

Commentary

What Every Forensic Provider Should Know that Few Academic Programs Teach

If you could change one thing to make all aspects of forensic practice better, what would it be? As forensic educators, this is not a hypothetical question. You are training the next generation of examiners, supervisors, and managers that will shape the field for decades to come.

Since forensic practice is relatively new and still lacks any uniform regulation or guidance, there is no shortage of improvements that could be suggested. Is there one change that could positively impact all forensic disciplines? I feel there is.

Over the past three decades, I have alternated between being a forensic practitioner and an academic, sometimes occupying both spaces at the same time. Moving between these two worlds has highlighted a critical deficiency in what forensic academic programs teach and what forensic practitioners need to know. In my opinion, filling that gap can transform the future of our field.

Forensic practice has had an awkward evolution. Unlike other applied sciences that grew and developed on the periphery of the traditional sciences on which they were based, forensic practice developed in a poorly regulated environment predominantly overseen by non-scientists.

Even today, forensic laboratories are rarely independent and are usually run by either law enforcement agencies or health departments. As a result, the educational background of forensic practitioners varies from a high-school degree to a terminal degree. Unlike medicine or law, there is no set curriculum that examiners must complete which makes the potential impact of students with forensic science degrees even more significant.

In 2009, The National Academies of Science (NAS) recommended that forensic laboratories be accredited and that their employees should be licensed or certified (1). Recognizing that science does not start at the laboratory door, the National Forensic Science Commission (NFSC) expanded on that recommendation to include universal accreditation of all Forensic Science Service Providers (FSSP) (2).

There are approximately 409 crime laboratories in the United States (3), but this number does not account for all agencies that have FSSPs. To illustrate this point, New York State has 22 accredited forensic laboratories (4). While there are currently no records of how many other agencies in New York have FSSPs, it is possible to make a conservative estimate. New York has 62 counties divided up into 933 towns and 61 cities. It is reasonable

to assume that the state [1], each county [57]¹ plus the top five cities by population (New York City, Buffalo, Rochester, Yonkers, Syracuse, and Albany) [5] all have crime scene units. The same assumption is reasonable for accident reconstruction units [63] and fire investigation units [63].

If we assume 20 law enforcement agencies perform latent print analysis and 20 perform digital evidence analysis, there could be over 220 agencies offering unaccredited forensic services in New York, over ten times the number of accredited laboratories.

While most forensic laboratories adopted a quality management system when the FBI mandated that laboratories had to be accredited to access the National DNA Databank, there has been no such requirement for the agencies that have unaccredited FSSPs. This has resulted in a bimodal distribution of needs and makes it difficult to cater to both audiences.

However, there is a deficiency in both groups that academic programs can address. One of the things that distinguishes humans is our ability to learn from our mistakes.

All areas of forensic practice involve complex sociotechnical systems. When something goes wrong with the work that FSSPs do, it is a unique opportunity to improve all our systems. While there are many obstacles to forensic practitioners learning from our mistakes, the most significant one is that we do not know how.

The concepts of root cause and corrective action have been incorporated into the international accreditation process since around 2005, but there has never been a requirement for laboratory staff to obtain specific training in how to do it.

Even the most rigorous academic standards in forensic science are notably weak when it comes to covering this critical material. The accreditation standards of the Forensic Science Education Programs Accreditation Commission (FEPAC) require the broad topic of "Quality Assurance" to be covered in the curriculum (standards 4.1.a & 5.2.2.a) (5), but an academic program could meet these standards without ever having addressed topics such as root cause or corrective action and few academic programs go into sufficient detail for students to fully understand these critical concepts.

This knowledge gap presents a unique opportunity for academic programs to positively influence the direction of forensic practice by training the next generation of leaders on how to learn from our mistakes.

¹ New York City is made up of five counties.

Brian J. Gestring, M.S.¹

¹4n6Services PO Box 742 Guilderland, NY 12084,
brian@4n6services.com

References

1. National Research Council, Strengthening Forensic Science in the United States: A Path Forward, National Academies Press, Washington, DC. 2009, <https://doi.org/10.17226/12589> (Accessed 28 July 2023)
2. National Commission on Forensic Science Work Product <https://www.justice.gov/archives/ncfs/file/477851/download> (Accessed 28 July 2023)
3. Publicly Funded Forensic Crime Laboratories: Resources and Services, 2014, U.S. Department of Justice and Office of Justice Programs Bureau of Justice Statistics November 2016, NCJ 250151 <https://bjs.ojp.gov/content/pub/pdf/pffclrs14.pdf> (Accessed 28 July 2023)
4. Division of Criminal Justice Services New York State (NYS) Public Forensic Laboratories Accredited by the NYS Commission on Forensic Science <https://www.criminaljustice.ny.gov//forensic/labaccreditation.htm> (Accessed 28-July-2023)
5. Forensic Science Education Programs Accreditation Commission Accreditation Standards (Revised February 12, 2022) <https://www.aafs.org/sites/default/files/media/documents/2022%200212%20FEPAC%20Standards.pdf> (Accessed 28-July-2023)