5 Evidence Evaluation and Handling

The Biology section provides body fluid identification (semen and blood) and performs the collection and preservation of trace evidence and possible contact DNA evidence.

5.1 Case Acceptance and Evaluation

Refer to the Quality Manual for procedures regarding the submission of evidence into the HPD Crime Laboratory. Before a case is worked, the case and the requested examinations will be evaluated. The examiner should be aware of the requested examinations, and when possible, the reason(s) for the requested analyses and the quality and quantity of the evidence.

In order to expedite casework, with the exception of sexual assault kits, it is recommended that 5-10 items of evidence should initially be screened for cases containing large volumes of evidence. Emphasis should be placed on those items believed to be of the most significant evidentiary value after consultation with the submitting party. Of the items screened, it is recommended that a maximum of 5 items of evidence continue on to DNA analysis initially. Additional items may be analyzed at a later time. Individual case needs may dictate that the initial quantity of examined items is greater than the recommended range presented above.

When submitted in conjunction with a sexual assault kit, clothing evidence does not typically have to be examined if the kit components yield sufficiently positive samples. ("Sufficiently positive" is fluid and relevant to the case information.) Clothing should be examined if the corresponding sexual assault evidence kit does not reveal any positive probative evidence, if there are multiple suspects, or there is a recent consensual sexual partner. Good judgment using the case information and/or the client's specific requests should always supersede this guideline.

5.2 Evidence Handling

It is not possible to anticipate every situation that may arise or to prescribe a specific course of action for every case; therefore, the examiner must exercise good judgment based on experience and common sense. In some cases, the manual offers guidelines for analysis that must be tempered with the experience of the examiner. However, any portion of a procedure not explicitly qualified as a guideline may not be modified for use in casework without prior written approval as outlined in the Quality Manual.

Universal Precautions

Body fluids and extracts may contain infective agents. All analysts should routinely use appropriate barrier precautions to prevent skin and mucous membrane exposure when in contact with any body fluids. Gloves should be worn and changed after contact with each piece of evidence. Masks, lab coats, and protective eyewear should be worn during procedures that anticipate contact with body fluids to prevent exposure of mucous membranes of the mouth, nose, and eyes. All analysts should take precautions to prevent injuries caused by scalpels or other sharp instruments or devices during procedures, when cleaning, or during disposal. After sharp instruments are used, they should be placed in a puncture-resistant container for disposal.

Evidence Requiring Latent Print Examination

Submitting parties may request that items be analyzed for latent prints as well as biological material. In general biological evidence examinations precede any latent print examination. Appropriate steps should be taken, including consultation with the submitting party and/or a latent prints examiner, to ensure the appropriate course of action for the evidence presented. In some cases, it may be best if one type of examination is chosen over another. If an analyst finds a distinct print during examination, appropriate steps should be taken to preserve the print and inform the officer.

Storage of Evidence

Biological evidence must be properly stored to preserve biochemicals assayed in body fluid identifications and DNA typing for current and future analyses. Storage conditions for all types of evidence present must be considered so that the evidence is not compromised. In addition to the storage requirements detailed in the Quality Manual, the following procedures will be followed:

Sexual assault kits may be stored in a cooler, freezer, or dry area at room temperature once received in the laboratory. After analyses, sexual assault kits may be stored at room temperature. Sexual assault kits that contain blood or urine specimens are ideally stored in a refrigerator.

When applicable, wet evidence should be dried upon receipt. Refrigerate or freeze liquid whole blood specimens until a sample is dried on an appropriate substrate; be careful when frozen blood has thawed, as it may expand and cause vial breakage. Portions of blood standards submitted in liquid form should be dried on stain cards within 30 days of receipt by the assigned analyst. Once the sample is in dried form, the liquid blood tube will be placed back in its original packaging and returned to the property room.

Cases containing small, dry items may be stored at room temperature or frozen depending on available space. Larger items such as clothing, bedding, weapons, and other physical evidence containing bloodstains should be stored in a dry area at room temperature until examination.

Consumption of Evidence

The evidence's quality and quantity will be preserved as much as possible without sacrificing the quality of the analyses. Good judgment must be exercised to determine the smallest amount of sample that should be consumed for analysis that will still provide accurate results. Whenever possible, at least half of the evidence sample will be preserved for possible re-analysis (for both additional screening and additional DNA analysis). When this is not possible, the appropriate personnel (submitting officer, prosecuting attorney, and/or defense attorney) will be consulted and written permission will be obtained before the evidence is consumed. All evidentiary hairs are treated individually and cannot proceed to DNA analysis without consumption permission.

Chain of Custody

Refer to the Laboratory Quality Manual for chain of custody policies and procedures.

Reference Samples

Whenever possible, reference samples should be collected and retained from suspects, complainants, witnesses, consensual sex partners, and/or other individuals for the purposes of elimination. Oral swabs are the preferred reference sample for the HPD Crime Laboratory, but blood is certainly a viable source of reference material. Anecdotally, Sexual Assault Nurse Examiner (SANE) protocol dictates that evidentiary oral swabs are not only collected well before reference/known saliva swabs, but also after oral rinsing to help prevent possible foreign DNA from contaminating a reference/known saliva sample.

Potential for Contact DNA

Should contact DNA potentially be probative in a case, it is permissible for the examiner to bypass certain procedures that could possibly remove contact DNA that may be present. For example, an examiner may choose to skip the presumptive Acid Phosphatase press-out test and simply portion for the confirmatory microscopy examination in an effort to preserve potential contact DNA, if both penile and digital penetrations are alleged. Examiners may also choose to skip serological analysis entirely in an effort to maximize the available DNA. Case records must clearly document when and why a routine procedure such as the acid phosphatase or phenolphthalein press-out test is not performed.