National Association of Medical Examiners

Hic locus est ubi mors gaudet succurrere vitae

Presentation to the Forensic Committee of the National Academy of Sciences

1) Present and future resource needs
2) Maximize technologies and techniques
3) Potential applicability of scientific advances
4) Increase available practitioners
5) Disseminate best practices - quality & consistency
6) Homeland security mission

J.C. Upshaw Downs, MD
NAME Board of Directors
Vice-Chair, CFSO Board

CFSO Consortium of Forensic Science Organizations

"Show me the manner in which a nation cares for its dead and I will measure with mathematical exactness the tender mercies of its people, their respect for the laws of the land, and their loyalty to high ideals."

- Sir William Gladstone

Medical examiners, coroners, & public health: a review and update.

Arch Pathol Lab Med. 2006 Sep;130(9):1274-82.

"CONCLUSIONS: The role of medical examiners and coroners has evolved from a criminal justice service focus to a broader involvement that now significantly benefits the *public safety, medical, and public health* communities. It is foreseeable that the public health role of medical examiners and coroners may continue to grow and that, perhaps in the not-too-distant future, *public health impact will surpass criminal justice as the major focus of medicolegal death investigation in the United States*."

Status and Needs of Forensic Science Service Providers: A Report to Congress
By National Institute of Justice
March 2006

1) Present and Future Resource Needs

- ~1% population dies per year
- ~20% require investigation
- Types
    - Unnatural (violence)
        - homicide
        - suicide
        - accident
    - Natural
        - sudden/unexpected
        - unattended
    - Miscellaneous
        - public health
        - work-related
        - iatrogenic
        - contagious
        - cremation
        - custody/law-enforcement

Status and Needs of Forensic Science Service Providers: A Report to Congress
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Medicolegal Workload

CASES

- Natural - 156,000
- SIDS - 2,000
- Accident - 102,000
- Suicide - 30,000
- Homicide - 17,000
- Undet. - 4,500
- Other - 500

TOTAL - 312,000

AUTOPSIES

- Trauma (90% rate) – 156,000
- Natural (33% rate) – 55,000

TOTAL – 195,000

300,000,000 POP = 600,000 CASES

Federal Studies

- National Research Council. *Bulletin of the National Research Council, No. 64: The Coroner and the Medical Examiner. Washington DC: National Research Council; 1928.*
- National Research Council. *Bulletin of the National Research Council, No. 87: Possibilities and Need for Development of Legal Medicine in the United States. Washington DC: National Research Council; 1932.*
- Institute of Medicine. *Medicolegal Death Investigation System: Workshop Summary. Washington DC: National Academy of Sciences; 2003.*
- Bureau of Justice Statistics. *Census of Medical Examiner and Coroner Offices. Washington DC: 2005 – In progress*

“Substantial public need for accurate death info”

- Criminal adjudication (COD & MOD)
- Public health
  - documenting medical errors
  - promote quality & trust
- Civil adjudication
- Victim identification
- Prevention (through surveillance)
  - injury
  - infection - bioterrorism

"All those public needs are *national needs*.

For many historical reasons, the responsibility for death investigation is rooted largely, although not entirely, at the state and local level, *particularly at the county level*.

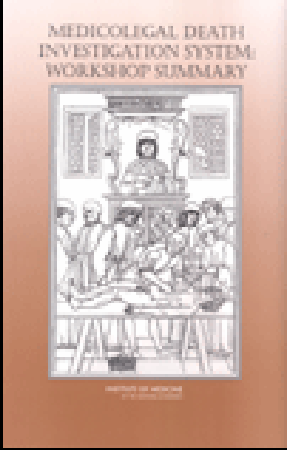
Yet over time, the national need has become increasingly apparent.

Consequently, *there has to be greater priority at the national level*."

Significant weaknesses in the "system"

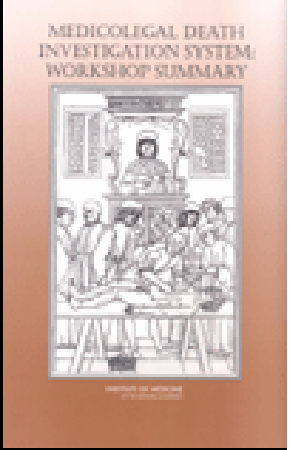
- Budget overriding determinant of
  - number of autopsies
  - types of tests conducted
- Greatest apparent deficit
  - *hospitals*
  - *hospices*
  - *nursing homes*
- Only area working – mass disaster
  - gaps even at federal level (bio/infectious)

(In)adequacy of information



- Continuum
  - sparsely populated county (coroner)
  - well-endowed medical examiner
- Determinants
  - resources
  - quality (expertise & professionalism)
  - legal structure

Impediments to change



Concerns for almost a century

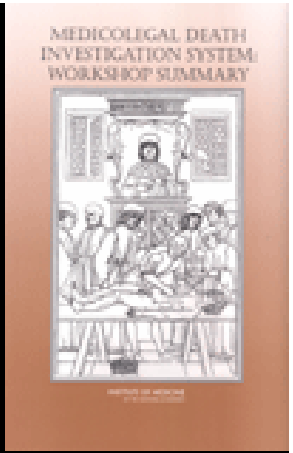
- Lack of prestige
- Lack of advocacy
- Lack political support

Census of Medical Examiners/Coroners and Inventory of Unidentified Remains

- *Bureau of Justice Statistics* – 2005 **B**
- First BJS for medico-legal death investigation
- ~3,200 medical examiner/coroner offices
- National picture

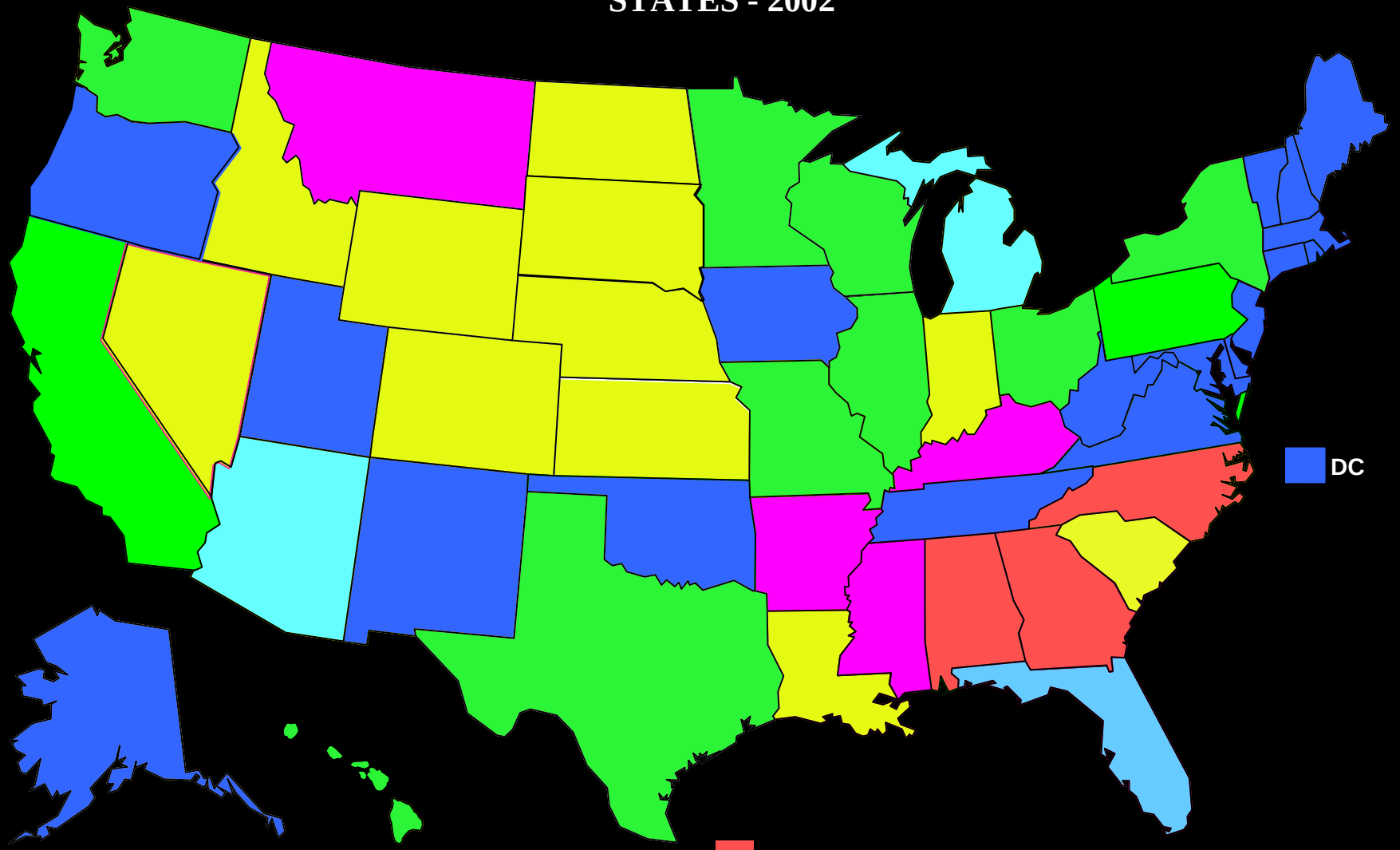
  personnel expenditures
  functions workload
  resource needs
- Data on unidentified remains

Deficiencies in ME/Coroner system



- Inadequate resources
- Inadequate expertise
- Imperfect legal structure
- Inadequate facilities
- Inadequate technical infrastructure (esp. infectious)
- Inadequate training disciplines involved
- Lack practice & info standards
- Lack quality measures & controls
- Lack information systems
- Lack research

MEDICAL EXAMINER AND CORONER JURISDICTIONS IN THE UNITED STATES - 2002



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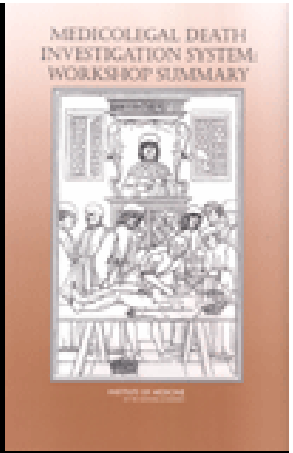
COMPARING SYSTEMS
MEDICAL EXAMINER/CORONER

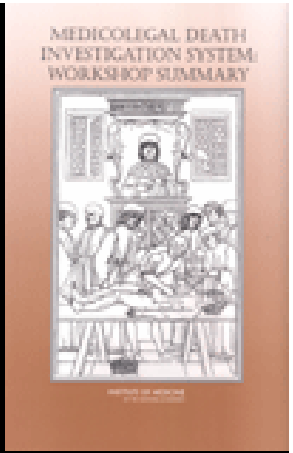


- Quality
- Independence
  - population size
  - county budget variation
  - politics
- Professional
  - medical
  - highly trained
  - integration scene & lab
  - investigation
    - history
    - witness interviews
    - physical examination

"The Gold Standard"

"…a highly professional, well-endowed *medical examiner office* with access to all necessary technical expertise."

1928 NRC in 2003 IOM



"*…the coroner system should be replaced by the medical examiner system.* The coroner system lacks proper training and is fraught with potential conflicts of interest, particularly when coroners are funeral home directors, as they often are, for whom publicity affects business."

2) Maximize Technology & Techniques

- Support laboratories
  - Toxicology
  - Other support
- Computerization/LIMS
- Imaging equipment
  - photography
  - CT
  - MRI
  - fluoroscopy
- Virtual autopsy

Toxicology Lab

Current

- In-house (37%)*
- State/police laboratory
- Hospital /clinical laboratory
- Private toxicology laboratory

Recommended

- In-house toxicology laboratory

** awaiting NIJ 2005*

Equipment and Facilities **B**

- Inadequate size
- Outdated
  - physical plant (avg ~20 years)
  - technology
  - safety
    - infectious diseases
    - >1/3 lack design/airflow control pathogens
    - many not bio-safety level 3
- Under-equipped
  - computers/LIMS
  - microscopes

3) Potential Applicability of Scientific Advances

- *Whole other level*
- **Resources to implement basics B**

- ***American Journal of Forensic Medicine & Pathology***

4) Increase Available Practitioners **B**

Medical Examiner Office Components

- Medical
- Investigative
- Administrative
- Technical support
- ± Laboratory

  toxicology

  other(s)

Medical Staffing

- Board certified forensic pathologist (FP) **B**

- Board certified “hospital” pathologist
- Non-board certified pathologist
- Non-pathologist physician

- Physician’s assistant/other

Forensic Pathologists – Supply

Current

- 989 total FPs
  - 600 part-time & full-time
  - *350-400 full time*
- Mean 225 autopsies/year
- Mode 200 autopsies/year
- 40% perform >250 autopsies/year
- *9% perform >350 autopsies/year*

Needed

- ~800 full-time FPs @ 250 autopsies/year
- ~980 full-time FPs @ 200 autopsies/year

Challenges
Forensic Pathologists – Supply

- Inadequate training exposure
  - setting
  - priority
- Salary
  - "Hospital" pathologist – $270,000
  - Medical Examiner –
    - Chief <$150,000
    - Other <$120,000
- Retention
  - 30 new/year (16 in 2006)
  - 1/3 part-time FP ("hospital" pathology)
  - 1/3 leave within 10 years

Professionalism – Forensic Pathologists

- Basic competency and adequate practice
- Board certification **B**
- Professional performance parameters **B**
- Continuing education **B**

- Availability
- Cost

Professionalism – Death Investigators

- Basic competency
- Required training

  National Forensic Academy – law enforcement
- Death scene investigation guidelines (NIJ 1998) **B**
- ABMDI certification **B**

  ~800 registered

  continuing education

- Availability
- Cost

5) Best Practices

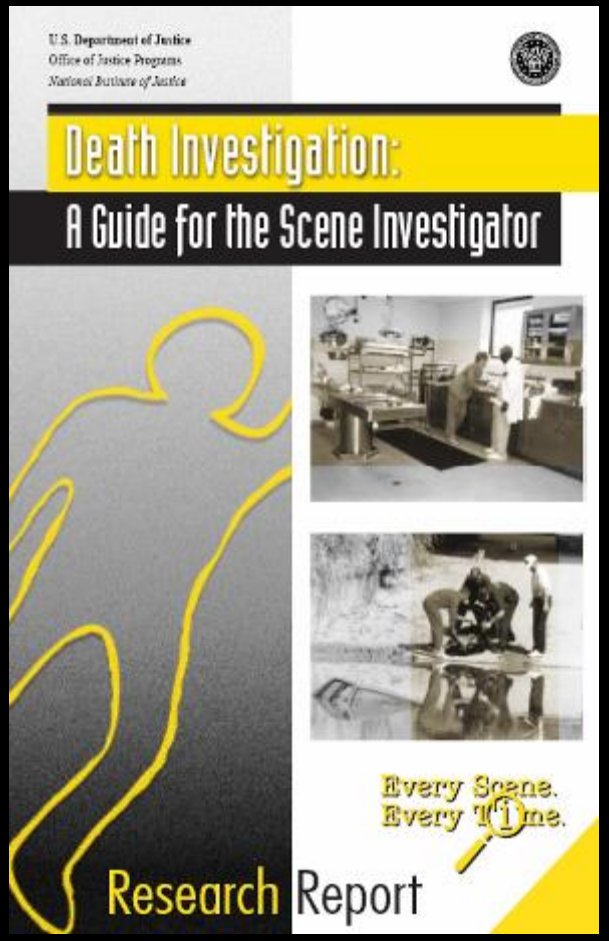
- Certification **B**
- Practice standards **B**
- Lab accreditation

Sample Forensic Autopsy Quality Improvement Program

- Autopsy service
  - overall operation
  - product
- Toxicology
  - selected workups ireviewed
  - unusual/difficult toxicological problems.
- Neuropathology
- Photography
  - reviewed & critique
  - interesting/challenging cases
- Autopsy reports
  - random selection and detailed review
  - written evaluation **è** quality assurance file
- Intradepartmental microscopic consultations
- *Solo practitioners - reports & other work*

Death Investigators

- Almost always non-physician
  - ± Medical background
  - ± Law enforcement
  - Other background
- Training
  - In-house (OTJ)
  - didactic courses



Accreditation – NAME (1975)

- ME facility's operation & practice

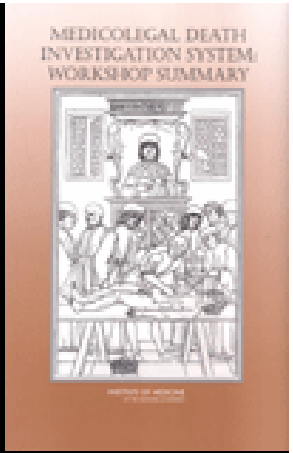
- Total ME facilities – ~465*
- Accredited ME facilities – 60*
- Population served – ~25-30%*

** awaiting NIJ 2005*

Accreditation – Challenges

- Inadequacies
  - staff
  - facility
  - equipment
  - operation
  - resources
- Time consuming
- Potentially costly
- Lack incentive
  - voluntary
  - difficult
  - ± tangible benefits
  - ± repercussions

6) Homeland security mission



"The emerging emphasis on mass disasters and bioterrorism has illuminated *longstanding neglect* of death investigations by the federal government despite the broad public need that has been highlighted by this workshop."

Anecdotal evidence

- D-MORT

- Tri-state crematory (N. Georgia)
  - ~335 sets decomposed remains
- Hurricane Katrina (…and Andrew…and Hugo)
- Pandemic influenza
- Bioterrorism
  - inhalational anthrax
- 9/11 – NYC ME office
  - ~3000 dead
  - ~20,000 remains

NAME Suggestions for Federal Government

- Fully fund & facilitate Coverdell NFSIA
- Active interest in medicolegal death investigation
  - designate lead agency assignment
- Ensure quality medicolegal death investigation
  - support & staff FP-based systems
- Establish policies and programs (through DHHS)
  - encourage & enable more physicians to enter field
  - retain currently practicing FPs
- Support NAME accreditation
- Continued support for established practice standards
- MEs as homeland security "first responders" (funds)
- DHS-ME liaison office
- Information-sharing (MEs & relevant federal agencies)
- Sponsor research and policy discussions

“Injustice anywhere
is a threat
to justice everywhere.”

- Dr. Martin Luther King Jr.

Letter from Birmingham Jail, April 16, 1963