Increasing the Supply of Forensic Pathologists in the United States

A Report and Recommendations
Prepared by the System Infrastructure Committee of the
Scientific Working Group on Medicolegal Death Investigation (SWGMDI)

Introduction

The National Research Council’s *Strengthening Forensic Science in the United States: A Path Forward* identified a shortage of forensic pathologists in the United States and made recommendations to encourage physicians to enter the specialty of forensic pathology (1). This SWG report reviews the reasons for the shortage of forensic pathologists and makes recommendations to increase their supply in the United States.

Background

In order to make recommendations to improve the supply of forensic pathologists, the first question which must be addressed is why there is shortage of forensic pathologists in the United States. There are many reasons, and each of these is discussed below.

Although there are 131 medical schools in the United States, there are only 37 ACGME-accredited forensic pathology training programs, and many of these have only loose affiliations with medical schools (2,3). One or more medical schools exist in 45 of the states and the District of Columbia, but accredited forensic pathology training programs exist in only 27 states and in Puerto Rico. Thus, for many medical students, there is no direct path for forensic pathology training in the state where the student attended medical school.

Most medical schools have little or no exposure to forensic pathology in the medical school curriculum. 43 states have accredited training programs in anatomical pathology, which is a prerequisite for forensic pathology training. However, many of the programs do not offer forensic pathology fellowships and the exposure to forensic pathology in the basic anatomical pathology training programs may be minimal. In fact, some report that faculty actually discourage forensic pathology as a career (4). Further, many who selected forensic pathology as a career report that they did so because of a very positive autopsy experience in pathology training and/or they had an admirable mentor in forensic pathology. Thus, a lack of exposure to forensic pathology in medical school and basic pathology training (or a bad experience during exposure) creates a
situation in which forensic pathology is not recognized by students and residents as a goal worthy of pursuit.

More and more medical schools are moving away from traditional pathology courses. This reduced exposure to pathology may result in fewer medical students selecting pathology as their choice for residency, which is a pre-requisite for going on to forensic pathology.

Another problem is the small number and incomplete funding of ACGME approved forensic pathology fellowship positions. A recent survey showed that among the 37 training programs in the United States, there were a total of 78 approved positions, but only 53 were funded and 42 were filled. (5) Thus, there are not only unfunded positions, but funded positions which could be filled but remain vacant. In recent years, between 30 and 40 board certified forensic pathologists are trained per year in the United States (6). In comparison, there are more than 10,000 residents per year who train in internal medicine and family practice (7). Since 1959, there have been slightly less than 2000 people who have trained in forensic pathology, and a total of about 1400 board certified forensic pathologists have been produced in the 52 years since 1959 (8). There are an estimated 500 full-time forensic pathologists in the United States, and projections suggest that 1000 are needed to provide adequate coverage in the United States (X).

Compounding the problems cited above is the fact that ACGME requirements for accredited training programs have become cumbersome, which has discouraged some training program directors’ interest in training because of the large time commitment and seemingly excessive documentation requirements imposed upon them (9). In recent years, the number of forensic pathology training programs has decreased (3).

Dropout of forensic pathologists poses another problem. Only two-thirds of forensic pathology fellowship graduates practice forensic pathology full time, and 21% end up not practicing forensic pathology at all (5). Continued exposure to violence, challenging cases with media exposure and confrontation in court, relatively low pay, and recent government cutbacks in employment have each been cited as possible reasons (5). Forensic pathologist salaries for those who are not chiefs of offices usually range between 100K and 200K per year, with few Chiefs making more than 200K per year, which is much below average physician income even for those in other specialties who have just completed training (10).

Rural areas also complicate the ability to supply board certified forensic pathologists in all areas of the country. Many jurisdictions do not have the mortality rate or tax base to fully justify and fund a forensic pathology position (11). What this means is that some areas of the country cannot attract forensic pathologists, or if forensic pathologists are available, there is only enough work for a part-time effort and the forensic pathologist must travel or serve multiple areas to make a living. This is one reason why the NRC report has recommended the development of regional medical examiner centers, which will be the topic of another SWGMDI report (1).

The salary of forensic pathology fellows varies considerably. Especially in training programs with tight medical school affiliations, salaries may be geared to PGY level which translates to a 50K-60K salary for a PGY 5 or PGY 6 trainee. Other programs have broken away from the PGY levels and have raised salaries to approximately 100K, a salary that is still not greatly attractive.
Further, without medical school support, many government based medical examiner offices lack funds to pay such salaries which precludes the establishment of a training program. Finally, recent federal deficit reduction proposals have suggested major cuts in the Medicare subsidies for teaching hospitals and residency programs, which would further aggravate the problem.

The national autopsy rate is now miserably low at about 8.5%, with only about 4.3% of disease-caused deaths undergoing autopsy (12). Many hospitals have basically abandoned the use of hospital autopsies as a method for assessing the quality of medical care and evaluation of possible adverse outcomes. This trend has continually worsened since the Joint Commission on Accreditation of Healthcare Organizations (JCAHO) dropped its requirement for hospitals to maintain a minimum autopsy rate of 20%. As a result, the majority of autopsies performed on patients who die in hospitals are now being performed by forensic pathologists within the medicolegal death investigation system on such cases as post-traumatic deaths, post-surgical deaths, and other unusual or unexplained deaths which occur in the hospital. Information obtained via such autopsies is useful for trauma death audits, medical care quality review, and other purposes which can benefit the hospital and its caregivers, but healthcare system funding to support the contribution of the medicolegal death investigation system is virtually non-existent.

Finally, there are no current incentives to encourage medical students to embark on a career in forensic pathology. There are no medical student loan forgiveness programs other than those affiliated with the military and the Armed Forces Medical Examiner. There are no such options for forensic pathologists who do not desire to be on the military payroll and the agreements that go along with that work setting.

Needs

Based on the above considerations, the following needs can be identified:

- The specialty of forensic pathology and death investigation needs to be made more visible in medical school (as does exposure to general pathology) and pathology residency curricula
- The exposure to autopsy, forensic pathology, and death investigation needs to be improved and made more positive in pathology residency programs, and non-forensic pathology faculty need to be more supportive of forensic pathology as a legitimate medical and academic discipline.
- Financial incentives need to be provided to attract medical students and pathology residents into the field of forensic pathology
- The salaries of forensic pathologists need to be made competitive with other medical specialties requiring similar years of training
- State-centered initiatives need to be developed to attract forensic pathologists to selected states
- Forensic pathology training programs need to be increased in number along with an increase in funded forensic pathology fellowship positions
- Forensic pathology training programs need to be proactive in teaching their fellows about the profession and factors such as burnout that may cause dropout from the specialty
• The ACGME requirements for training programs in forensic pathology need to be revised to better reflect the unique aspects of forensic pathology training and practice.
• Forensic pathology training programs need to have more formal relationships with medical schools and pathology departments.
• Novel mechanisms of death investigation system funding need to be developed.

The following section makes specific recommendations on how to meet each of the above needs.

Meeting the Needs (Recommendations)

1. The specialty of forensic pathology and death investigation needs to be made more visible in medical school (as does exposure to general pathology) and pathology residency curricula.

The College of American Pathologist’s (CAP) Forensic Pathology Committee and the National Association of Medical Examiner’s (NAME) Forensic Pathology Training Committee should develop a one-hour course on forensic pathology and medicolegal death investigation. This could be an on-line resource that medical schools could use in the classroom or require students to take and pass during their second year in medical school. The course would cover issues related to getting permission for hospital autopsies, general requirements for reporting cases to the medical examiner/coroner, medicolegal death investigation systems, introduction to the death certificate, the training path required to enter anatomic pathology and subsequently forensic pathology, and the types of jobs which are available to forensic pathologists. Specific forensic pathology subject matter would not be included. The Association of Pathology Chairs’ (APC) Undergraduate Medical Educators Section (UMEDS) could assist with the development and promulgation of the course. The American Association of Medical Colleges should not only endorse this project but should require medical schools to include this course in their curricula. The AAMC should also rethink its reduction in formal pathology course and lab work and reinstitute such exposure in medical school because pathology is a primary basis for understanding disease and injury relevant to all medical specialties. Further, the AAMC and organizations like NAME should work together on developing a forensic pathology mentoring program for medical students, to introduce them to the field and encourage their pursuit of forensic pathology. One such program might be for medical students to use interesting forensic pathology cases as a basis for writing a case report for presentation or publication. The same approach could be used with pathology residents.

2. The exposure to autopsy, forensic pathology, and death investigation needs to be improved and made more positive in pathology residency programs, and non-forensic pathology faculty need to be more supportive of forensic pathology as a legitimate medical and academic discipline.

The ACGME requires that anatomic pathology training programs provide exposure to forensic pathology. This requirement should be enforced. Pathology residency programs should ensure that their residents spend at least one month in a medical examiner/coroner office assisting forensic pathologists in the performance of medicolegal autopsies. The pathology department should provide a stipend to the mentors/forensic pathologists for their services if they are not on
the regular pathology department faculty. If there are no such opportunities locally, arrangements should be made with a formal medicolegal office to provide such a rotation. Pathology departments should ensure that the pathologists given responsibility for the supervision of the autopsy service do indeed have autopsy skills and are interested in autopsy performance and reporting. The same course developed for medical students should be available to pathology residents. In addition, the CAP and the NAME should develop an on-line tutorial in forensic pathology subject matter and the Association of Pathology Chairs should endorse its use and require pathology training programs to require it in their curriculum, in addition to any forensic pathology training or lectures provided by the pathology department. The specific locations available for forensic pathology training should also be provided in this course. The Association of Pathology Chairs (APC) needs to encourage faculty to be supportive of residents who are considering forensic pathology as a career. The ACGME and RRC for pathology needs to enforce its requirement to have meaningful exposure to forensic pathology during pathology residency. At present, the forensic pathology rotation is often used simply as a way for pathology residents to attain the 50 autopsies required for anatomic pathology board qualification, and in some settings, this reason may be the only one that the forensic pathology rotation exists. Without these rotations, pathology residencies would not be able to operate, and the APC needs to recognize this fact and appropriately support the forensic pathology service and faculty.

3. Financial incentives need to be provided to attract medical students and pathology residents into the field of forensic pathology.

The American Association of Medical Colleges, in conjunction with the 131 medical schools, should develop a medical school loan forgiveness program for medical students who enter pathology and forensic pathology. Loans should be deferred for a period of 10 years following completion of forensic pathology training, and if the student remains in forensic pathology practice, his/her loan would be forgiven. Each medical school would provide one medical student position per year for the loan-forgiveness program. The AAMC and Medical School Deans should seek federal support for this program, perhaps through proposed legislation such as the Leahy Bill regarding the forensic sciences.

4. The salaries of forensic pathologists need to be made competitive with other medical specialties requiring similar years of training.

The CAP and NAME should develop relationships and liaison with the National Association of Counties (NACo), The National Governor’s Association (NGA), and the National Conference of State Legislatures (NCSL) to educate them on the important roles played by forensic pathologists and medicolegal death investigation systems regarding issues related to public health, vital statistics, criminal justice, the civil courts, public safety, homeland security, the medical profession, and the wide scope of state and federal agencies and programs which rely upon information generated through death investigations. At the same time, these organizations need to be educated on the difficulties in recruiting forensic pathologists into the field, a major factor being low salaries for persons with medical degrees and advanced postgraduate training.

The numerous federal agencies which rely upon death investigation information, including but not limited to CDC, NIOSH, NHTSA, NCHS, FDA, CPSC, SAMHSA, NIJ, NIH, NDMS, NSF,
FEMA, DHS, and NTSB should collectively develop a comprehensive plan to assist states and local jurisdictions in the funding of their forensic pathology positions.

Medical Examiner and Coroner Offices should forge relationships with medical schools who could offer stipends and other benefits to forensic pathologists who are involved in medical student and pathology resident training. The ACGME, Medicare, and medical school GME Departments should work to ensure that funding of forensic pathologist positions in forensic pathology training programs have salaries which will attract well qualified individuals who also have teaching skills.

Finally, forensic pathology fellowships should not be tied to PGY level. Rather, salaries should be increased to attract pathology residents into the field. The state and federal governments should provide stipends which could augment fellow salary funding provided by medical schools, with strings attached to the funding to keep the fellow in forensic pathology practice, perhaps even within the state which provided the funding either directly or with federal assistance.

5. State-centered initiatives need to be developed to attract forensic pathologists to selected states.

Some states lack medical schools, pathology training programs, forensic pathology training programs, and an adequate number of fully qualified forensic pathologists working in the state. Such states should develop an incentive program to attract forensic pathologists to the state. For example, in a state which lacks a medical school, the state might provide a medical school scholarship to a person from the state who wishes to go to medical school (in another state) but who wishes to return to the state to practice forensic pathology. In nearly half the states, a medical student who ultimately wishes to train in forensic pathology would have to leave the state to do so. If forensic pathology training programs cannot be developed in the states which lack them, then an alternative needs to be developed to attract people to forensic pathology training and eventual practice back in the state from whence the trainee came.

6. Forensic pathology training programs need to be increased in number along with an increase in funded forensic pathology fellowship positions.

An excellent starting point would be federal assistance to fund the 25 ACGME-accredited forensic pathology training positions which currently lack funding. At a salary of $60,000 per year, including salaries and benefits, this would require approximately $2,100,000 per year. To make forensic pathology fellowship training positions more attractive, if federal support were provided to increase the salary of all 78 forensic pathology training positions to $100,000, approximately $5,180,000 would be needed per year to augment the salaries already provided by state and local governments.

Medicolegal offices which could qualify for, but lack a forensic pathology training program should be provided with state and federal incentive funds for developing a program, especially in states which currently lack a forensic pathology training program or sufficient number of forensic pathologists. Because of the one-year recruitment and training cycle which does not
correlate with most state and federal fiscal years, such assistance should not be provided through routine grant mechanisms. Rather, funding should be provided through longer term arrangements outside of the usual grant process and should be for multiple years.

7. Forensic pathology training programs need to be proactive in teaching their fellows about the profession and factors such as burnout that may cause dropout from the specialty.

Because the number of forensic pathology training positions is small and there is a shortage of forensic pathologists, forensic pathology training program directors should ensure that their interviewing of potential trainees thoroughly evaluates the candidate’s intent to practice forensic pathology and, if so, to what extent (full-time, part-time?). Further, candidates and incumbent trainees should be educated on the various factors which tend to cause dropout from the specialty (5). If trainees are educated on how to deal with these issues, burnout and dropout may be lessened which will help keep the forensic pathology work force at a maximum.

8. The ACGME requirements for training programs in forensic pathology need to be revised to better reflect the unique aspects of forensic pathology training and practice.

The ACGME and Residency Review Committee (RRC) should revisit forensic pathology training requirements. These organizations need to understand that forensic pathology is somewhat unique, the qualities needed to successfully practice differ from many other specialties, and that the patient-care focused requirements are not particularly applicable to the discipline (8). Training needs to be focused primarily on learning the forensic pathology subject matter and the skills needed to conduct medicolegal postmortem examinations. Requirements regarding the six basic competency areas should, for the most part, have already been monitored and evaluated during their pre-requisite training in basic pathology. During the training year, direct observation and supervision should be able to determine which trainees are capable of independent practice and which ones are not. Documentation and evaluations methods currently required by the ACGME should be optional methods and the fellowship year should only have to focus on subject matter and needed skills.

9. Forensic pathology training programs need to have more formal relationships with medical schools and pathology departments.

Forensic pathologists are sometimes “orphans” who have no academic parent. Especially in medicolegal legal offices that do, or want to, have forensic pathology fellowship training programs, there needs to be a formal arrangement between the medical examiner/coroner office and a medical school and pathology department. In exchange for having pathology residents and medical students rotate through a medical examiner or coroner office, medical schools should fund forensic pathology training positions and they should provide stipends to the forensic pathology staff who supervise the trainees. These should be formal arrangements with well-defined terms and conditions. The medical schools and pathology departments should provide support services to the medical examiner/coroner office such as consultations with experts, peer-support, and specialized laboratory and diagnostic services that the medical examiner or coroner office lacks. Academic relationships can further the professionalism and professional development of the forensic pathologist.
Although formal relationships with medical schools and pathology departments is beneficial to support forensic pathology practice, consideration should be given to short-cutting the training path to forensic pathology similar, perhaps to the European forensic medicine model. For example, those interested in forensic pathology might be able to have their general pathology training limited mainly to autopsy performance and pathology (gross and microscopic) rather than having extensive require training in surgical pathology, microbiology, etc. The parts of these disciplines relevant to forensic pathology could be taught as a component of the redesigned and short-cutted training path. As example, a forensic pathology training path might require a total of three years of residency/fellowship training rather than the four or five years required at present, teaching the relevant aspects of pathology and medicine during this three year interval.

10. Novel mechanisms of death investigation system funding need to be developed.

As example of novel funding mechanisms, the JCAHO should work with medical care funding sources and hospitals to ensure that hospitals whose patients are autopsied by the medicolegal death investigation system provide funding to the death investigation system for these services. In essence, there needs to be a return to the former practice of using the autopsy as a quality review procedure regarding medical care for selected types of cases such a post-trauma deaths, possible medical misadventures or adverse outcomes, and in selected cases of persons whose health care is paid for by Medicare. Insurance companies should also financially contribute to the medicolegal death investigation system. It is in their best interest to have autopsies performed in quality settings by qualified personnel.

References


6. American Board of Pathology. Tampa, FL.


10. Need reference
