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Case Management Manual

Version 1.0

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I. Introduction

The Department of Forensic Biology develops information through the identification and individualization of physiological fluids such as blood, semen, and saliva. In addition to being a powerful courtroom aid, this information can aid in the investigation of a crime or suspected crime, identify bodies or body parts, identify pattern cases, help tie a victim or suspect to a crime scene, or eliminate a suspect.

It is the aim of the Department of Forensic Biology to perform DNA profiling on as many cases as possible; the DNA profiling system chosen depends on the type of case. Cases are analyzed for court, investigative, and/or databank purposes.

A. Types of cases accepted by the Department of Forensic Biology

1. Homicide cases are given FBxx- numbers, where xx is the year.
2. Sexual assault cases may be given FBxx- numbers or FBxx-B numbers, where the B designates "backlog" cases from 1997 and earlier.
3. Assaults, robberies, and other miscellaneous cases are accepted only with prior approval by the Director, an Assistant Director, or a Criminalist IV and are given FBxx- numbers.
4. Blood or other exemplars from suspects in pattern cases are given FBxx-S numbers, where the S designates suspect cases.

B. PCR DNA tests available for use

Quad	VWA, F13A1, THO1, FES/FPS
AmpFISTR Blue	D3S1358, VWA, FGA
AmpFISTR Green	Amelogenin, THO1, TPOX, CSF1PO
Cofiler	D3S1358, D16S539, Amelogenin, THO1, TPOX, CSF1PO, D7S820
Profiler Plus	D3S1358, VWA, FGA, Amelogenin, D8S1179, D21S11, D18S818, D5S818, D13S317, D7S820
Y M1	DYS19, DYS389I, DYS389II, DYS390

The combination of Cofiler and Profiler Plus contains all thirteen CODIS core loci.

C. DNA databanks

The Department of Forensic Biology maintains a local DNA databank (LDIS) of DNA profiles generated during the analysis of cases, mostly from 1997 and 1998. The DNA profiles of evidence samples different than the victim are entered by the Assistant Directors at the time of report review. Currently, the OCME local DNA databank is based on Quad typing results, with many of the DNA profiles containing additional loci as well.

The local DNA databank does not contain DNA profiles from convicted offenders, but does contain DNA profiles from suspects identified during the investigation of offenses. Each suspect DNA profile is compared to every evidence DNA profile in the databank.

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For a DNA profile to be accepted into SDIS (State DNA Index System), there must be typing data at six of the thirteen CODIS loci.

For a DNA profile to be accepted into NDIS (National DNA Index System), there must be at least an attempt to obtain typing data at all thirteen CODIS core loci.

D. Scheduled analysis

The best use of limited evidence requires that information about the case be available. Such information as whether suspects were injured or victims transfused can help guide the analysis of evidence. Often, this may require the submission of additional evidence such as blood standards from suspects, witnesses, consensual sex partners, or an injured, living, victim.

In addition, it may be necessary for other types of examinations to be done before an item is examined in the Department of Forensic Biology. Fingerprint processing, gun shot residue, hair and fiber examinations, etc., may be equally or more important than the presence of biological fluids.

Depending on the case, scheduled analysis can range from determining only the presence of semen, saliva, or blood on an item to DNA analysis of stained items for comparison with victims and/or suspects. The decision of what analyses are to be performed is made by a Criminalist IV after evaluation of the evidence through review of the NYPD paperwork (vouchers, requests for laboratory examinations, and NYPD reports), discussions with detectives, and/or discussions with assistant district attorneys. In general:

1. Homicide cases are analyzed for **court, investigative, and/or databank purposes**.

Samples are extracted and typed in Quad and compared to the local DNA databank. Generally, representative samples would then be typed in additional DNA systems. Samples with DNA profiles that DO NOT match the victim get Y STR's for databank purposes.

2. Sexual assault cases with suspects are analyzed for **court, investigative, and/or databank purposes**. Analysis begins with the sexual assault kit; if the kit is positive for semen any other submitted items are generally not examined. If the sexual assault kit is negative, other submitted items will be examined.

A semen-positive sample gets extracted by differential extraction, typed in Quad, and compared to the local DNA databank. Generally, representative samples would then be typed in additional DNA systems. Samples with DNA profiles that DO NOT match the victim get Y STR's for databank purposes.

3. Sexual assault cases with no suspect that are thought to be part of a pattern case are analyzed for **investigative and/or databank purposes**. Analysis begins with the sexual assault kit; if the kit items are positive for semen any other submitted items are generally not examined. If the sexual assault kit is negative, other submitted items may be examined,

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depending on the case and relevance of the evidence.

A semen-positive sample gets extracted by differential extraction, typed in Quad, and compared to the local DNA databank. Generally, representative samples would then be typed in additional DNA systems. Samples with DNA profiles that DO NOT match the victim get Y STR's for databank purposes.

4. Sexual assault cases without suspects, that do not appear to be part of a pattern case, are analyzed for **investigative and/or databank purposes**.

A semen-positive sample generally gets extracted by the non-differential one-step extraction, typed in Y STR's, and compared to the Y STR databank. This saves time and allows many samples to be extracted simultaneously.

5. Assault cases are analyzed for **court, investigative and/or databank purposes**.

Samples are extracted and typed in Quad and compared to the local DNA databank. Generally, representative samples may then be typed in additional DNA systems. Samples with DNA profiles that DO NOT match the victim get Y STR's for databank purposes.

6. Suspect bloods (or other samples submitted as exemplars) are being analyzed for **court, investigative, and/or databank purposes**.

Exemplars are extracted and typed in Quad and compared to the local DNA databank. The exemplar generally would be typed in additional DNA systems including Y STR's.

E. Target dates

Target dates are assigned by the Criminalist IV based on the available information. Sexual assault kits should have a target date of 7 days for semen screening; blood exemplars should have a target date of 7 days for processing. DNA typing of homicides and sexual assaults generally has a target date of 90 days; the target date for assaults in generally 120 days. *Shorter target dates may be necessary to meet court dates or investigative needs.*

Regardless of the target date, a report should be written and submitted to a supervisor for review no later than seven days after the last analytical results are available. Each supervisory level has an additional seven days for review of the case and forwarding to the next reviewer.

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II. Case files - documentation

A case is assigned to a Criminalist for evidence examination. Generally, the Criminalist becomes the Interpreting Analyst for that case and is responsible for case management: ensuring the evidence gets examined, samples are submitted for body fluid identification and/or DNA analysis, evaluating the analytical results as they are generated, interpreting the analytical results, writing the report, and testifying in court.

A. Case files - general

There is one case file per incident, which usually means one case file per victim. Exceptions include *multiple crimes* (more than one homicide, sexual assault, or assault at a time); for example, a double-homicide is still one incident, so there would be a file with two victims. *Serial crimes* (more than one homicide, sexual assault, or assault but over a period of time) have individual case files per victim. Each incident has a unique FB (Forensic Biology) number, and all evidence associated with the victim(s) will use the same FB number.

1. The following are clipped to the left-hand side of each file:
 - a. Chain of custody forms, documenting:
 - evidence received and released
 - analysis of DNA extracts
 - b. Copies of NYPD paperwork: evidence vouchers (documentation of evidence collected), request for laboratory examination forms; 61 form (NYPD complaint report).
 - c. Copies of sexual assault kit paperwork.
 - d. Miscellaneous correspondence, such as memos to and from outside laboratories.
 - e. Case contact forms, documenting:
 - basic information on the victim (and suspect, if applicable)
 - discussions with detectives, attorneys, or others
 - f. Scheduled analysis form, documenting:
 - what items are to be analyzed and in what manner
 - target date, review dates, etc.
 - g. Forensic Biology laboratory reports.

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2. The following are clipped to the right-hand side of each file:

- a. Autopsy case worksheet, if applicable.
- b. Handwritten notes, worksheets, and photos documenting the evidence examinations.
- c. Worksheets documenting the analyses performed.
- d. Case productivity worksheets for serology and DNA examinations.
- e. The case productivity worksheets which document the:

total number of examinations and tests for laboratory statistical purposes
quality control numbers of reagents used in the testing.

For each piece of evidence examined there **must** be an entry in the productivity sheet, even if no tests were performed (for example, a shoe with no stains). Whether an actual analysis is performed it takes time to examine the evidence and each examination represents, for statistical purposes, a test. The total number of tests must be summed from all summary sheets used and entered as well.

The case productivity worksheets are not intended as a summary of the analytical results and test results should not be indicated here.

The quality control (QC) numbers associated with each test must be noted in the appropriate place. For DNA tests, the QC numbers (lot numbers) are located on individual worksheets and do not need to be recorded onto the productivity sheet.

The number of standards and controls also must be counted. The following should be counted in this group:

Positive and negative controls for presumptive tests, confirmatory tests, and
DNA extraction, amplification, and typing
Standards for protein electrophoresis
Substrate controls from evidence

All information regarding a case, including records of phone conversations, must be kept in the case file, in a neat and organized manner. If a case file becomes very large, divide it into separate file folders, labeled "1/2", "2/2", etc. Often, this occurs when extensive DNA testing or crime scene reconstruction is done on a case; the separate file folders can hold the different types of analyses done.

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3. Casefiles should be organized in a logical format; this generally does not mean chronological. A common format would be:

- blood processing

- examination of evidence

- P30 ELISA and/or amylase

- DNA extraction, amplification, and typing of evidence

- DNA extraction, amplification, and typing of exemplars

- PCR statistics worksheets

- QuantiBlot worksheets (in chronological order)

- serology and DNA productivity worksheets

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B. Case files - suspect files

Blood or other exemplars from suspects in pattern cases are analyzed separately, since they may be associated with more than one victim. The file is arranged as described above, and contains all the handwritten notes, worksheets, etc. for the analysis of the exemplar. These results stand alone and do not need to be included in any other casefiles.

If the suspect does not match any previous cases, a report is written stating that. If the suspect does match previous cases, a report is written listing all the matching cases along with a summary of the analytical results from the previous cases.

C. Case files - pattern cases

When a pattern is established, through DNA typing or NYPD investigation, a pattern file is created. The pattern file is given the NYPD pattern number (e.g., M 2-98) as well as the common name, if there is one (e.g., "Silver Gun Rapist"). It contains information about cases thought to be part of the pattern, cases confirmed to be part of the pattern, suspects that have been tested and eliminated, pattern case contacts, and copies of reports from all cases thought or known to be associated.

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III. Evidence examination - notetaking, evidence examination, and packaging

A. Notetaking - general guidelines

Notetaking and evidence documentation is the most important aspect of casework. Done improperly, it can jeopardize any analysis that follows. The notes are used to document the condition of the packaging and evidence, describe stains that may be found, present the results of presumptive and/or visual tests, support the conclusions of the report, and refresh the analyst's memory when required to testify in court.

1. Each page, including handwritten notes, worksheets, and electropherograms, **must** have on it the following information:

case number

date

initials of the analyst examining the item or performing the test

page number (at the bottom)

In addition, the paperwork on the left hand side of the file must have the case number and initials of the analyst.

2. Notes should be legible and organized. If a mistake is made, draw a single line through the error and initial and date the correction. NEVER obliterate, including using "white-out", any notes or entry in a worksheet.
3. Notetaking starts with a description of the evidence, beginning with the packaging; a packaging worksheet is available to document this.
 - a. Type of package - paper bag, manila envelope, zip-loc bag, etc.
 - b. Condition of package - wet, bloody, etc.
 - c. Type of seal - stapled, taped, unsealed. If an item is not properly sealed, bring it to the attention of the person who signed it in.
 - d. Identifying marks - labels, tags, handwritten notations
4. Each package **must** be marked by the analyst with the case number, item number, date, and analyst's initials. Finding the marks in court is easier if the analyst always chooses the same location to put his or her marks.
5. Each item of evidence **must** be marked by the analyst with the case number, item number, date, and analyst's initials. Marking may be done by affixing a tag with the information or by writing directly on the item.
6. Next is a description of the contents, the evidence itself. Specific suggestions concerning different types of evidence will be discussed later.
7. Standardized worksheets are available with diagrams of pants, shirts, shoes, etc., to aid in documenting staining patterns. If a diagram must be hand-drawn, make sure it is large

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enough to allow room to document all of the stains present. It is preferable to have only one diagram per page.

Digital, 35 mm, or Polaroid photography may be substituted for diagrams. Each photograph **must** have a ruler visible in the frame, either a plain straight ruler or an x, y axis ruler.

8. Each stain **must** be given a unique identifying number, clearly shown in the notes. A standard approach should be taken:
 - a. An item listed as item 1 on the voucher should be item 1 in the notes. The first stain removed from it is stain 1A, the second is stain 1B, etc. A substrate control (if taken) is 1SC.
 - b. If there are several items submitted as one, give them all individual identifiers. For example, on a voucher, socks were identified as "item 1". Upon opening the package, there were three; they should be given the identifiers 1A, 1B, and 1C. The first stain removed from sock 1A is stain 1A-A, second stain 1A-B, etc. Alternatively, the stains could be designated as 1A-1, 1A-2, etc.
 - c. If there are items submitted that weren't included on the voucher, they still must be examined. Give the item the next item number.
 - d. If upon opening items it was discovered that the description on the voucher was incorrect (for example, a tank top was submitted, but the voucher says "T-shirt"), use the correct description in your notes and subsequent analyses. Do not perpetuate the mistake.

Each stain **must** be marked by the analyst. Marking may be done by affixing a tag with the information or by writing directly on the item.

9. For further analyses, such as species determination and DNA analyses, make use of worksheets. Make sure all worksheets are filled out completely and legibly. If there is any deviation from the written protocol, it must be noted.

For most tests, original worksheets are stored in a central location; photocopies are supplied for each casefile.

10. When all the analytical work is completed, place page numbers at the bottom of the pages on the right-hand side of the file, beginning with the bottom page in a file. The last pages, the productivity worksheets, will have the highest number and be on the top.

It is recommended that the numbering also reflect the total number of pages, by using the format "1/51", where 51 is the total number of pages.

When additional analyses are done after a report has been issued, continue the page numbering. Do not start over with page one.

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B. Preparing for the examination

Before examining evidence, certain preparations should be made:

1. Review the "Scheduled Analysis" section of the case contact/control form; this section outlines the examinations requested by the supervisor.

Review all the information provided in the case file. This includes the case contact form, vouchers, requests for laboratory examination, any previous laboratory reports, and police reports. If further information or clarification is needed, obtain it before beginning analyses.

2. Plan your approach to the case. Certain items may have greater potential information value than others, or may need to be analyzed first as an investigative aid.
3. Prepare the work area. The bench must be clean and free of clutter. The work area should be covered with paper to prevent the loss of small particles of evidence and to prevent the cross-transfer of materials from one item to another. Change the paper when a new case is begun, between different types of evidence within a case (such as between victim's and suspect's belongings), or when necessary.
4. Make sure the necessary tools and reagents for the examination are conveniently located, that there is adequate lighting available, and that notetaking materials are at hand to record your observations. Also make sure that all reagents used have passed QC and have not expired.
5. Prepare yourself with lab coat, gloves, and any other necessary safety items.

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C. Evidence examination - general guidelines

The examination of objects will be described in a general sense, covering a broad range of topics applicable to most items of evidence.

NOTE: All cutting utensils, tweezers, etc. must be cleaned with ethanol before and after each use. Gloves should be changed between each item.

1. Examine one item at a time.

If it is known that an item still requires trace evidence examinations, place an additional sheet of thin (newspaper weight) paper on top of the regular paper prior to opening an item of evidence. When done examining the item, wrap it up in the thin paper and place the entire bundle back into the original packaging. Any trace evidence that was dislodged from the item will be retained by the thin paper.

2. Be certain that the previous item has been re-packaged before opening another item on the work surface.
3. Open the packaging. Avoid breaking existing seals when possible.
4. Remove packaging with care. Remember, materials of evidential value may adhere to the item and/or the packaging. Opening the evidence over the paper will prevent the loss of these materials.
5. If an item of evidence is found to be wet when opened, the item should be allowed to air dry. The item should not be heated or exposed to direct sunlight. If the item has become foul smelling, allow it to dry in the hood with the fan running.
6. Each item **must** be marked with identifying case information, either by affixing a tag with the information or by writing directly on the item.
7. At this point, a visual inspection should be conducted. It may be necessary to use a high intensity light source, UV light source, or alternate light source during the inspection, especially if semen or saliva is suspected. Magnification may be necessary.
8. A tactile examination is sometimes helpful for locating some biological stains, notably seminal stains. Using gloved fingertips, lightly brush over the surface of the object, feeling for changes in surface texture or stiffness.
9. Remove any easily visible surface debris such as hairs, fibers, wood fragments, etc. and package. The location on the item of all trace evidence removed should be documented by diagram and/or photography.
10. All stains **must** be documented by diagrams and/or photography. Note the location of the stain, size, heaviness (soaked into fabric, surface smear, etc.), and any directionality of the stain pattern. Each photograph **must** have a ruler visible in the frame, either a plain straight

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ruler or an x, y axis ruler.

If stains do not exhibit directionality, note that as well.

Perform the appropriate presumptive tests on the stains.

11. A substrate control should be selected from each item, if possible; it should be collected as close to the stained area as practical. If an item has stains on more than one substrate (for example, stains on pant leg and in the pocket), select more than one substrate control. Its location should be documented in the same way as stained areas.

The substrate controls are retained for possible further testing. A presumptive test may be performed, if desired; do not submit the substrate controls for further testing.

The substrate control may be used to investigate the possibility of background effects of the substrate, if subsequent DNA typing results of the stain make it necessary.

12. Cut, scrape, or swab the stain and substrate control from the evidence item and place in individually labeled envelopes. Small items may be kept in their entirety. It is most time-effective if all stains and substrate controls are collected at the time of evidence examination, rather than returning at a later time.

When swabbing an area, the number of swabs collected must be recorded and each swab given a unique identifying number. Refer to the unique number when analyzing the swab.

13. When finished examining an item of evidence, it must be packaged for return to the Evidence Unit following the current evidence return guidelines. The original packaging must be sealed, the original voucher (or copy with Property Clerk storage number) is attached and the items signed over to the Evidence Unit.

Samples that are actively being tested are maintained in the custody of the analyst until the case is completed. At that time, retained samples, items that have been analyzed but are to be kept in the laboratory, must be properly sealed before being put into storage. The packaging must be sealed, dated, and initialed.

Each time a retained sample is removed for analysis, the retained sample package must be opened and re-sealed according to Departmental guidelines and the chain of custody filled out.

14. Unless there is case information to the contrary, all samples will be processed as if DNA typing is to be performed.
 - a. For possible blood stains, testing positive with a presumptive test for blood, a portion of the stain or swab is submitted immediately for DNA extraction.
 - b. For possible semen samples, a portion of the stain or swab is submitted for P30 ELISA.
 - c. For possible saliva samples, a portion of the stain or swab is submitted for amylase

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testing.

15. If a sample is positive for P30 or amylase, a portion of the stain or swab is submitted for DNA extraction.

If a sample is negative for P30 or amylase, but the facts of the case indicate a condom may have been used, a portion of the swab should be retained for future testing.

16. To prepare samples for DNA extraction, label microfuge tubes with case number, sample identification, and your initials. Open one microfuge tube at a time with a Kimwipe and add one of the following:
- a. blood - portion of bloodstain or swab about 3 mm square, enough scrapings to give a light straw colored extract, or 3 μ L whole blood
 - b. semen - portion of semen stain about 5 mm square, one third of a swab, or 3 μ L of whole semen
 - c. amylase - portion of sample or swab about 3 mm square

Transfer the microfuge tubes containing the samples to the Chelex extraction refrigerator; add the information to the appropriate extraction worksheet (exemplars, bloodstains, semen stains, or one-step).

When handling each sample:

- a. Use a clean cutting surface for each sample, such as a Kimwipe.
- b. Use clean scissors for cutting each sample.
- c. Use Kimwipes to open sample tubes and blood tubes.
- d. Try not to consume more than 75% of the sample, when possible. Samples may not be consumed in their entirety without prior notification and agreement of the prosecution and defense attorneys; a letter stating this is preferred but a phone conversation is adequate.

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D. Evidence examination - weapons

Weapons are frequently submitted for bloodstain or tissue examinations. Be aware that latent prints may be present on the weapon. That possibility should be discussed with the detective handling the case, and a decision made whether processing for prints should be done prior to examinations by the Forensic Biology laboratory.

Weapons can consist of knives, guns, bottles, baseball bats, and numerous other items. Be aware that blood and hairs can flake off from a non-porous surface quite easily.

Weapons should be thoroughly described and examined. Follow the general guidelines for notetaking and evidence examination when examining any weapon.

Firearms must be unloaded and handled safely. If you are unsure about how to handle a weapon, see the Evidence Examination supervisor.

1. Describe the general condition of the item, such as presence of rust or fingerprint powder.
2. Measure the physical dimensions of the item. In the case of a knife, this should include description of knife blade such as thickness, shape, cross-sectional shape, length, width, number of blades, brand names, etc. Trace and/or photograph the knife.
3. If necessary, examine under a magnifier or stereomicroscope for traces of fibers, hairs, blood, or other materials of evidentiary value. All trace evidence removed should be documented in the notes using either diagrams and/or photography.
4. Look carefully for directional spatters of blood on weapons. Discuss any directional stains with a supervisor before performing any analyses.
5. Knives, sheaths, or other weapons may be dismantled as necessary for further examination. Always photograph or diagram the intact items before dismantling.
6. All stains **must** be documented by diagrams and/or photography. Note the location of the stain, size, heaviness (soaked into fabric, surface smear, etc.), and any directionality of the stain pattern. Each photograph **must** have a ruler visible in the frame, either a straight ruler or an x, y axis ruler.

If stains do not exhibit directionality, note that as well.

7. After examining a knife or other sharp object, package it in a safe manner for return to the Evidence Unit.

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E. Evidence examination - clothing

Clothing is often submitted to the Forensic Biology laboratory for examination. Follow the general guidelines for notetaking and evidence examination when examining any item of clothing.

1. Describe the color or pattern of the item of clothing, fabric type (denim, corduroy, etc.), fabric make-up (cotton, polyester, etc., from label, if present), and size (if marked on item). If an item is submitted inside-out, record this information.
2. Spread out the item of clothing, looking carefully at the front, back, and inside for any possible evidentiary material.
3. Describe the general cleanliness of the item of clothing. Diagram any defined soiled areas on the garment, for example, knees, buttocks, or cuffs. Note whether the garment appears freshly washed or not (for example, wet or damp).
4. Describe any damage to clothing which may have evidentiary value. For example, torn or missing buttons, torn or cut areas, damaged areas, or burned areas should be described.
5. Note the presence of any suspected stab holes or bullet holes. Diagram the location, orientation, size, and shape of any holes. Do not overlook the possibility that more than one hole may be caused by a single stab or shot due to the folding of the fabric. When sampling a stain from the area of a suspected stab hole or bullet hole, DO NOT cut through or otherwise disturb the hole. Take a sample away from the existing hole.
6. Carefully examine any pockets, inside and out. CAUTION IS ADVISED WHEN PLACING THE HAND IN A POCKET. An unexpected sharp object could cause serious injury.
7. Carefully examine the waistband, lining, cuff area, and collar area. This may require turning an item inside-out.
8. Examine shoes very carefully. Shoes are less often discarded than other items of clothing. They also have many nooks and crannies which could retain material of evidentiary value. Look carefully in the groove between the sole and upper shoe. Shoes with tongues should be checked for blood which may have fallen between the shoelaces.

Shoes may be dismantled as necessary for further examination. Always photograph or diagram the intact items before dismantling.

9. All stains must be documented by diagrams and/or photography. Note the location of the stain, size, heaviness (soaked into fabric, surface smear, etc.), and any directionality of the stain pattern.

Each photograph must have a ruler visible in the frame, either a plain straight ruler or an x, y axis ruler.

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F. Evidence examination - sexual assault kits

Sexual assault kits are the most common item of evidence submitted to the Forensic Biology laboratory for examination. Follow the general guidelines for notetaking and evidence examination when examining any sexual assault kit. Follow the general guidelines for clothing examination when examining any clothing items packaged in a sexual assault kit.

Use an Evidence Packaging Worksheet for initial documentation of each sexual assault kit.

Use the Sexual Offense Evidence Collection Kit Inventory form for further documentation.

1. Note the name of the victim and information about when and where the kit was collected. Ensure that the name of the victim corresponds to the name listed on the paperwork in the casefile.
2. Indicate whether each kit component is sealed, unsealed, present but "not used" (this may require opening of the envelope), or not present ("not submitted"). Consecutive item numbers are assigned to only those items that are present and used (e.g. 1A, 1B, 1C1-C2 for swab and slide pairs; use a PM 2A, PM 2B designation for post-mortem kit items).
3. If **underwear or other small clothing items** are in the kit, examine them using the Clothing Description Worksheet. If stains are observed, underwear are most efficiently documented using the diagrams that are available or by a quick sketch; photography is not generally needed.

If there are no stains on the item(s), a diagram is not necessary; write a short description of the using a Clothing Description Worksheet.

4. The **debris envelope** is used by hospital personnel to collect loose, obvious trace evidence from the victim's body and/or the clothing.

If a debris envelope was used, note the location from which the debris was collected, or note that the location was not given. Since trace evidence examinations are not performed in the Department of Forensic Biology, there is generally no need to examine the contents.

5. The **dried secretions swabs** are used to collect possible biological fluids from areas other than the body cavities. This could include semen from the skin or saliva from bite marks, for example.

If dried secretions were taken, note the number of swabs and the location from which the secretions were collected, or note that the location was not given. Depending on the case, further information may need to be obtained by a supervisor if it is unclear what the purpose of the dried secretions swabs are.

It is possible that each swab was used to sample different areas. Therefore, a portion of each swab is submitted for P30 ELISA; amylase will also be done by the P30 ELISA rotation. Each swab should be individually labeled (1D-1, 1D-2, etc.) to keep them straight.

6. The **fingernail scrapings (or clippings)** are used to collect trace evidence from the fingernails.

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fingernails.

Since trace evidence examinations are not performed in the Department of Forensic Biology, there is generally no need to examine the contents. However, requests are occasionally made to examine the fingernail scrapings; discuss with a supervisor before starting any examinations of fingernail evidence.

7. If a **liquid blood exemplar** is present, it must be processed unless a dried blood control is also present. If both are present, the liquid blood must be discarded (see Blood Processing in the Biochemistry Manual).
8. If a **dried blood control** is present, it will be retained with other exemplars. Fill out a blank stain card (FB number, victim's name, date, and initials), attach the dried blood control to it, insert into a Kapak envelope and seal.
9. If a liquid or dried blood sample was submitted, there is no need to analyze the **saliva sample**. However, the saliva sample is retained as an exemplar in the absence of blood samples.
10. The **pulled head hair and pulled pubic hair** are collected as exemplars for any future microscopic hair comparisons.

Since trace evidence examinations are not performed in the Department of Forensic Biology, there is generally no need to examine the contents.

11. The **pubic hair combings** are used to collect possible trace evidence from the pubic hair of the victim.

Since trace evidence examinations are not performed in the Department of Forensic Biology, there is generally no need to examine the contents.

12. The three **body cavity swabs (oral, vaginal, and anal)** are used to collect possible biological fluids from those areas; the smears are used for a sperm search.

The slides are stained and examined briefly for the presence of sperm; this search need not be exhaustive and should take no longer than five minutes. *A new Criminalist must have the sperm search double-read for a period of six months and the reviewing Criminalist must add their initials and date to the kit inventory form.*

If sperm is found on a slide, the accompanying swabs can go directly to DNA extraction and/or amylase testing. If no sperm is found on a slide, a portion of the accompanying swab is submitted for P30 ELISA and/or amylase testing.

Vaginal swabs should always have amylase testing; if the slides are sperm positive the amylase testing is performed by the kit rotation. If the swab is submitted to P30 ELISA, the amylase testing is performed by the P30 ELISA rotation.

13. The **control envelope** is a concept left over from the days of ABO testing. There is no need to examine the contents.

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14. The **questionnaire, body diagram sheets, and instruction sheets** are intended for the use of the medical personnel. If present, make a copy of the questionnaire and/or body diagram sheets for the left side of the casefile; leave all originals in the kit. No item number is assigned if present.
15. Photographs and/or other paperwork are not supposed to be included in a kit. If present, make a note of it; leave them in the kit. No item number is assigned if present.
16. Once all serology testing is completed on a kit, it should be promptly dealt with.

If the kit is negative for semen, and there is no other evidence to examine, the case is finished and the report may be written.

If the kit is negative for semen, and there is other evidence to examine (see Scheduled Analysis), the casefile must be replaced in the "to be examined" stack. The FB number is added to the "evidence to be assigned" sheet; the evidence sign-in supervisor modifies Paradox to reflect the change in the status of the case.

If the kit is positive for semen, and was examined by a Crim I, it needs to be transferred to an interpreting analyst. Contact the next Crim IV on the Kit Transfer Worksheet to determine who will be the assigned IA for the file. Fill this information in on the "to be assigned" sheet. *This needs to be done prior to submission to Chelex.*

17. The person who examined a kit is responsible for returning the kit. It should be promptly returned to the Evidence Unit (for a vouchered kit) or transferred to retained storage (post mortem kits). **There is no need to wait for completion of DNA testing to return a kit.**

Prior to the return of a vouchered kit to the Evidence Unit, the items to be retained must be separated out:

- any P30/sperm positive swabs and slides
- any amylase positive swabs
- any semen positive stains from underwear or other clothing items
- substrate controls if applicable
- dried blood control (or other exemplar such as saliva sample or semen-free oral swab or semen-free/amylase-free vaginal swab - even if kit is negative for semen)

All post mortem items are retained; the kit box itself is discarded.

18. If a kit was examined by a Crim I, any semen positive samples need to be submitted to Chelex differential extraction with the IA's initials (see Evidence examination - general guidelines) prior to the casefile being transferred to the IA.
19. **Retained items** may remain in the possession of the interpreting analyst during any further testing. Once testing is complete, they must be properly sealed and transferred to retained storage.

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IV. Case management

Case management is the process by which an analyst shepherds the evidence samples through the testing process. It is the responsibility of the analyst to ensure that samples receive the necessary analysis, analytical results are evaluated promptly, any analytical problems resolved, the results interpreted, and the final report written - all within the time frame dictated by the target date.

A. Case assignment

Case management begins as soon as an analyst picks up a file for evidence examination.

1. Cases are self-assigned by the analyst by taking the next case in target date order. Review the "to be assigned" sheets (evidence, kits, or vouchered blood) for the case with the nearest target date and obtain the casefile. Enter your initials in the "EA" column as the examining analyst. If the "IA" column is blank, enter your initials there as well and fill in the initials of your supervisor in the appropriate column. If the "IA" column already has initials, you will be examining additional evidence on a pre-existing case.

2. Review the casefile (see evidence exam - general guidelines).

If this is additional evidence or an exemplar on a previously reported case, evaluate the earlier work.

- a. It may be necessary to submit earlier DNA extracts for additional testing.
 - b. If an exemplar is submitted, type it in all DNA systems the evidence was typed in.
3. Obtain the evidence from the evidence storage area and sign the chain of custody.

B. Initial analyses

1. Examine the evidence (see evidence exam).
2. Submit samples for P30, amylase, or DNA extraction as needed.
3. At this point, a draft report should be started by the analyst. Fill in the top block, evidence received section and the signature block at a minimum. Depending on the case, it may be possible to start work on the examinations section (tables) and the disposition section as well.
4. A case tracking worksheet should also be started by the analyst. These worksheets allow for tracking of samples, including analytical results, dates of submission for the different tests, etc.
5. When P30 or amylase results are returned to you, review the paperwork for completeness and accuracy; any discrepancies or omissions need to be corrected by the analyst who performed the test. Check especially for correct FB number, swab description or stain

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description.

If a sample is negative for P30 or amylase, but the facts of the case indicate a condom may have been used, a portion of the swab should be retained for future testing.

The P30 and amylase results must be properly interpreted; review the interpretation guidelines in the Biochemistry Manual if necessary.

If P30 results are close to the 2 ng level (for body cavity swabs) or the 0.05 level (for other samples), a slide should be prepared from the sample and a sperm search done.

6. When Chelex and QuantiBlot results are returned to you, review the paperwork for completeness and accuracy; any discrepancies or omissions need to be corrected by the analyst who performed the test. Check especially for correct FB number, swab description or stain description. In addition, review all the QuantiBlot results for your case.
 - a. Does the extraction negative contain DNA? If so, it should be re-submitted for QuantiBlot; if it still contains DNA the extraction must be repeated.
 - b. Do the neat and 1/10 dilution results correlate with each other? If not, resubmit the sample for QuantiBlot.
 - c. Is the DNA concentration too high? If so, submit additional dilutions for QuantiBlot.
 - d. Was there a problem with colored impurities preventing a determination of the DNA concentration? If so, the sample may need cleaning up using a Microcon followed by QuantiBlot.

If re-quantitation is needed, make sure it is done promptly so as not to hold up the extraction set.

See the QuantiBlot procedure and trouble-shooting in the PCR Manual, if necessary.

C. DNA typing and case evaluation

1. Once acceptable QuantiBlot results are available, aliquot the DNA samples for amplification if the case requires it. Obtain the box containing the samples.
 - a. Check the amplification paperwork to see if the extraction set already has an amplification worksheet started. If so, add your samples to that worksheet.

If there is no amp worksheet for this extraction set, start one.
 - b. Fill out the amplification worksheet, listing the samples and their concentrations. Do not fill out the "tube label" section - that will be done by the person setting up the amplification.

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- c. Aliquot your samples and place in a labeled rack in the freezer in the set-up room. If you are starting an amplification worksheet for an extraction set, aliquot the extraction negative as well.
- d. Sign the DNA extract chain of custody form. Note the purpose the aliquot(s) were taken for (Quad, Blue, Green, Cofiler, Profiler, Y's).

Aliquot samples promptly so as not to hold up the extraction set.

- 2. Once amplification and DNA typing results are returned to you, review the paperwork for completeness and accuracy; any discrepancies or omissions need to be corrected by the analyst who performed the test. Check especially for correct FB number, swab description or stain description. In addition, review all the electropherograms and tables for your case.
 - a. Did the positive control, amplification negative, and extraction negative (if applicable) give the expected results? If not, the samples may need to be re-amplified or even re-extracted.
 - b. Did your samples amplify? If not, it may be necessary to re-amplify with more DNA extract or less DNA extract (if PCR inhibitors are suspected).

In some situations, it may be necessary to start the DNA analysis over at the DNA extraction step or consider organic extraction.

- c. Was a partial DNA profile detected in your sample? A complete DNA profile may be obtained by re-running the sample with more amplification product or a longer injection time. If so, add it to the list of samples to be re-run and specify how much amplification product should be run or increased injection time. Racks to hold samples to be re-run are in the amplified DNA refrigerators.

Alternatively, submit the sample for amplification again with more DNA extract.

- d. Was your sample over-amplified? If so, add it to the list of samples to be re-run and specify how much amplification product should be run. Racks to hold samples to be re-run are in the amplified DNA refrigerators.

Alternatively, submit the sample for amplification again with less DNA extract.

- e. Were your samples properly edited? If not, ask the analyst to re-edit and reprint the electrophoregrams and table; make sure the new editing is added and dated on the editing worksheet.
 - g. Is there a mixture of DNA in your sample? If so, it will require duplication in a DNA system (the same one or a different one with overlapping loci).
 - h. Are there other samples that may require duplication? Review the duplication guidelines to identify those samples and start the appropriate steps (i.e., re-extraction

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or re-amplification).

- i. Do the DNA results make sense in the context of the case and/or sample? If not, there may have been a sample mix-up at the aliquot, amplification, or DNA typing steps. Discuss with your supervisor.

Review the DNA typing paperwork as soon as possible so that ample time remains to deal with any analytical problems.

See the STR procedures and trouble-shooting in the PCR Manual, if necessary.

3. Once initial DNA results are obtained (generally Quad results), compare them to the DNA LINKAGE database for matches. If a sample from your case matches a sample from a previous case obtain that casefile and discuss with your supervisor.
4. Not all samples require DNA analysis in all available DNA systems. Generally, a minimum of samples should be typed in AmpFISTR Blue, AmpFISTR Green, Cofiler, Profiler Plus, or Y M1, for the generation of statistics.
 - a. If there is only one Quad DNA profile in the case, choose one sample from each type of evidence for additional typing. For example, one stain from suspect's clothes and one stain from the crime scene.
 - b. If there are different Quad DNA profiles (more than one person) in the case, choose at least one sample representative of each DNA profile for additional typing.
 - c. For semen samples, choose a clean sperm fraction for additional typing.
 - d. For epithelial cell fractions, the Quad DNA profile is generally sufficient.
 - e. If DNA typing was being done as part of a crime scene reconstruction, the Quad DNA profiles may be sufficient.
 - f. Samples from males that DO NOT match the victim get Y STR's for databank purposes.

Blood samples - only one example of **each male non-victim type** should be submitted for Y STR's, not every sample in the case.

Semen samples - only one example of **each semen type** should be submitted for Y STR's, not every SF or SR in the case. If a Y STR profile for a pattern is already in the Y databank, it does not need to be submitted again from additional cases.

Exemplars - submit male exemplars for Y STR's.

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5. The DNA system chosen for additional testing may depend on the nature of the case.
 - a. Does the sex of the stain donor need to be determined? If so, choose a system that contains amelogenin.
 - b. Were the only DNA alleles detected in a semen-containing sample those of the victim? If so, amplification in Y M1 may be needed.
 - c. Does it appear that there are multiple semen donors? If so, amplification in Y M1 may be needed.
 - d. Does the case involve a body identification of a male, and are there paternal relatives available for testing? If so, amplification in Y M1 may be needed.
6. Ensure that the laboratory duplication policy is satisfied.
7. Ensure that all the necessary paperwork is present and is organized in a logical format.
8. Finalize the report. Before submitting it to a supervisor for review, make sure the report is logical, consistent, and complete.

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V. Reports

A. General guidelines

A report is the last step in a case. It brings together all of the analytical results and conclusions found in the case notes, in an easily readable style. Overly technical terminology or misleading statements must be avoided. The conclusions in each report must be supported by the analytical data.

Regardless of the target date, a report should be written and submitted to a supervisor for review no later than seven days after the last analytical results are available. Each supervisory level has an additional seven days to review the case and forward it to the next reviewer; if additional analytical work is needed the case returns to the analyst. Each reviewer must date and initial the scheduled analysis sheet.

DNA reports must include the following:

1. case identifiers
2. description of evidence examined
3. description of the methodology
4. loci tested
5. results and/or conclusions
6. an interpretive statement, either quantitative (statistics) or qualitative
7. date issued
8. disposition of evidence
9. signature and title of person(s) accepting responsibility for the content of the report

These requirements are met in the sections of the report: top block, SUMMARY, EXAMINATIONS, EVIDENCE RECEIVED, DISPOSITION, and signature block.

Template reports are available for use in the departmental computer network directories and should be used. These template reports have many pre-written statements which are applicable to most cases and save valuable time by eliminating the need to write the same sentences over and over. There are different template reports depending on the DNA tests used; make sure you use the correct template for the type of case you have.

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B. Top block

1. Each report will have specific identifying information in the top block. Not all of the following are available for each case. The information may vary depending on the case type and/or whether the case is an NYPD submitted case.

- a. issue date - the date the report was *written*
- b. name of deceased or victim
- c. FB number
- d. ME number
- e. name of suspect
- f. arrest number or NYSID number of suspect
- g. physician that conducted the autopsy and autopsy date
- h. precinct submitting evidence
- i. NYPD complaint number

With this information, the medical examiner, detective, or assistant district attorney's who receive the reports will know where to file them.

2. If an additional report is generated, this will be noted immediately prior to the SUMMARY section using the following standard statement:

ADDITIONAL REPORT

This is an additional report. For previous examinations, evidence submitted, and disposition, see report(s) dated (insert date or dates of prior reports).

3. If an amended (corrected) report is generated, this will be noted immediately prior to the SUMMARY section using the following standard statement:

AMENDED REPORT

This is an amended version of the report dated (insert date of original report). *An additional sentence describing the nature of the correction must be included.*

4. In those instances when additional reports are generated for a particular case, the most recent report will be signed by the analyst who works on that portion of the case. If the new data includes additional genetic testing, the report should generally include the new genetic testing results plus the genetic testing results from past reports.
5. The body of a report will have three or four sections, depending on the complexity of the case. For examples of reports, see completed case files beginning in 1998 and later.

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C. Summary of results

The summary section contains results and/or conclusions and the interpretive statement (quantitative or qualitative).

The summary should be a brief synopsis of the analytical results; it should **answer the questions** that were posed by the submission of the physical evidence, such as: Is there blood? Could it be the victim's? Are there samples foreign to the victim? Is there semen? Could the suspect be the semen donor? Are there any other body fluids?

Before you write your summary, ask yourself **“WHAT DOES READER OF THE REPORT NEED TO KNOW?”** Then write a short, clear summary answering those questions. The summary should give all of the answers in a simple manner; save all technical explanations for the EXAMINATIONS section.

The template reports contain many pre-written sentences to guide you in your explanation and interpretation of results.

1. For the majority of cases, the following type of summary is sufficient:

- a. Human blood was found on the knife.

PCR DNA testing was done; the blood on the knife could not have come from the victim, Jane Doe. This combination of DNA alleles would be expected to be found in approximately:

- b. Semen was found on the vaginal swab, based on the presence of P30 antigen and sperm.

PCR DNA testing was done; the semen could have come from the suspect, John Doe. This combination of DNA alleles would be expected to be found in approximately:

- c. Amylase, a component of saliva, was found on all three cigarette butts found in the "living room." An insufficient amount of human DNA was obtained, so no comparisons could be done.

- d. No blood was found on the pants or shoes taken from the “suspect”.

2. Complicated or unusual cases involving mixtures of body fluids, multiple contributors, etc. can be difficult to write. The template reports are a place to start, and many valuable insights can be gained by reading previous reports covering similar cases. It is a good idea for each analyst to maintain a file of his or her complicated reports for future reference.

3. For cases where there are similar items, but can be differentiated by color or other descriptions:

- a. Human blood was found on the blue shirt. No blood was found on the green shirt.

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b. Human blood was found on the samples from the "doorway" and "hall."

4. Avoid the exclusive use of voucher and item numbers, since that forces the reader to look elsewhere to find out what is being described. However, voucher and item numbers may be used in conjunction with the item description if necessary to avoid confusion.

For example, if the items need to be identified by item and/or voucher numbers:

a. Human blood was found on the shirt (item 1). No blood was found on the other shirt (item 2).

b. Human blood was found on the shirt (item 1, voucher E111111). No blood was found on the other shirt (item 1, voucher E111112).

5. If items were removed from an object, location or person, it is useful to put that information in the summary. Since you don't have personal knowledge of this, use quotation marks. Remember that quotation marks means you are copying EXACTLY information as it is written elsewhere.

a. Human blood was found on the sample taken from the "bedroom door."

b. Human blood was found on the shirt taken from "the defendant."

6. If when examining evidence, you collect trace evidence (hairs, fibers, etc.), they should be mentioned in the summary:

a. Hairs and/or fibers were collected from the shirt. They were packaged separately and returned with the shirt.

b. Glass fragments were found on the sneakers. They were packaged separately and returned with the sneakers.

7. All items submitted must be mentioned in the report. If nothing of evidentiary interest was found on an item:

a. No blood was found on the shirt or pants.

b. No semen was found on the vaginal, oral, or rectal swabs from the victim.

8. If items were not examined, the items should be mentioned. If necessary, the reason for not examining may be mentioned.

a. The "clothes from victim" were not examined.

b. The shirt was submitted wet, making it unsuitable for DNA analysis.

c. The knife was not examined, pending fingerprint examinations.

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9. Quantitative (statistical) statements are often part of the summary. They are calculated for probative samples when:
- The sample is apparently unmixed.
 - The sample appears to be a mixture of two components and the source of one component is known (i.e. when epithelial cells are present in the sperm cell fraction).
 - If there is a large difference in peak heights between the major and minor components and the genotype of the major component is easily determined. The minor component genotype can only be determined if four alleles are present at a locus because other alleles may be masked by the major component.
 - Statistics are not calculated for expected inclusions such as epithelial cells from a swab giving a profile consistent with the donor of the swab.

See Population Frequencies for STR's in the STR Manual if necessary.

10. After you write a summary, review it carefully. Does it answer all of the questions? Is it clear? Are all submitted items accounted for?

See the Report Procedures, Interpretation of Results in Report, Interpretation of Complex Autosomal STR Results, and Interpretation of Y STR Results in the STR Manual if necessary.

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D. Examinations

The examinations section contains a description of the methodology, the loci tested, tables of results, and may also contain re-statements or elaborations on results and/or conclusions.

This section is used when there are analytical results, such as DNA typing, that need a more detailed presentation than is used in the summary. In most cases, this will take the form of a table comparing evidence typing results with the blood of the victim and/or suspect.

The section consists of four parts: a standard explanatory statement, the table of results, a key to explain any symbols in the table, and an interpretation following the table.

1. Standard explanatory statements are in the template reports; make sure you use the correct explanatory statement for the type of genetic markers you used. The explanatory statements consist of several paragraphs; choose those that apply to the results in the case, deleting any paragraphs or loci that don't apply.

The explanatory statement can be further modified to reflect the analyses performed in a specific case, if necessary.

2. The table(s) of results lists all genetic marker analyses performed on every sample. The format of the table(s) depends on the complexity of the results.

For a simple case:

ITEM	VWA	F13A1	THO1	FES
suspect John Smith	14, 15	6, 7	8, 9	11, 12
victim Jane Doe	12, 16	7, 8	8, 9	10, 11
shirt from "suspect"	12, 16	7, 8	8, 9	10, 11

For many different items and/or multiple stains on one item it may be necessary to identify different stains on clothing by their location on the item. This is important information that can be used to help interpret results.

ITEM	VWA	F13A1	THO1	FES
suspect John Smith	14, 15	6, 7	8, 9	11, 12
victim Jane Doe	12, 16	7, 8	8, 9	10, 11
shirt from "suspect"				
stain 1A, right sleeve	12, 16	7, 8	8, 9	10, 11
stain 1B, left sleeve	12, 16	7, 8	8, 9	10, 11
pants from "suspect"				
stain 2A, right leg	12, 16	7, 8	8, 9	10, 11

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In a case where there are stains of different types, the table could also be arranged so that items of the same type are together:

ITEM	VWA	F13A1	THO1	FES
victim Jane Doe	12, 16	7, 8	8, 9	10, 11
shirt from "suspect"				
stain 1A, right sleeve	12, 16	7, 8	8, 9	10, 11
suspect John Smith	14, 15	6, 7	8, 9	11, 12
shirt from "suspect"				
stain 1B, left sleeve	14, 15	6, 7	8, 9	11, 12
bedspread				
stain 1A	14, 15	6, 7	8, 9	11, 12
stain 1B	14, 15	6, 7	8, 9	11, 12

Alternatively, there could be separate tables altogether:

TABLE 1 -

ITEM	VWA	F13A1	THO1	FES
suspect John Smith	14, 15	6, 7	8, 9	11, 12
victim Jane Doe	12, 16	7, 8	8, 9	10, 11
shirt from "suspect"				
stain 1A, right sleeve	12, 16	7, 8	8, 9	10, 11

TABLE 2 -

ITEM	VWA	F13A1	THO1	FES
suspect John Smith	14, 15	6, 7	8, 9	11, 12
victim Jane Doe	12, 16	7, 8	8, 9	10, 11
shirt from "suspect"				
stain 1B, left sleeve	14, 15	6, 7	8, 9	11, 12
bedspread				
stain 1A	14, 15	6, 7	8, 9	11, 12
stain 1B	14, 15	6, 7	8, 9	11, 12

For semen samples with epithelial cell fractions and sperm cell fractions, the table could also be arranged so that items of the same type are together, or with separate tables altogether:

TABLE 1:

ITEM	VWA	F13A1	THO1	FES
victim Jane Doe	12, 16	7, 8	8, 9	10, 11
vaginal swab				
epithelial cell fraction	12, 16	7, 8	8, 9	10, 11
panty stain 2A				
epithelial cell fraction	12, 16	7, 8	8, 9	10, 11

TABLE 2:

ITEM	VWA	F13A1	THO1	FES
suspect John Smith	14, 15	6, 7	8, 9	11, 12
vaginal swab				
sperm cell fraction	14, 15	6, 7	8, 9	11, 12
panty stain 2A				
sperm cell fraction	14, 15	6, 7	8, 9	11, 12

Complex samples, such as mixtures, may be more clearly presented in a table separate from other samples in the case:

ITEM	VWA	F13A1	THO1	FES
victim Jane Doe	12, 16	7, 8	8, 9	10, 11
suspect John Smith	14, 15	6, 7	8, 9	11, 12
vaginal swab				
sperm cell fraction	12, 14, 15, 16	6, 7, 8	8, 9	10, 11, 12

Samples that weren't tested, gave inconclusive results, negative results, or had an insufficient amount of DNA for testing may be presented in a separate table:

ITEM	VWA	F13A1	THO1	FES
victim Jane Doe	12, 16	7, 8	8, 9	10, 11
shirt from "suspect"				
stain 1D, front	**	**	**	**
substrate control	INS	INS	INS	INS
sample from "chair"	NEG	NEG	NEG	NEG

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3. The Forensic Biology Department has prepared a standard set of symbols to be used in the key to genetic marker tables. The standard symbols are below; choose those that apply to each table.

- * = Typing not attempted
- ** = Additional peak(s) were detected which did not meet laboratory criteria for allele identification; therefore, these additional peak(s) are not reported.
- *** = Large intensity difference between alleles suggests a mixture of DNA
- NEG = No alleles detected
- INS = Insufficient human DNA was detected for this test; therefore, this sample was neither amplified nor typed for this test.
- [] = The presence of the allele above a minimum threshold could not be duplicated

Additional symbols may be necessary for unusual circumstances.

4. After the table, an explanatory interpretation section is needed to explain conclusions, especially in cases with lots of stains or semen evidence. This may contain re-statements or elaborations on results and/or conclusions previously made in the summary.

For a simple case:

The stain on the shirt had the same DNA alleles as the victim, Jane Doe. Therefore, the stain could have come from her. The DNA alleles were different than the DNA alleles of the suspect, John Smith. Therefore, it could not have come from him.

For cases involving mixtures:

A person can have a maximum of two DNA alleles at a given DNA locus. Since more than two DNA alleles were seen in at least one DNA locus, a mixture of DNA is present in sperm cell fraction of the vaginal swab. A minimum of two people must have contributed to this sample.

Many of these DNA alleles are the same as the DNA alleles of the victim. Assuming a single semen donor, she could be the source of those DNA alleles and could be a contributor to the mixture. However, some of the DNA alleles are foreign to the victim and could not have come from her.

These DNA alleles must have come from the semen donor. Since these DNA alleles are the same as the DNA alleles of the suspect, he could be the source of the semen.

For cases with amelogenin results:

The blood stains from the shirt came from a male.

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For cases with Y STR results:

A mixture of DNA was found on the sperm cell fraction of the vaginal swab. The Y STR results are consistent with a single semen donor; therefore, the mixture of DNA in the sperm cell fraction of the vaginal swab is from a male and a female.

The Y STR results show that there are two semen donors. Neither John Smith nor John Doe can be excluded from being contributors to the semen.

For inconclusive results:

The stain on the chest of the shirt gave inconclusive typing results. No conclusion can be drawn concerning its source.

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E. Evidence received

This section will list all evidence received, whether from a submitting agency or from an autopsy. The post-mortem items from autopsy are given PM numbers to differentiate them from other evidence.

Make sure that all items signed into the laboratory, whether or not you examined them, are listed in the EVIDENCE RECEIVED section.

The date the evidence was received into the laboratory is also included. It is only necessary to give the date once for each voucher or group of PM evidence.

1. Using the paperwork and your notes, list the items numbers, voucher numbers, date received, and a description of the item. If items were removed from an object, location or person, it is useful to put that information in the description. Since you don't have personal knowledge of this, use quotation marks. Remember that quotation marks means you are copying EXACTLY information written elsewhere.

ITEM	VOUCHER	DATE REC'D	DESCRIPTION
	E111111	4/15/99	
1	"		sample from "bedroom door"
2	"		knife
	E222222	4/21/99	
1	"		shirt from "suspect"
2	"		pants from "suspect"
3A-B	"		socks
PM 1	---	4/10/99	blood sample from victim
PM 2-3	---		vaginal and rectal swabs

2. If there are several items submitted as one, give them all individual identifiers, both in your notes and in the report:

ITEM	VOUCHER	DATE REC'D	DESCRIPTION
	E111111	4/15/99	
1A-C	"		three cigarette butts

On the voucher, the cigarette butts were identified as "item 1". Upon opening the package, there were three; they were then given the identifiers 1A-C.

Initials: *KA*

Date: *4/31/99*

3. If there are items submitted that weren't included on the voucher, they still need to be listed in the evidence section:

ITEM	VOUCHER	DATE REC'D	DESCRIPTION
	E111111	4/15/99	
1A-B	"		shoes
2A-B	"		socks (not listed on voucher)

4. If upon opening the items it was discovered that the description on the voucher was incorrect (for example, a tank top was submitted, but the voucher says "T-shirt"), put the correct description in the EVIDENCE RECEIVED section.

5. If upon opening the items it was discovered that an item was missing, they still need to be mentioned in the evidence section:

ITEM	VOUCHER	DATE REC'D	DESCRIPTION
	E111111	4/15/99	
1A-B	"		shoes
2A-B	"		socks (not received)

6. If items were submitted to the laboratory, but not examined, the item description should be copied from the voucher and listed in quotation marks:

ITEM	VOUCHER	DATE REC'D	DESCRIPTION
	E111111	4/15/99	
1A-B	"		"shoes" (not examined)

Initials: *RCJ*

Date: *4/20/99*

F. Disposition

This section tells what has happened to the vouchered evidence, post-mortem evidence, and samples removed from the evidence.

1. Always keep a dried stain of victim's blood or suspect's blood. If no blood sample was submitted in a sexual assault kit, keep the saliva sample or other suitable item.

A dried stain prepared from victim's blood will be retained in the laboratory.

2. For post-mortem samples, all sexual assault kit items are retained. If there are hair standards, fingernails, etc., retain them as well.

Items PM 2A- 2H will be retained in the laboratory.

Item PM 3-4, fingernails from victim, will be retained in the laboratory.

3. For vouchered sexual assault kits, items that are positive for semen or amylase are retained.

The vaginal swabs and smears will be retained in the laboratory.

The dried secretions swab "from bite mark" will be retained in the laboratory.

4. Any remaining stains from clothing, stains taken off of knives, etc., will be retained for possible further analysis.

Stains and controls from the pants and shirt will be retained in the laboratory.

The blood swabbed off the knife will be retained in the laboratory.

5. If an entire item is retained:

Item 1, sample from "bedroom door", will be retained in the laboratory.

6. If numerous items are being kept, it is easier to write it in this way:

The following items are being retained in the laboratory:

dried stain prepared from victim's blood
head and pubic hairs from victim
stains and controls from the shirt and pants
item 1, sample from "bedroom door"

7. If an item has left the lab, NOT through our evidence unit:

The gun was returned to Det. Smith on 5-7-90.

8. If a sample was consumed during the analysis, that must be mentioned in the disposition.

Initials: *PC*

Date: *11/30/85*

9. For DNA cases, all DNA extracts are retained.

DNA extracts for all samples and controls tested will be retained in the laboratory.

10. For items that have been transferred to the Evidence Unit:

The remainder of the evidence has been released to the Evidence Unit.

Initials: RCJ

Date: 4/20/11

G. Signature block

1. Each report has two signatures: the person who is the interpreting analyst for the case and that person's supervisor.

A non-DNA case requires an interpreting analyst who is competent in all of the techniques used in the case.

A DNA case requires an interpreting analysts who is competent in all of the techniques used in the case AND who fulfills the educational requirements for a DNA analyst, including at least six months experience in a forensic DNA laboratory.

2. Reports are not considered official until both the analyst and supervisor have signed and the report has had managerial review.

H. Report distribution

Reports are supplied to OCME Records Department (for deaths only), the District Attorney's Office, and/or the precinct or other NYPD units. Reports are sent via fax or mail; if sent via fax, the fax confirmation sheet should be added to the case file.

Reports are supplied to the defense bar upon request or subpoena.