Utilization of Productivity/Performance Measures by Forensic Science Laboratories

Jeffrey D. Ban, M.S.
Virginia Department of Forensic Science, Central Laboratory, Richmond, VA 23219

Abstract

Most forensic science laboratories throughout the United States routinely experience a backlog of unanalyzed evidence associated with crime events. Because of case backlogs the courts are dismissing criminal cases, prosecutions are routinely delayed, unidentified criminals continue to walk the streets, and individuals innocent of a crime continue to be incarcerated for extended periods of time waiting for analyses to be completed. As a result it is important for forensic laboratory management to have a mechanism in place to assess and demonstrate the need for increased levels of staffing to complete testing of forensic evidence in a timely manner, and to recognize and intervene in personnel productivity/performance based matters. Therefore, it is imperative that benchmarks exist to demonstrate the need for hiring additional analytical staff and to support and address personnel performance related matters. To determine whether general industry standards currently exist within the forensic science community that measure productivity/performance, or whether the community nation wide is directed to meet established standards, a questionnaire was distributed to sixty-five (65) Forensic Laboratory Directors throughout the United States and Canada. The questionnaire asked what, if any, types of performance measures/indicators were utilized in the forensic laboratories surveyed. Responses were received from thirty-four (34) laboratories. Sixteen (16) laboratories do not utilize any type of performance measures, six (6) laboratories use a section/group type performance measure, and twelve (12) laboratories use an individual examiner type performance measure.

Category 1: No Performance Measures Utilized

Summary of Responses:
1. Thus far efforts have been made to avoid the use of any type of expectations; each case is different. Therefore, expectation cannot be placed on casework. In addition, such measures can lead to errors or the staff using shortcuts.
2. The examiners within a section are compared to each other. If an examiner's output is below the others, then the matter is handled by the supervisor, as a performance issue and is addressed in the examiner's annual review.
3. Because the examiners are required to analyze every item submitted in a case and because each case is different, no quotas have been utilized by the laboratory.
4. No performance goals have been established. It is the responsibility of the section supervisor to recognize performance issues and to handle those on an individual basis.
5. The laboratory uses a team approach. Therefore each individual has a different responsibility and it is not possible to compare one person to another or to establish a minimum expectation.
6. It is the responsibility of the supervisor to monitor the staff and to be aware of the types of cases and other duties the examiner is completing. The supervisor considers this information when completing the individual's evaluation.
7. As a rule of thumb, if an individual's case output is more than 10% below the section average, the individual will receive a below expectation rating on their annual evaluation.

Category 2: Section/Group Method Performance Measures Utilized

Summary of Responses:
1. Management is primarily concerned with the overall turnaround time of a case. Therefore turnaround time of the average cases by section is utilized as a measure of performance versus individual performance measures.
2. The DNA Laboratory does not have individual case expectations since the section operates in an assembly line fashion. Therefore, the overall turnaround time of the section is the measure that is considered by management.
3. It is not possible to have an individual case completion expectation since each case is different and has different circumstances. Therefore, the sections as a whole are considered and the overall turnaround time is what is measured and not the individual examiner.
4. Because multiple individuals are involved in the analysis of a case, the laboratory does not use individual units of measure, but instead uses performance indicators, such as:
   - Samples Complied (by person and unit) - Turnaround Time
   - Technical and Administrative Review Times - No. of Cases Unassigned
   - No. of Samples in Laboratory - No. of Samples Out of Laboratory
   - No. of Samples Still Worked and Rejected - No. of Amended Reports

T turnaround Time Ranges
<table>
<thead>
<tr>
<th>Discipline</th>
<th>Days</th>
</tr>
</thead>
<tbody>
<tr>
<td>AFIS</td>
<td>45</td>
</tr>
<tr>
<td>Forensic Botany (Screening and DNA)</td>
<td>90 - 120</td>
</tr>
<tr>
<td>Digital &amp; Multimedia</td>
<td>70 - 85</td>
</tr>
<tr>
<td>Miscellaneous DNA</td>
<td>240 - 333</td>
</tr>
<tr>
<td>Drug Chemistry</td>
<td>15 - 35</td>
</tr>
<tr>
<td>Crime Scene</td>
<td>21 - 30</td>
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<tr>
<td>Forensic &amp; Toolmarks</td>
<td>40 - 60</td>
</tr>
<tr>
<td>Alcohol</td>
<td>45 - 60</td>
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<tr>
<td>Toxicology (DDU/DUID)</td>
<td>45 - 75</td>
</tr>
<tr>
<td>Fire Scenes</td>
<td>15 - 60</td>
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<tr>
<td>Trace Evidence</td>
<td>5 - 115</td>
</tr>
<tr>
<td>Questioned Documents</td>
<td>34</td>
</tr>
</tbody>
</table>

Note: Represents the range of data reported by 8 laboratories

Point of Consideration

If a laboratory does not utilize any form of a metric to assess performance or overtime in a prospective approach measure:
1. How does the laboratory ensure that everyone is evaluated and treated consistently during the annual performance review?
2. If a staff member files a grievance associated with a performance matter, how does the agency's Human Resources Section or management demonstrate that the staff member did not meet the minimum requirement?
3. What mechanism is used to demonstrate and justify the need for additional staff?
4. In a group approach how does management ensure that each member of the team is performing up to the expectation and that others are not required to do more work to meet the goal?

Summary

The preliminary information gathered from this study has demonstrated that the forensic science industry in the United States and Canada does not have a consistent method of assessing productivity/performance of its forensic scientist/examiner/support staff. The current methods utilized vary from no productivity/performance measures to very specific number-based measures for assessing the analytical staff and for the purposes of justifying the need for additional staff.

Future Direction

The information gathered during this study has shed light on the processes used to assess productivity in some of the forensic science laboratories throughout the United States and Canada. However, because of the small pool of participants and the limited information that was gathered, there is a need for further research and discussion on this topic prior to determining if there is a common approach that can be utilized to establish reasonable expectations or guidance for assessing productivity.

Acknowledgements

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