E79 Data-Driven Support for Optimal Forensic Laboratory Staffing

Paul Speaker, PhD, West Virginia University, Morgantown, WV 26505*

Learning Overview: After attending this presentation, attendees will be able to effectively use an independent, data-driven tool to determine optimal forensic crime laboratory staffing (operational, support, and administrative personnel) and the corresponding necessary annual investment in equipment to sustain a given level of casework submission.

Impact on the Forensic Science Community: This presentation will impact the forensic science community by providing the laboratory-level response to the shortfall of forensic science positions at laboratories across the nation. Attendees will be able to immediately access the free, internet-based workforce calculator to determine the optimal staffing levels for their laboratory.

The December 2019 *Needs Assessment of Forensic Laboratories and Medical Examiner/Coroner Offices* Report to Congress from the Office of Justice Programs stated that publicly funded forensic crime laboratories require " … more than 900 additional full-time employees to efficiently address current caseloads."[1] The 900-plus staffing gap represents state, metropolitan, county, and other regional laboratories across the United States (but does not address staffing needs at national laboratories). While the identification of the needs across the nation illuminates the depth of the shortage for Congress, it does not offer an indication of the specific staffing gaps at the local level. This macro level staffing shortage is translated to individual laboratory needs with a workforce calculator that was developed as a data-driven, independent assessment of laboratory staffing requirements. The use and interpretation of the workforce calculator will be demonstrated and explained in this session.

The workforce calculator is the product of a two-year timeline project commissioned by the Forensic Technology Center of Excellence. The calculator permits a laboratory to identify the personnel required to support a given level of casework within each area of investigation and the associated investment in capital equipment to support that level of activity. The first year produced an initial working tool (Beta Calculator), based upon a decade of performance of the most efficient laboratories as identified from Project FORESIGHT. In the second year, a more sustainable and more detailed econometric analysis as a long-term planning tool resulted, following practitioners reported experience with the Beta Calculator. These laboratories reported the Beta Calculator output along with their current workforce allocation across areas within the laboratory. In some cases, the laboratories indicated that the Beta Calculator output was consistent with their current allocation. In other cases, the Beta Calculator confirmed known or suspected understaffing in various areas of the laboratory.

This presentation includes a description of the underlying 12 years of Project FORESIGHT data, the efficiency criteria for laboratory data inclusion in the model's data foundation, and brief descriptions of the econometric techniques deployed. The session emphasis is a demonstration of the MS® Excel®-based calculator, interpretation of the results, and the formulation of talking points for laboratory management to present to funding bodies. The underlying Project FORESIGHT data comes from the laboratories that qualified for the American Society of Crime Laboratory Directors (ASCLD) Maximus awards for laboratory efficiency. From the laboratories qualifying for 90% or better efficiency, 19 areas of investigation are examined for the efficient level of personnel output across caseloads, and an efficient frontier of analytical output is estimated. The demonstration includes detail on accessing the Forensic Technology Center of Excellence web-based calculator. Attendees are encouraged to bookmark the calculator site and evaluate current staffing and potential growth in caseload over time and corresponding growth in staffing needs to maintain efficient analysis of that caseload.

Reference(s):

1. National Institute of Justice. *Needs Assessment of Forensic Laboratories and Medical Examiner/Coroner Offices.* Report to Congress from the Office of Justice Programs. December 2019. http://www.ncjrs.gov/App/publications/abstract.aspx?ID=279030.

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*Presenting Author