



NATIONAL COMMISSION ON FORENSIC SCIENCE

NIST
National Institute of
Standards and Technology
U.S. Department of Commerce

Increasing the Number, Retention, and Quality of Board-Certified Forensic Pathologists

Commission Action:

On August 11, 2015, the Commission voted to adopt this recommendation with a more than two-third majority (96% affirmative) vote.

Type of Work Product:

View Statement prepared by the Medicolegal Death Investigation Subcommittee.

Statement of Issue

Forensic pathology is a pathology subspecialty that is largely practiced on behalf of the public. Forensic pathologists (FPs), forensic medicine service providers, support the public health, public safety, and criminal justice systems, as well as provide critical information to the families of decedents and their treating physicians. There is a shortage of FPs in the United States, so many communities lack the valuable information that these physicians provide. The shortage involves not only an inability for communities to recruit FPs but an inability to retain them in practice. Consequently, forensic autopsies are being performed by non-forensic pathologists who may not be qualified. In some cases, autopsies are not performed when they should be.

View of the National Commission on Forensic Science

It is the view of the NCFS that awareness be raised and consideration be given to mechanisms that will ensure an adequate supply of FPs are available to serve the medicolegal needs of the nation. Having an adequate supply of FPs is a public health and public safety imperative. NCFS believes that change will not come without intervention. The following areas have the greatest impact (see “Recognized Needs of the Pathology Community” section later in this document for more details).

- **Better Exposure to Forensic Pathology in Medical Schools and Training Programs**
Medical schools and pathology training programs should be encouraged to assist in recruiting FPs.
- **Improved Quality with Autopsy Performance by Forensic Pathologists**
Federal granting institutions that award funds to police agencies or crime laboratories should consider including a requirement that all forensic autopsies performed under their authority be performed by a FP.
- **Improvement of Forensic Pathologist Compensation**
Financial incentives should be encouraged, such as loan forgiveness for FPs in full-time practice for 10 years of public service and salaries that are more competitive and in line with other medical specialties.

- **Adequate Facilities**

Quality assurance, quality control measures, quality work environments, and cutting-edge technology are critical to ensuring retention of quality personnel, increasing the community of FPs, and advancing the reliability of the medicolegal field of practice.

Background

Forensic pathology is the practice of medicine, a recognized subspecialty of pathology and distinct from crime scene investigation and coroner duties. It encompasses public health; judicial and public safety concerns; occupational, consumer, and family health risks; and population mortality trends and statistics.

A FP is a physician who meets one of the following criteria: (1) has been certified in forensic pathology by the American Board of Pathology (ABP) following training in forensic pathology; (2) has successfully completed a training program in forensic pathology that is accredited by the Accreditation Council on Graduate Medical Education (ACGME) or its international equivalent and has been officially “qualified for examination” in forensic pathology by the ABP for no more than 2 years since completion of training; or (3) has successfully completed a training program in forensic pathology that is accredited by the ACGME or its international equivalent and was never certified in forensic pathology by the ABP but has practiced forensic pathology for 10 years or more in a medicolegal office. A forensic autopsy may also be performed by a physician who is a forensic pathologist-in-training (resident/fellow) at an institution designated by the ACGME for training in forensic pathology and who is under the direct supervision of physicians cited in the previous three categories.

Medicolegal death investigation offices cannot perform quality investigations, examinations, and testing without FPs. In fact, the National Research Council 2009 report on the forensic sciences (“Strengthening Forensic Science in the United States: A Path Forward”) specifically recommends, “All medicolegal autopsies should be performed or supervised by a board certified forensic pathologist” (1). Unfortunately, there currently are not enough board-certified forensic pathologists (BC-FPs) in the United States to meet national needs, with some areas having limited or no access to FPs (2, 3).

The FP should be an autonomous and neutral physician independent of political influence and law enforcement officials. The work of the FP should be performed in a modern, nationally accredited medicolegal system. These work conditions could help attract and retain forensic pathologists.

Although no specific workload numbers exist, Weinberg et al. published a study in 2013 examining the characteristics of medicolegal death investigation offices accredited by the National Association of Medical Examiners (NAME) (4). In their study, Weinberg and colleagues found that in accredited offices, there was an average of 3.7 forensic pathologists per 1 million population conducting an average of 222 autopsies per pathologist, which is within the annual case load limits established by NAME (250 autopsies and autopsy equivalents per year per pathologist) (5). Utilizing these data, it can be extrapolated that between 1,100 and 1,200 BC-FPs are required nationally to conduct forensic autopsies. This estimate would include fellows in training and would take into account FPs such as chief medical examiners and others who would perform a reduced autopsy load to accommodate activities such as administration or research. Unfortunately, there are estimated to be only 500 BC-FPs currently practicing forensic pathology full time, with an average age of 52 years (2,6).

Between 2007–2013, a total of 290 people were trained in forensic pathology, an annual average of 41 per year (7,8). Hanzlick and Haden-Pinneri conducted a study of 190 people who did a forensic pathology fellowship during the years 2000–2005 (8). Of these, approximately 67% practiced full-time forensic pathology; 21% did not practice at all; 7% practiced part time; 3% only did forensic pathology consulting; and 2.6 % did not complete the fellowship. Additionally, Hanzlick and Haden-Pinneri found that only 67% of those who trained in forensic pathology went on to obtain board certification, and only 78% of those practiced forensic pathology full time (8). Thus, of the 41 people training in FP each year, approximately 27 became board certified, with only 21 of those eventually practicing forensic pathology full time.

Complicating the workforce demographics is the fact that of the 33% of FP trainees who did NOT obtain board certification, 44% still practiced forensic pathology full time, resulting in practitioners who often lacked the competence to meet accepted standards of practice (8).

Considering an annual creation rate of 21 FPs per year, and given the current work force of 500 FPs, it would take approximately 25 years to create enough FPs to serve the current U.S. population, assuming no population growth during that time. Compounding this issue, the FP workforce is annually decreasing due to attrition from retirement, death, and other factors, including job dissatisfaction because of the stressful nature of political, legal, and media encounters; poor working conditions; the nature of the work; and/or low salaries(2).

In addition to the issues discussed above, the National Research Council's 2009 Report on Forensic Science also recommended research in forensic pathology be a priority for both the practitioners and the offices that employ them (1). To enable time for such research, more FPs are needed.

Recognized Needs of the Pathology Community

As stated earlier, the following areas have the greatest impact on attracting and retaining people to forensic pathology.

Exposure to Forensic Pathology in Medical Schools

The forensic pathologist supply problem starts earlier than forensic pathology fellowship programs and involves the discipline of pathology as well. Approximately 17,500 medical school students graduate each year (9). Of those, approximately 3% of graduates will train in pathology, with 7% of pathology trainees then training in forensic pathology (9,10). The College of American Pathologists posits that the current numbers of pathologists in training will not match the nation's need for hospital-based pathologists (10). Consequently, there is the potential for increased competition for the limited number of pathology residents between hospital-based subspecialties and forensic pathology.

A coordinated effort is needed to recruit more medical students into pathology and forensic pathology. To accomplish this, forensic pathology should be introduced in the medical school curriculum within the first 2 years, as this is a prime time to attract future FPs. The curriculum should dedicate a minimum of a 2-hour block of time to a lecture on forensic pathology, and autopsy case material should be presented by a FP in association with trauma and natural disease clinical course material. In the third and fourth year, elective rotations in forensic pathology should be offered. Because medical schools receive extensive federal funding, a suggestion for establishing a block of time to lecture on forensic pathology as well as establishing elective rotations in forensic pathology would likely be honored if proposed in a strong manner.

Students engaged in an anatomic pathology residency should be required to complete a minimum of 4 weeks of training in forensic pathology. ACGME requires that all anatomic pathology training programs provide their residents with exposure to forensic pathology, but this requirement is not always met. Anatomic pathology residents should be required to spend at least 4 weeks in a medicolegal death investigation office accredited by NAME, assisting BC-FPs in performing medicolegal autopsies. If there are no such opportunities locally, arrangements should be made with a medicolegal office to provide such a rotation. FPs not on the regular pathology department faculty should be compensated for their mentorship.

Funding for Training, Salaries, and Facilities

Thirty-six forensic pathology training programs are accredited by ACGME (7, 11). A survey showed that in 2014, these 36 programs had a total of 78 ACGME-approved positions, only 54 (69%) of which were funded, and only 42 of the funded positions were filled (7). Although it has been proposed to increase the funding and the number of positions available for training, because only 78% of funded programs were filled, recruitment must increase prior to increasing the number of positions available. Once recruitment into the field has increased, it is recommended that all of the ACGME-approved positions be funded. This would be possible by providing incentives for training to local jurisdictions as well as by offering grant funding. In addition, programs should focus on accepting candidates who want to be successful in the field and have a desire to practice full-time forensic pathology upon completing their training.

To retain FPs, salaries must be more competitive with hospital/academic pathology and other medical specialties. A survey by the College of American Pathologists revealed that the average annual compensation of full-time pathologists is approximately \$335,000, when base salary, incentive pay, deferred compensation, and other income are considered (10). In comparison, a 2014 study by Kemp showed that the average salary of a medical examiner is just under \$185,000 (12). The salary is only slightly better for chief and deputy chief medical examiners, who have average annual incomes of approximately \$220,000 and \$190,000, respectively.

In addition to the low salaries, the average FP just entering the field has a great deal of debt from undergraduate and graduate medical education. A recent study commissioned by AAMC found that 86% of medical school graduates report having debt, and in 2012, the median debt of graduating physicians was \$170,000 (13).

Salaries and benefits for FPs can be improved through incentives, grant programs, or agreements/relationships with associated medical schools. For example, some areas of the United States lack access to forensic pathology services and may be considered “unserved” populations. As with some clinical medical specialties, incentives to place FPs in such areas should be developed, such as medical school loan forgiveness programs similar to those offered to other physicians. Having greater options for work locations could also attract more people into forensic pathology.

Although this might be viewed as a separate issue, the primitive working conditions of many offices may act as a disincentive to increasing the number of and retaining forensic pathologists.

Recognition of the essential role that forensic pathology plays in the criminal justice continuum necessitates quality facilities in which to work, including integration of modern diagnostic technologies such as computed tomography, magnetic resonance imaging, and genetic testing.

In sum, the availability of full-time jobs in medicolegal centers with reasonable caseload, salary, and benefits and with opportunities for research, advancement, and professional interaction with peers should facilitate recruitment and retention in the field (14,15).

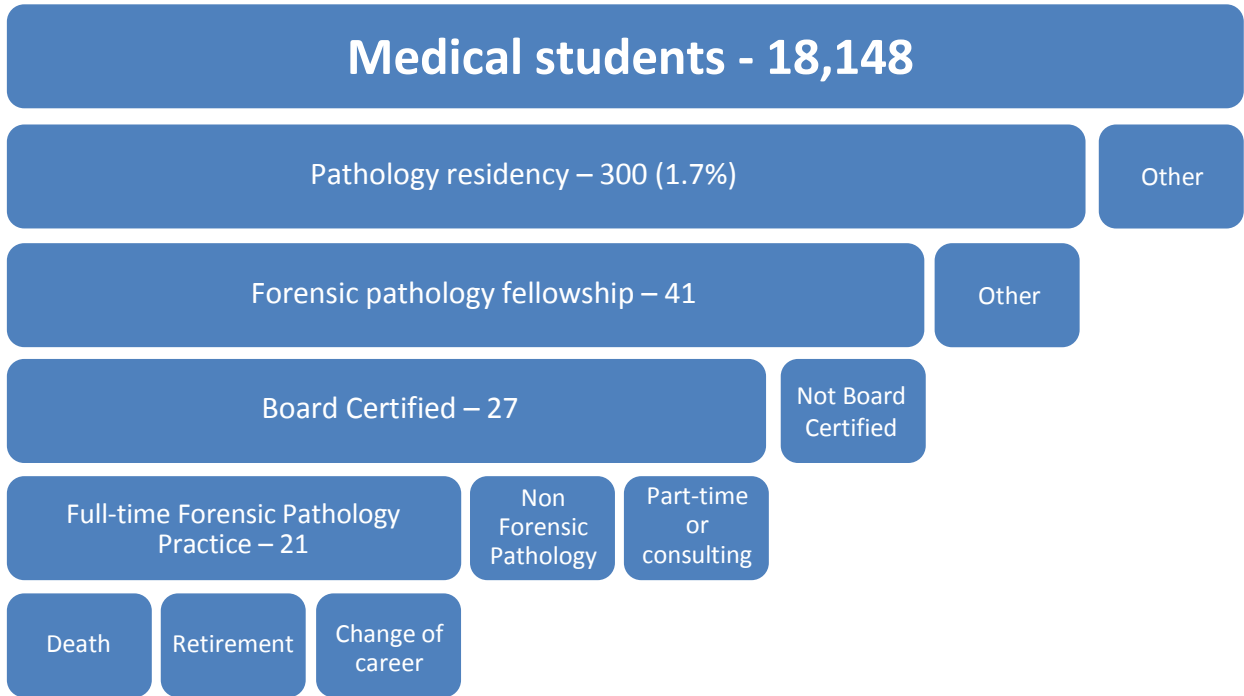
Recommended View Toward Implementation

It is the view of NCFS that the following measures could encourage an increase in the number, retention, and quality of critically needed forensic pathologists available nationwide.

- Ensure that medical schools and pathology training programs provide medical trainees with adequate exposure to forensic pathology.
- Enforce professional standards that require medicolegal autopsies be performed by forensic pathologists.
- Encourage federal funds be provided to increase the pool of potential forensic pathology trainees at all points of the pipeline, and encourage federal incentives to improve the salaries, compensation, and workplace facilities and environment of forensic pathologists.

Appendix A. Progression of Medical Students to Forensic Pathologists 2013

<https://www.aamc.org/download/350998/data/2013ggallschoolssummaryreport.pdf>



Appendix B

Estimated Costs

Fund all 24 unfunded FP fellow positions:

\$2,400,000 per year

Provide loan forgiveness to 40 FP fellows per year at average
debt of \$170,000:

\$6,800,000 per year

Provide a salary increase in FP salary, assuming right now about
500 FTE forensic pathologists:

\$12 to \$25million per year

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