting per year (e.g., the American Academy of

Forensic Sciences or Society of Forensic Toxicologists). Additional personnel should attend training opportunities as more funds are available.

4. The Toxicology Unit currently employs two seasonal, part-time technicians. These part-time positions are not an efficient use of time and training. Consolidating these positions into a single full-time position would encourage retention of a good employee and eliminate the continuous training of seasonal, part-time employees. This full-time position does not need to require a science degree but does need a person with attention to detail.
5. Safety was of paramount concern during this review of the OCMED building and operations. Analytical compressed gases, those currently in-use and those being stored, are housed in a shed behind the OCMED building. During an inspection of the tank shed, it was noted that the compressed gas cylinders (helium, compressed air, etc.) were not strapped down. These cylinders can quickly turn into missiles should their stems be broken off after a fall. In addition, the cylinders are very heavy and, if they fall, could cause serious injury to OCMED personnel. The shed has plumbing in place to deliver gases into the laboratories without having the cylinders inside the building. The line that delivers helium leaks badly. As a result, the helium cylinders have to be transported by OCMED personnel to the laboratory. Fixing this gas line will prevent possible injury during transport and allow the tanks to remain in the shed during use, as the original design dictated. Further, should the Toxicology Unit be forced to switch to hydrogen due to the worldwide helium shortage, OCMED personnel would be exposed to the danger of explosion from this more volatile gas. The liquid nitrogen dewar storage vessel located on the outside wall of the shed is fenced, but the gate was not locked, nor was there anything to prevent someone from climbing over the fence into the tank area.
6. Another safety issue is the lack of appropriate biohazard training. The current policy is to watch an outdated video one time per year for biohazard training. At a minimum, the biohazard video needs to be updated. Additional training throughout the year would reinforce the need for wearing personal protective equipment and for proper safety practices in the laboratories. Increased accountability for the use of PPE was expressed by laboratory personnel. To complement the video; therefore, laboratory managers should ensure that employees are using PPE in the laboratory and disposing of biohazard materials appropriately. Another suggestion to improve safety training is to engage a safety consultant from the state or elsewhere to provide hands-on training.
7. An area for improvement in the Toxicology Unit and the entire OCMED office has to do with communication. Clear and regular communication between management and employees is absolutely necessary for the OCMED to accomplish its mission. There is a lack of regular interaction between key units and personnel at OCMED. In the Toxicology Unit, AI auditors noted a feeling of disconnect between analytical staff and management. While busy schedules and paperwork are burdensome, it is incumbent upon management to maintain regular contact with laboratory staff to stay in touch personally and to keep abreast of the latest analytical issues. The Toxicology Laboratory does hold staff meetings every three or four weeks that are two or more hours in length. It would be more efficient to reduce the duration of each meeting and shorten the period of time between meetings. In addition to their own staff, managers must communicate with other unit managers for the good of the entire agency. A lack of communication between the Toxicology Unit and other units, particularly Quality

Assurance and Controlled Substances Unit, were noted. A solution to these communication issues may be found in the form of regularly scheduled discussions. Regular management staff meetings are useful for letting everyone in the Division know issues throughout the OCMED and what the needs of each unit are. A weekly or quarterly meeting should be established to inform all employees of agency issues and build an agency-wide team atmosphere.

8. Under the DHSS, the annual budgeting process for the Toxicology Unit takes place largely without ongoing input from the Chief Toxicologist. This practice is not efficient as the people making the decisions for funding do not have a grasp on what resources are necessary for daily laboratory operations. After submitting an estimate of needed funding, the Chief Toxicologist is generally left out of budget discussions. This is a mistake as this person is intimately involved with day-to-day laboratory functions and understands better than anyone what resources should be brought to bear. All unit managers should, in fact, be more intimately involved in the budgetary decision making process.
9. The Quality Assurance/Quality Control (QA/QC) program for the laboratories is supposed to be handled by a single agency employee, the Quality Assurance Manager. This person is responsible all aspects of the program including the issuance of Corrective Action Requests (CARs) and overseeing the proficiency testing programs. During the review of the program by AI inspectors; however, it was noted that this person has been assigned HR duties and spends an inordinate amount of time doing HR functions such as timekeeping. As a result, the QA/QC program has suffered from lack of attention and innovation. Laboratory audits are infrequent, often not performed until just before an inspection. It would be far more beneficial to remove all HR duties from the QA Manager, perhaps shifting these duties to an office assistant. This would allow the QA Manager to more closely monitor those duties that the position was designed to do (e.g., ensuring compliance with CARs). Periodic laboratory audits (monthly, quarterly) should be done throughout the year. These could be done in a variety of ways one of which is to have units evaluate each other. For instance, two Controlled Substance staff members could evaluate the specimen receiving protocols in the Toxicology Laboratory. Another suggestion might be to assign a QA person in each laboratory. These QA "liaisons" would form a QA Committee that meet with the QA Manager on a regular basis to address any quality issues. Each of these suggested solutions would improve communication from unit to unit and facilitate a team building atmosphere.

RECOMMENDATIONS

1. It is recommended that all toxicology laboratory testing be brought under one roof to simplify chain-of-custody issues and insure consistent QA/QC management and analytical results.
2. It is recommended that the Toxicology Laboratory become accredited by ABFT. The laboratory is in good shape for this accreditation process. It will require allocation of funding for this purpose, but it is well worth the time, effort, and expense. It provides a means of monitoring laboratory performance on an annual basis and give enhanced credibility to those that testify in court.

3. The budget for continuing education should be expanded to allow the Chief Toxicologist to attend at least one scientific meeting per year. Funds should also be allocated for additional personnel to attend scientific meetings/training. This could be accomplished on a rotating basis. Travel grants are also available from forensic science professional organizations.
4. It is recommended that the two seasonal, part-time technician positions be merged into one full-time position. A chemistry degree is not necessary for this level of employee.
5. It is recommended that the compressed gas tank shed be properly equipped for securing gas tanks and leaking plumbing is fixed to allow compressed gases to be delivered to the laboratories safely. The gate to the liquid nitrogen area should be locked at all times and measures should be taken to prevent access from above.
6. Update the biohazard video for all laboratory employees. All new employees should watch it before being allowed to work in the laboratory. Add a training exercise to the program to further reinforce the importance of personal protective equipment and safe laboratory practices.
7. Mandatory management training for laboratory supervisors is recommended. This will infuse new ideas for management techniques and improve communication between management and staff. It can also be expected to improve communication between unit managers, which has been an issue.
8. Increase efficiency and communication during scheduled laboratory meetings (the Toxicology Unit has implemented this recommendation). Reduce the time between meetings and shorten the time of each meeting. These meetings may be used for things such as informing the staff of laboratory-wide issues, discussing a recent journal article, or other general interest items.
9. Establish regular management level meetings (can be weekly or quarterly) to facilitate communication between directors and unit managers.
10. The Chief Toxicologist and all unit managers should be more involved in the budgeting process for the agency.
11. It is recommended to remove HR duties from the QA Manager to free up time for more closely monitoring the QA/QC program already in place. This will result in a better QA program that provides greater attention to QA issues such as ensuring compliance with CARs and periodic laboratory audits.
12. Periodic laboratory audits (monthly or quarterly) are recommended to be proactive toward potential problems and to build a team atmosphere among units.

DNA UNIT

The stated goal of the DNA Unit is to provide the people of Delaware with an in-state forensic DNA testing program that produces accurate and reliable results in a timely manner. The program serves to support criminal investigations, identification of deceased individuals, and support of the convicted offender DNA database (CODIS). Over the past six years, the growth in service requests for the DNA Unit has increased by 170% while there has been essentially no growth or minimal growth in personnel, facilities, or budget.

The DNA Unit is performing its mission well, but the following items should be considered as areas for improvement:

FINDINGS

1. The DNA Unit personnel qualifications and training are exceptional and well documented. The unit's supervisor/technical leader is well suited for the task and performing admirably.
2. Staffing is currently 1/3 below allocated staffing levels and the vacant positions should be filled in order to meet the needs of the state. However, the current salaries offered to incoming employees in the DNA Unit are not competitive with most of the United States (see "Administration and Organization" section).
3. The quality assurance/quality control reviews, audits, accreditation, corrective actions, and proficiency testing documentation within the DNA Unit are current and maintained in good order. Enhancements are needed in the area of overall OCMED quality assurance so that the DNA Unit, as well as the entire OCMED Laboratory, becomes more proactive. The current laboratory quality manager is assigned duties and responsibilities that are not aligned with the position. For example, personnel time keeping duties are relegated to the QA Manager instead of being handled by someone more appropriate for these administrative duties.
4. Consideration should be given to converting the current half-time technician position in the DNA Unit to a full-time position in order to address an enhanced, proactive QA program within the unit.
5. The DNA Unit is supervised and provided technical leadership by the same individual. Due to the constant need for new technology, evolving DNA kits, and the concomitant need for validation, consideration should be given to reducing the span of control and creating separate positions for DNA Unit supervisor and DNA Unit technical leader. If there was one issue that was expressed by most unit employees, it was the inability to move to new technologies and update casework policies in a timely fashion due to casework demands. The unit has recently acquired the very latest in genetic analyzers, but it will require a caseworker (senior DNA analyst) reassigned from casework in order to spend considerable time in the validation of the new instruments. With a new technical leader position and the conversion of the part-time technician position to full-time, the impact on casework will be minimized. A recent example involving validation showed that a senior DNA analyst was removed from casework for a period of six months while validating a new DNA kit. This structure will only exacerbate the backlog of DNA cases. These changes (split the current duties of unit supervisor and technical leader and convert the half-time technician position to full-time) may also allow for the discontinuation of an outside DNA contractor (Bode) and move all DNA testing within the OCMED. An additional benefit to this plan will be the creation of more career advancement possibilities within the DNA Unit.
6. DNA Unit space within the OCMED may be adequate today, but it will only take one legislative change to make it untenable. With the prospect on the horizon of new legislation enacted to require DNA samples from all arrestees, a review needs to begin

now to prepare for the possible legislative change. The review should consider personnel, facility, and budget needs so that the potential new mandate would come about through informed legislation rather than being an unfunded mandate. There are currently 28 states that have already enacted legislation for the collection of DNA upon arrest. Although adequate at the present time, the current space is not without issues such as proper temperature control, periodic flooding, and ventilation problems. Should it be determined that the OCMED requires a new facility, then at the very least, an employee impact review should be accomplished in order to provide meaningful input for the location of the new facility.

7. Continuing education for DNA Unit personnel is required by the Quality Assurance Standards (national standards) and is recognized by the unit supervisor as an essential element to maintain accreditation. This same recognition is not always supported by those controlling the office budget and travel requests. The need to maintain a substantial and sustaining continuing education program for all employees within the DNA Unit should be understood within the Department and is essential for the unit to maintain its mission and accreditation.
8. The DNA Unit currently relies on federal grants for a substantial amount (80%) of unit operation finances. As federal grants can come and go without much notice, it would be prudent to prepare budgets that are less reliant on grants for short and long term planning efforts. Grants should still be pursued, but planning should take into account the possibility that they may not always be available.
9. Although salaries are low, unit employees are still motivated to do exceptional work. One motivating factor has been the flexible work schedule (Flex-Time) allowed in order for the employee to meet personal and family needs as they arise. The benefit of flex-time; however, has recently been eroded primarily due to events in the OCMED related to external investigations. A suitable OCMED flex-time policy is needed and would provide a boost to beleaguered employee morale. This policy should be applicable throughout the OCMED and not be a divided policy (i.e., one policy for the pathologists and another for laboratory personnel).
10. Current OCMED policy on media inquiries state: “All OCMED personnel routinely handle media inquiries.” This policy is outdated, untenable, and needs immediate revision to consolidate media inquiries to one or a few highly trained employees within the office.
11. The DNA Unit as well as the other laboratory units within the OCMED has suffered through a relatively long period of absent leadership at the top position. Even when present, the Chief Medical Examiner paid relatively no attention to the laboratory components and that lack of leadership is reflected in the absence of strategic planning, budget formulation, and review of employee compensation. A new direction in leadership for the OCMED and laboratory components was expressed by many employees and will bring with it a boost in morale and attitude. The recently enacted legislation addresses this important issue.

RECOMMENDATIONS

1. Vacant staff positions should be filled as soon as possible.
2. A thorough salary review in DNA, and OCMED as a whole, should be performed to evaluate how the agency matches up with industry/government standards.

3. Remove HR duties and other non-QA associated duties as needed, from the QA Manager to allow this person to focus on the responsibilities for which the QA Manager position was established.
4. Consider converting the current half-time technician position in the DNA Unit to a full-time position to improve efficiency and to address an enhanced, proactive QA program within the unit.
5. It is recommended that separate positions for a DNA Unit supervisor and a DNA Unit technical leader be established to provide better control over quality assurance issues, validation of new methodologies, and DNA caseload.
6. To proactively address impending legislation regarding the DNA testing of all arrestees, a review is recommended that will address personnel, facility, and budget needs so that the potential new mandate would come about through informed legislation rather than being an unfunded mandate.
7. Develop a continuing education program for DNA personnel that is supported by OCMED management. Continuing education is critical for maintaining accreditation, testifying in court, and remaining up-to-date in the field.
8. It is recommended that unit supervisors be involved in the planning and execution of the overall office budget beyond the simple initial request for what is needed during the next fiscal year. They are aware of the nuances of daily operations and need to be in the loop regarding the funding of their laboratories.
9. A single, suitable flex-time policy should be developed for all OCMED employees to offset low salaries and boost morale.
10. Establish a media relations policy to confine media contact to one or, at most, a few highly trained OCMED employees.

SECURITY

ALARM AND INTRUSION DETECTION SYSTEM

FINDINGS

A security assessment was performed on the OCMED building. An assessment of the annex was not performed at this time. The security assessment of the OCMED indicated that certain key areas were deficient. Of particular note was the scarcity or total lack of card access control (security electronic systems), a system that is highly effective in protecting against the breach of secure areas.

There are eleven (11) motion sensors in the building and all doors and hatches are contacted. There are no motion or glass breakage sensors in the hallway windows, which are larger in size than the other windows around the building. There are no panic buttons throughout the facility. There is no radio or cellular backup to the security system which is imperative in the event of a landline service breakdown. The alarm and intrusion system is monitored by Tyco. They only notify OCMED employees when a breach occurs, not the police department.

RECOMMENDATIONS

1. Install radio/cellular backup to the alarm and intrusion detection system.
2. Install glass breakage and/or motion sensor throughout the OCMED.
3. Install glass breakage sensors on all windows that are large enough for entry in the stairwells.
4. Install panic buttons.
5. Upgrade current motion sensors.

CLOSED CIRCUIT TELEVISION SYSTEM (CCTV)

FINDINGS

The system consists of several cameras located in the front lobby, employee's entrance, receiving door in morgue, parking lot, evidence vault, and in the hallways near the entrance. The state police installed two additional cameras, one in the evidence vault and one in the anteroom where evidence is received. There are no cameras on the overnight evidence depository, and the area in the morgue where the investigator inventories and seals decedent's medications. There is no camera in the evidence receiving area other than the newly installed state police camera. There is no coverage of the area in the laboratory where the chemists store evidence during the analysis procedures. The perimeter of the building is not covered and the coverage of the parking lot is inadequate. The recording equipment for the system, as well as the monitor are positioned in the a/v room. The room is not sufficiently secure for this purpose. Recordings are kept for one and one-half weeks.

RECOMMENDATIONS

1. Place recording equipment in a secure environment with limited access (preferably limited by a card access system see below).
2. Recordings should be on 30-60 day loop as per industry standards.
3. Install cameras in the following areas:
    a. The area of the overnight evidence depository
    b. The area where the lockers containing the evidence in process are located
    c. Entire perimeter of the building
    d. The area to cover the entire path of evidence from entering the building to departure from the building for either destruction or court purposes
    e. The morgue area where the investigator inventories and seals the medications of the decedent and the lockers they are secured in.
    f. Employee parking lot.
    g. Alley between annex and main building.

ACCESS CONTROL SYSTEM

FINDINGS

The system consists of three parts, including a metal fob on a key chain, a numeric code lock, and a master key. The fob is specific for each individual and is used on certain doors. In order to ascertain who used a fob, when it was used and where it was used one must bring a computer to that specific door and query it for all entries. There is no central location to identify individuals and time and place of entry. The numeric locks are an even worse system of control in that you cannot determine any entry or exit information from any door. The numeric locks are on all laboratories and evidence sign-in room. The system allows for any door to be propped open with no alarm alerting anyone of this condition.

RECOMMENDATIONS

1. It is recommended that a card access control system be implemented in the entire building. This system allows limited access to highly secure areas, detect who entered a specific door and the time of entry. It also has the ability to alert personnel when someone tries to circumvent the system by leaving a door propped open.

OTHER OBSERVATIONS THAT IMPACT SECURITY

1. Even though there is a sign-in procedure and visitors are escorted, they are not asked for photo identification.
2. A serious situation exists in that the Forensic Evidence Specialist (FES), every Wednesday, travels unescorted by police or other armed guards, to the southern part of Delaware and picks up drug evidence from the southern counties' police and well as the state police. The FES is acting as a courier service. When he is not available other individuals have been drafted to perform this service even extending to accountants or secretaries. This is a serious safety and security issue for potential theft, breach in the chain of custody, or safety of the employee.
3. There are no full background checks or drug screens performed on employees or potential employees. Criminal background investigations of all OCMED personnel, including drug screening is highly recommended.
4. The lockers that store the evidence under examination by chemists are not secured to the floor or wall and are of poor construction. These lockers can be moved over the entire lab or have the potential of being removed.
5. The room to the OCMED server was left unlocked throughout the review by AI.
6. Gates to parking areas and alley between annex and main building remain open. Self-closing locked gates that are in place are not being utilized.
7. Nitrogen tank enclosure is unlocked and there is no top enclosure. The tanks are easily accessible.

CONCLUSION

The issues identified in this report did not occur overnight and will not be addressed overnight. It will take leadership in the OCMED that it has not seen in several years to sufficiently tackle the myriad of items identified here. The OCMED has a wealth of talented professionals capable and willing to address these long-standing issues. The recent legislation signed by the Governor has begun what will be a lengthy process to correct and overcome years of neglect. The appointment of the Forensic Science Commission is also seen as a much needed addition to the oversight of this important state Division and its future direction.