



Guidance for OSAC Subcommittees Drafting and Updating Standards on Reports and Testimony

1. Scope

This document serves as internal guidance to subcommittees and Scientific Advisory Committees (SACs) for drafting standards related to forensic science reporting, interpretations, opinions, and testimony regarding results. It also applies to revisions of existing standards on these topics. The document aligns with the requirements of the OSAC's *Organizational Priorities and Minimum Requirements for Standards Development* but provides greater detail on the expectations for standards addressing these topics.

2. OSAC Organizational Priorities and Minimum Requirements for Standards Development

Per the OSAC's September 2021 version of the OSAC's *Organizational Priorities and Minimum Requirements for Standards Development* document, SACs and their subcommittees are expected to "facilitate the development of standards that address the reporting of results." The document further explains that these standards must specify the language used in written reports and testimony and that the language needs to be understood by the users (i.e., law enforcement personnel, lawyers, judges, and jurors). The specific items that are required within standards addressing reporting and testimony include:

- Basis for interpretations or opinions, including other information that was used
- Sources of potential bias
- Limitations (e.g., uncertainty of quantitative measurements, error rates)
- Result reporting language

In addition, the *Organizational Priorities and Minimum Requirements for Standards Development* document provides further direction concerning the development of standards related to the development of an opinion by emphasizing the need to address:

- The basis for the opinion, including what, if any, information beyond the observations, data, calculations, and interpretations that may be considered in forming the opinion
- Steps to assure that the opinion is supported by the observations, data, calculations, interpretations, and task-relevant, contextual information

The guidance provided in this document is intended to supplement the requirements provided in the OSAC's *Organizational Priorities and Minimum Requirements for Standards Development* document by providing more detail and explanations as to what is expected in standards developed on reporting and testimony of results, to include opinions.

3. Terminology

- 3.1 Result: The product of the forensic service provider. The term is broad and includes observations, data, calculations, interpretations, and opinions.
- 3.2 Observation: Recognizing and noting an occurrence.
- 3.3 Data: Information collected to be examined, considered, and used in the decision-making process.
- 3.4 Interpretation: Explanations for observations, data, and calculations.
- 3.5 Opinion: View, judgment, belief – takes into consideration other information in addition to observations, data, calculations, and interpretations.
- 3.6 Case Record: Any case-specific information consisting of materials, evidence received, and notes generated or used by the forensic science service provider (FSSP).
- 3.7 Other Relevant Materials: Other materials including SOPs, validation reports, training manuals, and other non-case specific material.

4. General Types of Reporting in Forensic Science

One challenge in writing all-encompassing standards for reporting in forensic science is that there are different types of examination requests conducted within the different disciplines. As such, some reporting requirements may not be applicable for all types of reports generated. The following is one way of demonstrating these differences.

- 4.1 Source determination/classification: Attempts to determine if there are informative links among persons, objects, processes, or locations through observations, data, calculations, and interpretations. Common examples include DNA, footwear, toolmarks, soil, paint, digital devices, or latent prints.
- 4.2 Substance identification/classification/quantitation: Attempts to determine an identity (and sometimes quantity) of an unknown substance or classify it into a limited subset of a larger population of substances through observations, data, calculations, and interpretations. Common examples include controlled substances, poisons, drug metabolites, fire debris, or explosives.
- 4.3 Crime Scene Measurements and Calculations: Observations, data, and calculations related to crime scenes. Does not involve interpretation.
- 4.4 Processing and Presentation of Evidence: Reporting of steps taken to collect, protect, process, and prepare items of evidence.
- 4.5 Specialist/Diagnostic Opinions: An opinion report that states their belief, view, or judgment that may be based on information in addition to observations, data, and calculations. When forensic pathologists, coroners, and other medical professionals provide this kind of report, it will involve observations, health history, and test results conducted on living or deceased individuals to diagnose underlying conditions, disease, and the nature of injuries to determine the cause of death.

It is also noted that reports may be either investigative (i.e., expert offers information to the investigator to an open inquiry) or evaluative (i.e., expert offers information to support or disprove a proposed hypothesis) in nature. This will impact the requirements for reporting results.

5. *Setting Minimum Requirements for Reporting of Observations, Data, Calculations, and Interpretations*

All drafted or updated forensic science standards that address the reporting of results from observations, data, calculations, and interpretations are expected to require that laboratory reports are clearly written, accurate, unambiguous, and objective. Further, these standards are expected to provide specific guidance ensuring reports of observations, data, calculations, and interpretations include or provide reference to the items noted in Table 1.

NOTE: For purposes of this document, a report may provide the materials listed in Table 1 through appendices or links to electronic materials that are immediately available to the reader.

NOTE: In instances in which items are deemed as inappropriate or not applicable for a particular discipline, the subcommittee should indicate their rationale for this within the standard itself or within the technical merit documentation that accompanies the standard.

6. *Setting Minimum Requirements for Reporting Specialist/Diagnostic Opinions*

All drafted or updated forensic science standards that address the reporting of opinions are expected to require that specialist and diagnostic opinion reports are clearly written, supported by scientific or medical data, and are based on information available at the time the report is prepared. Further, these standards are expected to provide specific guidance ensuring opinion reports include or provide reference to the items noted in Table 1.

NOTE: When the opinion is developed by the same FSSP as the results for observations, data, calculations, and interpretations, it is permissible to combine it into a single report, provided all relevant elements are included. Additionally, the opinion section must be clearly marked as such within the combined report.

7. *Setting Minimum Requirements for Testimony*

Forensic science standards related to testimony should require that the testimony be accurate, clear, transparent, and truthful.

Testimony related to the results from observations, data, calculations, and interpretations should follow the requirements set forth for reporting these results, with particular emphasis on the sections related to *Results* and *Limitations* in Table 1).

Testimony that also includes opinions should ensure that the requirements for reporting such opinions, particularly regarding sections related to *Specialist/Diagnostic Opinion* and *Underlying Information Relied Upon to Form Opinion* in Table 1.

Table 1: Required Information for Reports, Case Files, or to Ensure Availability through Other Means

Items required in reports of observations, data, calculations, and interpretations ¹	Items required in reports of specialist/diagnostic opinions ¹	Additional items required to either be included in reports of results or opinions, in the case file, or available through other means ²
Administrative Information:		
<ul style="list-style-type: none"> • Name, address, and contact information of the FSSP • Requester's name (as applicable) • Any unique case identifier assigned (e.g., requester case number) • Unique identification of the test report (e.g., laboratory number) • Location where the tests were carried out, if different from the FSSP's address • Date of report • Date of receipt of test items • Unambiguous descriptive identification of all items sampled, examined, or tested • All relevant requests made to the unit within a FSSP, including those that were not conducted or completed; • Indication when the report contains results performed by subcontractors • Indication when the report contains preliminary results, supplemental results, or amends an earlier report • Statement that makes it clear that the report does not contain all documentation associated with the work performed (e.g., "Supporting documentation is maintained separate from this report and is necessary for independent evaluation of the work, interpretation of the data, and drawing of conclusions.") • Disposition of evidence (e.g., additional examinations pending, evidence transferred, evidence consumed, returned to contributor, retained) • Disclosure statement in the event the FSSP is not accredited in the discipline reported on, or the procedure used is outside their scope of accreditation • Page numbers on each page with an indication of the total number of pages for the report 	<ul style="list-style-type: none"> • Name, address, and contact information of the FSSP • Requester's name (as applicable) • Any unique case identifier assigned (e.g., requester case number) • Unique identification of the opinion report (e.g., laboratory number) • Date of report • Indication when the report contains results performed by subcontractors or consultant • Indication when the report supplements or amends an earlier report • Page numbers on each page with an indication of the total number of pages for the report • Names of person(s) responsible for the opinions • Printed name of verifier, if applicable; and • Printed name of technical reviewer. Otherwise indicate "none" or provide an explanation as to why a technical review was not done. 	<ul style="list-style-type: none"> • Manner of receipt of test items (e.g., FedEx, hand delivery) • Descriptive identification of all items received • Any abnormal conditions of test item(s) upon receipt • Name(s) of person(s) responsible for observations, data, calculations, and interpretations in the report • Name, address, and affiliation of each person who generated data contained in the report • Dates that observations, data, calculations, and interpretations were made • Chain-of-Custody • Log of communications related to the case • Name of verifier and date of verification of results, if applicable • Name of all reviewers and dates of review. Otherwise indicate "none" or provide an explanation as to why a review was not done • Final disposition of evidence (e.g., evidence consumed, returned to contributor, retained)

¹ For purposes of this document, a report may provide the materials listed in Table 1 through appendices or links to electronic materials that are immediately available to the reader.

² Other means may include discovery requests, public record requests, or public-facing electronic media.

Items required in reports of observations, data, calculations, and interpretations ¹	Items required in reports of specialist/diagnostic opinions ¹	Additional items required to either be included in reports of results or opinions, in the case file, or available through other means ²
<ul style="list-style-type: none"> ● Printed name, title, and signature of author of report and date of signature ● Printed name of verifier, if applicable ● Printed name of technical reviewer. Otherwise indicate “none” or provide an explanation as to why a technical review was not done. 		
<i>Results:</i>	<i>Specialist/Diagnostic Opinion:</i>	<i>Results:</i>
<ul style="list-style-type: none"> ● Scope or purpose of the work being reported ● Statement of what was tested or observed ● Summary of method(s) used ● Disclosure statement in the event of non-conformities in the performance of the analysis that includes an indication of how the nonconformities were resolved or, if in progress, provide the status ● Summary of pertinent equipment used to include measuring instruments ● Summary of pertinent (as defined by subcommittees) computing hardware; operating system; databases; and software used ● Description of sampling plans used (if applicable) ● Documentation of disagreements between analysts occurring during verification and review that require mediation through laboratory protocols regarding the final reported results ● Interpretations of data, observations, and calculations reported in accordance with discipline-defined language (see Section 8a) ● Clear description of what is meant when the results are deemed unsuitable for comparison, inconclusive, or uninterpretable 	<ul style="list-style-type: none"> ● Statement clearly explaining that the report is an opinion report ● Specialist/diagnostic opinion statement; ● Documentation of disagreements between analysts occurring during verification and review that require mediation through laboratory protocols regarding the final reported opinion 	<ul style="list-style-type: none"> ● Description of all pertinent data, observations, statistics, or results in sufficient detail for independent expert review ● Documentation of all features relied upon when making an association ● Documentation of substantive consultations (as defined by subcommittees) and disagreements between analysts occurring during verification and review regarding the reported results/opinions that were resolved between the disagreeing parties without mediation ● Description and justification for any re-analysis, changes to data, or changes to interpretations for evidence items made after initial testing of the evidence and comparison of data or features to a known or reference ● Record of any features that were not identified in the initial examination of evidence that are subsequently identified after comparison to a reference sample ● All calculations
<i>Limitations:</i>		
<ul style="list-style-type: none"> ● Method performance limitations (e.g., uncertainty of all reported quantitative measurements, established repeatability and reproducibility metrics, accuracy metrics, error rates) with references. The subcommittees are 		<ul style="list-style-type: none"> ● Explanation of or justification for any deviations ● Relevant internal validation summaries ● Any other common discipline-specific limitations that are likely to impact the data, observations, or results (see Section 8b)

Items required in reports of observations, data, calculations, and interpretations ¹	Items required in reports of specialist/diagnostic opinions ¹	Additional items required to either be included in reports of results or opinions, in the case file, or available through other means ²
<p>expected to determine which performance characteristics best describe each method and technique.</p> <ul style="list-style-type: none"> • Disclosure of the absence of citable empirical measures of performance • Disclosure of deviations in the FSSP's analytical SOP, normal test procedure, quality assurance procedures, or from a published method; • Disclosure of any abnormal environmental or sample conditions that may impact the results • Limitations of databases (e.g., size, representation), if used 		
<i>Underlying Information Relied Upon to Form Opinion:</i>		
	<ul style="list-style-type: none"> • Summary of data, observations, calculations, interpretation, investigative activities performed, and other information reviewed to develop the reported opinion • Statement that makes it clear that the opinion report may be subject to change based upon new information that becomes available 	<ul style="list-style-type: none"> • References consulted in forming the opinion

8. *Defining Discipline-Specific Language, Limitations, and Unacceptable Practices for Reporting and Testifying to Results*

8.1. Discipline-Specific Language for Reports and Testimony

Whenever possible, the language used in reports and testimony should rely on plain language and apply terms in a way that is consistent with their ordinary meaning. Specialized definitions of common terms should generally be avoided.

Each discipline should develop standard terms, definitions, and language deemed acceptable by the field for how interpretations of observations, data, and calculations are stated. Each common type of interpretation should include a clear description of the meaning of evaluative terms, as well as terms such as “unsuitable”, “inconclusive”, or “uninterpretable”.

8.2. Discipline-Specific Limitations for Reports and Testimonies

Each discipline should develop standard descriptions of common limitations of the procedures used in the field that are likely to impact interpretation of data, observations, results, and opinions.

8.3. Known Discipline-Specific Practices and Language Viewed as Unacceptable Practices in the Field

Each discipline should develop discipline-specific language for known or identified practices that are viewed as unacceptable for the field to discourage their use.

8.4. Disclaimers Related to Discipline-Specific Language, Limitations, and Unacceptable Practices to Include in Report Writing and Testimony Standards

To avoid excessive rigid application of standard language and practices, inclusion of disclaimers, such as the examples offered below, is permissible in standards that express discipline-specific acceptable and unacceptable language, limitations, or unacceptable practices:

8.4.1. “This standard does not necessarily imply that terminology, definitions, or testimony provided prior to its effective date that may differ from that set forth within this document was erroneous, incorrect, or indefensible.”

8.4.2. “This document does not address every contingency that may occur during testimony. For example, it does not cover situations in which a witness cannot comply fully with the requirements of this document while testifying because of court rulings or legal rules in the jurisdiction.”