Department of Health and Human Services (DHHS)
Findings and Recommendations for Improvements in the NC Medical Examiner System
Joint Legislative Oversight Committee
Medical Examiner Subcommittee
September 29, 2014

The DHHS Office of the Chief Medical Examiner (OCME) makes recommendations for improvements in the state's Medical Examiner (ME) system with the following caveats:

- The National Association of Medical Examiners (NAME) sets accreditation standards for ME systems.
    - There are no other national accrediting bodies for ME systems.
    - NAME's minimum standards describe basic services and functions which an ME system should provide its citizens to ensure accuracy of and confidence in the system's findings related to manner and cause of death. Families of decedents as well as law enforcement partners require and deserve to have this confidence in their ME system.
    - North Carolina's statewide ME system has not yet achieved NAME accreditation.

- Existing OCME budgeted resources (state appropriations and autopsy/ME fees) are not sufficient to support existing ME system services, nor are they adequate to make system-wide improvements necessary to move our state toward meeting NAME accreditation standards.
    - Any increases in funding to the OCME, regardless of the source, should not be offset by reductions in existing funding (state appropriations). This action will result only in a system that maintains the status quo and which currently is not sufficient to serve its many customers.
    - Current funding gaps are described in these recommendations, as are new activities which must be implemented for NC's ME system to meet minimum NAME standards.

- Recommendations are made in 3 broad topic areas; each topic area includes recommendations for:
    - **Short term actions** to stabilize the current system in its existing regional structure. These are actions DHHS believes can be implemented in a short time frame and are critical to immediately improve the ME system.
    - **Mid-term actions** to build increased and new capacities to improve the ME system and to meet national accreditation standards.

Recommendations to support the statewide medical examiner (ME) system using a regional model (national recommendation), and to make one-time infrastructure investments to enhance and expand the existing regional structure so the ME system can move forward in meeting national accreditation standards.

Short Term

Continue centralized state-funded infrastructure functions currently provided by the OCME (toxicology, Medical Examiner Information System, quality assurance, transportation), and improve their capacity. More specifically, DHHS recommends:

(1) ***Upgrade the Medical Examiner Information System (MEIS)*** to meet national accreditation standards and to better support real-time field ME investigations and reporting, to improve data analysis for trends in cause of death, and for overall reporting and billing functions.

- The OCME's current MEIS is based on obsolete technology first implemented in 1972 on the University of North Carolina at Chapel Hill's IBM mainframe housing administrative data. Conversion of MEIS data from IBM files to a relational database occurred in the mid-1990s and implementation of its first production applications was accomplished by 1998. The conversion necessitated adoption of a myriad of technologies framed on Sun Server microchip capability. This capability is 15 years old, is no longer supported, and requires changing the application modules in order to update to a supportable technology.
- The MEIS is not accessible by all MEs in the state, and real-time reporting is not supported by the MEIS.
- Currently, billing invoices are manually constructed by OCME staff from ME investigation and autopsy reports received. **Such manual processes are highly inefficient, wasteful of resources,** and do not facilitate efficient data tracking and reporting.
- The OCME also does not have an established system to respond to and track requests for information, data, and reports from citizens, legislators, and other stakeholders. **The absence of such a system hinders the OCME's ability to provide excellent service to all its customers.**

DHHS has identified internal resources (2 full time equivalents, or FTEs - 1 programmer and 1 operations) to support the MEIS system upgrades and ongoing system functions.

Estimated costs for an in-house technology upgrade are $1.655 million (non-recurring) and $20,000 (recurring), with an optional non-recurring mobile device cost of $540,000.

(2) ***Continue to fully support statewide body transportation costs through centralized state resources and a master agreement.*** When the current statewide ME system was established in 1972, the state absorbed the burden of this cost because counties were required to transport dead bodies to regional autopsy centers (rather than being handled locally with coroners). This function is currently completed in an efficient and effective manner by the OCME. Though state law does not specifically define an entity responsible for this function, statewide oversight of this critical function is needed to:

- Ensure consistent guidelines and standards for transporters are clearly communicated, monitored, and enforced.
- Reduce the potential for the appearance of favoritism in service provision at the local level.
- Account for the fact that current transporters serve more than one county and also serve more than one existing regional autopsy center.

- Reduce the logistical burden to existing regional autopsy centers that would be required if they negotiate and monitor multiple contracts with transporters (instead of the state completing these functions with a master agreement).

Funds provided in the SFY 14-15 OCME budget expansion item of $1 million will fill the gap for historical shortfalls in funds in the OCME budget to cover transportation costs.

Transportation rates, however, have not been adjusted since 2004 and have not kept pace with increased fuel costs. The OCME is developing a Request for Proposals (RFP) for new statewide transporter agreements. Body transportation costs are expected to increase, therefore, ***future inflationary adjustments to account for new transportation rates will need to be considered for the OCME to continue this centralized function.***

Mid-Term

(1) Develop a funding strategy to address the need for additional 2 regional autopsy centers (to meet national accreditation standards associated with employing qualified personnel) and to address crumbling or undersized infrastructure in 3 existing regional autopsy centers (centers will currently not meet national accreditation guidelines and will not accommodate increased volumes of autopsies to continue to function long-term as regional autopsy centers)

- It is estimated that 2 new regional autopsy centers would be required to meet the national accreditation standard that all autopsies be performed by board-certified forensic pathologists, and to more effectively serve rural counties in the far eastern and far western counties in our state.
  - Approximately 19% of autopsies completed in SFY 12-13 in North Carolina (734 of 3,803) were performed by non-board-certified forensic pathologists.
  - There are only approximately 500 practicing full time board-certified forensic pathologists nationwide, and competition to employ them is fierce.
  - It is not expected that the national supply of board-certified forensic pathologists will improve in the near future in order to meet national standards by hiring more board-certified forensic pathologists.
  - Simply diverting over 700 autopsy cases annually to the 4 existing regional centers which currently employ only board-certified forensic pathologists is neither practical nor affordable. Regional centers currently do not have space to accommodate these additional cases. Such a diversion would also increase body transportation costs, and would require law enforcement partners to expend more resources in staff travel time and fuel costs to attend autopsies and to consult with forensic pathologists in death investigations.
  - A total of 6 regional autopsy centers in the state would reduce the maximum number of counties served by a single autopsy center and provide quicker turnaround of autopsy results for families and other customers.
- DHHS has reached out to potential partners for consideration to host 2 additional regional autopsy centers. As of July 2014, Mission Hospital was not interested in pursuing establishing a regional autopsy center. OCME is still in dialogue with Campbell University; however, Campbell does not have the clinical sites available to serve as a regional center and is not expected to have capacity to serve this role in the immediate future.
- State-owned construction for 2 facilities should be considered (in the size and design similar to Mecklenburg County ME facility). In order to provide the best statewide coverage (and relative to existing regional centers) preferred locations for 2 additional regional autopsy facilities are in the Southeastern region (Wilmington) and Western region (Asheville/Edneyville) of the state.
- Ongoing operational support for 2 new regional autopsy centers would also need to be considered.

If the General Assembly chooses to consider 2 new regional autopsy centers:

- Estimated one-time cost (using purchased or state-owned land) for construction of a single new state-owned autopsy facility in Wilmington and Asheville is $12,383,000 per facility.

- Estimated one-time cost for equipment purchases for a single free-standing state-owned autopsy facility is $650,000 per facility.
- Recurring costs of operating a single new regional autopsy center are estimated at $705,000 annually for salary and fringes (8 FTEs) and $474,955 annually for operations and maintenance per facility.

- ECU's regional autopsy center is 25 years old (built in 1989). WFU's facility is 73 years old (built in 1941).
  - Neither facility can be expanded within its existing footprint to accept more autopsy cases as a regional provider.
  - Both centers would also require newly-constructed facilities to meet national accreditation standards. They do not have sufficient autopsy table space, body storage space, counter space or staff space to support more autopsies or to meet minimum square footage standards for accreditation.
  - They also lack a myriad of features that would be barriers to meeting accreditation standards. Some examples are inadequate security, ventilation, explosion proof storage for flammable materials, lighting, and refrigeration.
- The missions of both ECU and WFU are not intricately tied to the mission of the OCME, and both organizations have reported they are unlikely to invest in capital improvements to these facilities for an ME system that General Statutes directs the state to operate.
- State-owned construction to replace the current ECU and WFU facilities should be considered (in the size and design similar to Mecklenburg County ME facility). Ongoing operational support could be assumed by the contractor through the existing method of funding (contract funds from the OCME and statutory autopsy fees).
- The Mecklenburg County ME will also require additions to its current facility to expand regional coverage, or to meet national accreditation standards. This includes needs for additional autopsy space and staff space. The Mecklenburg County ME facility was designed and constructed with future expansion potential and with land already available.

If the General Assembly chooses to consider replacement autopsy centers for ECU and WFU, estimated one-time construction cost for replacement of the ECU facility (using state-owned land) would be $11,526,000, and estimated one-time construction cost for replacement of the WFU facility is $12,383,000.

If the General Assembly chooses to consider infrastructure upgrades to the Mecklenburg County ME office, Mecklenburg County has self-reported estimates of approximately $750,000 for expansion of its existing facility.

(2) Seek OCME national accreditation once prerequisites are met.
Seek accreditation of regional autopsy centers once prerequisites are met.
(Additional details on accreditation requirements will be outlined in the full report).

Recommendations to improve the quality of death scene investigations

Short Term

(1) Increase the statutory ME fee from $100/case to $250/case.

- NC does not have enough qualified local MEs to keep pace with state's growing population and demand for death investigations. The OCME prefers only licensed physicians be appointed as MEs but recognizes this is likely unattainable in the near future in our state. The demands on physicians' time and the current $100 reimbursement fee for ME cases have challenged the OCME's ability to recruit and retain physicians as MEs.
- OCME has enlisted the assistance of local partners to recruit additional local MEs, including reaching out to Emergency Medical Services (EMS) systems and EMS providers as potential MEs.
    - Feedback from current MEs indicates recent recruitment efforts are hampered by litigation concerns of potential MEs and by lack of adequate compensation for time and travel associated with completing and reporting ME cases.
    - Since September 2013, 56 medical examiners have been added statewide but 63 medical examiners are no longer active (a statewide net loss).
- MEs in our state do not complete ME work on a full time basis. North Carolina has essentially a volunteer ME system.
- The statutory fee for completing a medical examiner case is $100, has not been updated since 2005, and has not kept pace with increased fuel and supply costs.
- An ME fee increase will not necessarily provide additional revenue for the OCME.
    - General Statutes direct the OCME to pay both ME and autopsy fees to providers of these services when a death occurs outside the decedent's county of residence.
    - These out-of-county deaths account for approximately 17% of annual ME cases in North Carolina and are paid by the OCME (based on 6 calendar years of data).
    - Any offset in current funding (relative to a proposed ME fee increase) will not improve the operational budget for the OCME and will not move the ME system forward.

If the General Assembly chooses to increase the statutory ME fee, using 6-year (calendar year) average costs, the estimated annual increase in statewide costs (to counties and to the OCME) to increase the ME fee from $100/case to $250/case is $1,490,420. This estimate assumes the current statutory language defining state and county payment responsibilities for ME fees is unchanged.

(2) Mandate ME orientation and training, and fund recurring training costs of $100,000 at the OCME to support this effort.

- DHHS/OCME has been assessing ME orientation and training for some time.
    - An annual seminar for MEs was previously hosted by the OCME but was suspended in secondary to lack of funding.
    - In July and August 2014, the OCME reached out to the North Carolina Area Health Education Centers (AHECs) and other potential partners to assess their potential roles as partners in restarting this annual orientation, as well as in delivering ongoing annual ME training. OCME is continuing to review its options for selecting partners to assist in training efforts.
    - OCME is also considering various formats for delivery of training to reach MEs across the state. This includes face-to-face training, webinars, and electronic tutorials.
- DHHS has identified an internal resource (1 Full Time Equivalent, or FTE) to serve as Training Coordinator for a statewide ME training program.
- Initial funds secured in the approved $1 million expansion request for the OCME SFY 14-15 will partially support the development and implementation of the training program.

- $100,000 was previously requested for this effort as part of the additional $1 million included in the Governor's Expansion Request for SFY 14-15 for the OCME (was not included in the final budget enacted). These recurring funds are needed to implement the ME orientation and training program.

Mid-Term

(1) Evaluate the use of Medicolegal Death Investigators (MDIs) for the North Carolina medical examiner system, in addition to maintaining the existing system using appointed MEs.

(2) Develop a strategy of state-local funding to provide 0.5 MDI FTEs per 100,000 population in our state (national recommendation).

- There is a public expectation that medical examiners go to death scenes to initiate their investigations. This has not proven feasible in a voluntary medical examiner system and has never been required in North Carolina.
- The quality of death scene investigations therefore varies across the state.
- NAME accreditation standards, however, do not require a visit to the death scene for every ME case.
- The 2001 Medical Examiner Study Group recommended that North Carolina establish the position of Medicolegal Death Investigator (MDI) for the NC medical examiner system. The MDI is a non-physician resource who is trained in investigative techniques and works under an appointed medical examiner.
    - There are no nationally recommended minimum education standards for MDIs. States are encouraged to establish minimum requirements, and the OCME would set a minimum standard of at least an associate's degree in a medical field.
    - The American Board of Medicolegal Death Investigators (ABMDI) provides training and a certification program for MDIs, and this would also serve as a mandatory requirement for the MDI role in North Carolina.
- The American Academy of Forensic Science (AAFS) recommends 0.5 MDI Full Time Equivalents (FTEs) per 100,000 population. For North Carolina's population of over 9.85 million, approximately 50 MDIs would be needed to meet AAFS' recommended coverage area.
- The existing ME system in North Carolina cannot be completely dismantled in favor of a Medicolegal Death Investigator only system. If MDIs are to be considered in our state's ME system, it seems prudent to establish the role in the existing regional ME system (a hybrid system).

If the General Assembly chooses to consider establishing the role of MDI in a statewide fashion, using a cost of $57,000 (salary and fringes) per MDI, approximately $2.85 million would be required to fund the personnel costs only for full statewide coverage of MDI services at the nationally recommended guidelines. This would not include operational support such as supplies and transportation.

Recommendations to support existing statewide autopsy services

Short Term

(1) ***Fully support the 3 existing regional autopsy centers by reimbursing them for closer to their stated costs to perform autopsies.*** Regional autopsy costs are currently funded by both state funds (through OCME's contracts with ECU, WFU, and Mecklenburg County ME Office) and county funds (through the current statutory autopsy fee of $1,250/case).

Like the ME fee, any offset or reduction in current OCME funding relative to a proposed autopsy fee increase will not improve the operational budget for the OCME and will not move the ME system forward.

- Autopsy fees have not kept pace with inflation and have not been increased to account for increases in basic operating expenses such as disposable supplies, utilities, and scientific supplies and equipment, as well as salaries for board-certified forensic pathologists, for which there is a low supply and high demand nationwide.
- The state currently supplements (through contracts) the 3 existing regional autopsy centers by $400 per autopsy.
- Combined with the statutory fee of $1,250/case these centers receive from counties for autopsy payments, these funds total $1,650/autopsy and do not meet the self-reported costs for an autopsy for the 3 centers (which includes their indirect costs and overhead). Self-reported costs (required for their current SFY 14-15 contracts) are listed in the table below.
- Based on a cost study completed by the DHHS Controller's Office in September 2014, the OCME's cost per autopsy is $2,813. This excludes the OCME's costs for centralized ME system functions such as the MEIS, transportation, and toxicology services.
- As previously noted, the missions of both ECU and WFU are not intricately tied to the mission of the OCME. Both organizations have reported they are unlikely to continue to provide autopsy services if they are unable to be reimbursed for their costs.
- If the General Assembly chooses to fully reimburse regional centers for the actual cost of an autopsy, the Mecklenburg County ME Office's self-reported cost appears to be a good representation of actual costs for completing autopsies in a regional center, since the Mecklenburg County ME Office solely functions to complete autopsies and related activities.

Regional Autopsy Center Self-Reported Costs
(Requirement for current SFY 14-15 contracts)

Center	Total cost per autopsy (includes indirect costs and all overhead)
East Carolina University	$3,579
Wake Forest University	$2,630
Mecklenburg County ME Office	$2,816

(2) ***Support additional forensic pathology fellowship positions (approximately $250,000 recurring annually) at both WFU and ECU*** to provide a ready supply of trained forensic pathologists to support the OCME and regional autopsy centers. Fellowship programs are a vital part of succession planning for a statewide ME system.

- There are less than 500 practicing full time board-certified forensic pathologists in the nation and competition for their services is fierce.

- Forensic pathology fellows programs are a nationally-recognized route to build stability and capacity in a statewide medical examiner system and to create a deeper workforce and workforce sustainability.
- Fellows often take positions in the state where they train. Fellows also perform autopsies which generate receipts well in excess of their salary and benefits. Therefore, investments in fellowships bring long-term and short-term benefits.
- DHHS is providing an internal resource (1 FTE) to fund a board-certified forensic pathology fellow at the OCME for SFY 15-16 but does not have the resources to fund similar positions at both WFU and ECU.

Funding to support this function was recommended in the Governor's proposed budget for SFY 14-15 but was not included in the final budget enacted.