

Verifying and Reporting DNA Matches		
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## 5.0 VERIFYING AND REPORTING DNA MATCHES

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### 5.1 General principles

5.1.1 Discovering and confirming “exact matches” and “partial matches”, and making timely notifications, are among the highest priority tasks done in the Department of Forensic Biology. Any delays can result in additional crimes being committed that may have been preventable. For local matches, it is not necessary to have all analyses completed or reports written, just that the required data is available for review of the match. All database profiles must be reviewed and documented in LIMS prior to sending any profile for import into CODIS or sending the subsequent DNA hit notification.

5.1.1.1 Matches at the local level occur daily as a result of the local auto searches and use of Searcher. Matches at the state and national level follow from search frequencies set by the respective SDIS and NDIS laboratories.

5.1.1.2 Local exact matches between cases may result in the creation (or extension) of a DNA pattern. Depending on the nature of the cases involved, a “new” case may be transferred to the analyst of the previous case(s). See [Section 5.4.1. – Local exact matches discovered by direct comparison, Linkage or LDIS \(for casework analysts\)](#).

5.1.2 Before a match notification can be made, elimination samples must be requested and documented where appropriate (e.g., a sexual assault case where the intake paperwork does not indicate whether consensual activity occurred prior to incident, or a case where there is a reasonable expectation that someone other than a putative perpetrator may be found on an item).

5.1.3 Partial matches are inadvertent “indirect matches” that suggest that the source of an evidentiary profile is potentially a relative of a suspect, or a relative of another evidentiary profile within or between cases (e.g., victim, elimination sample, donor profile).

5.1.3.1 The use of partial matches at the national level has been approved by the NDIS Board; however, participation is left up to each individual state. The New York State

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Commission on Forensic Science has approved the use of partial matches in NY; participation is left up to each individual CODIS laboratory. With the availability of familial searching as of October 2017, OCME no longer performs partial match evaluations on SDIS and NDIS offender search results.

5.1.4 Missing and Unidentified Persons matches are a result of various searches that aim to locate the missing and identify unknown individuals either through direct matches or associations to relatives.

5.1.4.1 These searches additionally include pedigree tree searches, mitochondrial DNA (mt-DNA) only searches, and searches that use a combination of autosomal STR, Y-STR and mt-DNA.

5.1.4.2 Local searches occur every day via the local auto searches and identity searcher. NDIS and SDIS search frequencies for pedigree tree searches and searches using only one or multiple technologies may occur less frequently than other casework searches – these are set by the respective SDIS and NDIS laboratories. See [NYS CODIS Procedures Section 4.0](#) or [NDIS Procedures Manual](#).

## 5.2 DNA Hits application

5.2.1 The majority of exact and partial match DNA Hits are entered using the web-based DNA Hits application. This application allows for quick dissemination of matches to the NYPD and the District Attorney's offices. If DNA Hits is unavailable for > 24 hours, or a particular functionality is unavailable, DNA Hits may be made using a Notification Letter – following up with a DNA Hit in the web-based application when it becomes available.

5.2.1.1 A DNA Hit consists of one analyst entering the relevant case information into the application, submitting the hit to a queue for approval, and a different supervisory analyst reviewing the information and approving the DNA Hit.

5.2.1.2 Notifications using DNA Hits occur via an email sent to the appropriate designee(s) – typically the NYPD and the respective DAO (depending on the case jurisdiction). A notification is not made until the DNA Hit is approved.

5.2.1.3 Only the NYPD designee(s) and the appropriate DAO's designee(s) are notified via DNA Hits. If using DNA Hits, *do not also notify detectives or ADAs directly*. They will be notified by their superiors and/or the NYPD's electronic case management system.

5.2.2 DNA Hits is not used for Missing and Unidentified Persons Cases. For matches with unidentified remains from NYC OCME, the assigned Medical Examiner, Identification unit, and the CODIS Administrator are always notified. Matches involving outside jurisdictions will be sent to that jurisdiction's designee(s), if needed.

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5.2.3 CODIS members and/or managers may have full privileges in DNA Hits to add or delete authorized users, enter DNA Hits, approve DNA Hits, and recall DNA Hits. Interpreting analysts have privileges to enter DNA Hits, and depending on their criminalist level (III or IV) may have privileges to approve DNA Hits.

## 5.3 Method of notification

5.3.1 The existence of a match, direct or partial, can be disseminated via a Department of Forensic Biology, a DNA hit notification, and/or a DNA Hit. The method depends on the type of match (“cold” vs. “warm”), the level (local, state, national), and/or the type of comparison (exact vs. partial).

5.3.2 Generally, a DNA Hit is applicable only to cases that have an interpreted DNA donor according to current interpretation guidelines. Associations solely to mixtures where there is no CODIS profile deduced, or solely to Y-STR or mt-DNA results, are described in the reports, not via DNA Hits.

5.3.3 The Forensic Biology report will contain information on all local exact matches and/or partial matches. It will also contain information on any other associations to non-deconvoluted mixtures or Y-STR/mt-DNA results.

5.3.4 The Forensic Biology DNA hit Notification will contain information and a statistical calculation for the comparison of a previously typed suspect and the one evidence sample it matches. See [Reports Manual](#) for more information on DNA hit Notifications.

5.3.5 “Cold hits” are matches between cases (evidence or suspect) where there was no previous association to a known individual. “Warm hits” are matches between cases (evidence or suspect) that were previously linked to a known individual, and the DNA result is confirming this.

5.3.5.1 For example, a cold hit would be between an evidence case (no listed or cross-referenced suspect, no previous offender hit) and a subject file; or between an evidence case (no listed suspect, no cross-referenced suspect file, no previous offender hit) and another evidence case (solved or not).

5.3.5.1.1 In a situation where there are multiple cases in the pattern and a mix of cold and warm hits, and the DNA hit being issued is to the oldest case, that DNA Hit should be entered as a cold hit (e.g., classifying a hit in DNA Hits as a cold hit takes preference over a warm hit). For example, there is a warm hit between a new evidence case and a new suspect file. The two new cases also cold hit to an old evidence case. Each case will have a DNA Hit entered to the oldest evidence case – even though the new evidence and suspect file are a warm hit, both DNA Hits to the oldest evidence case should be entered as cold hits.

5.3.5.2 A warm hit would be between an evidence case (with a listed or cross-referenced suspect, or previous offender hit) and that particular individual’s subject file; or

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between an evidence case (with a listed or cross-referenced suspect, or previous offender hit) and another evidence case (that has already been linked to that listed suspect via S-file, offender hit, etc.).

5.3.6 Notification via DNA Hits is necessary for the following types of matches:

5.3.6.1 Local matches:

5.3.6.1.1 Cold hits between evidence cases

5.3.6.1.2 Cold hits between an evidence case and a suspect

5.3.6.1.3 Warm hits between evidence cases

5.3.6.1.4 Warm hits between an evidence case and a named suspect or arrestee

5.3.6.1.5 Partial matches between evidence cases, or between an evidence case and a named suspect or arrestee

5.3.6.2 State or National matches:

5.3.6.2.1 Matches between a previously solved or unsolved OCME evidence case and a state offender (with the exception of OCME evidence cases previously solved by the same state offender, i.e. State Defined #1).

5.3.6.2.2 Matches between a previously unsolved OCME evidence case and a national offender

5.3.6.2.3 Matches between an OCME evidence case and a new evidence case from another laboratory

5.3.7 Notification via DNA Hits is not necessary for the following types of matches:

5.3.7.1 Suspects with Protective Orders

5.3.7.1.1 Suspect samples for which a protective order has been received may prohibit entry into the local database and/or limit comparison of that suspect sample to a specific case(s). In this instance, if there is a confirmed match between the suspect profile and the evidence case that is the subject of the protective order, a DNA Hit **SHOULD NOT** be issued. The notification will be made only via the report.

5.3.7.2 Partial matches within an evidence case

5.3.7.3 Missing and Unidentified Persons cases (see [section 5.7](#))

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5.3.7.4 Any direct match where it is revealed the state/national offender, or locally tested suspect sample, belongs to a named victim, homeowner, witness, or any other individual who is determined to have legitimate access to the crime scene. If these profiles are already in CODIS they are not eligible and should be removed.

### 5.4 Verifying and reporting exact matches

5.4.1 Local exact matches discovered by direct comparison, LINKAGE, or LDIS (for casework analysts)

#### 5.4.1.1 General Principles

5.4.1.1.1 When confirming a possible match, keep in mind that a true match can occur between two profiles that have a single mismatch at a given locus. If an analyst has difficulty verifying an exact match or “no match,” they must seek guidance from their supervisor and/or manager.

5.4.1.1.2 The analyst of the “new” casefile has to request the “previous” casefile(s) if they are pre-LIMS cases. Confirm the exact match by comparing the appropriate DNA profiles. See [Case Management Manual](#) to determine whether you are able to evaluate the match.

5.4.1.1.3 Compare the information available between the files and consider if any of the information in the 61 forms seems inconsistent, if the same member of law enforcement collected or invoiced the items in both cases, or if the matching samples were processed together in the laboratory. If this is the case, discuss with your supervisor or technical reviewer immediately. (see also [DNA Hit Checklist](#))

5.4.1.1.3.1 Information on the 61 forms to review: precinct, location of occurrence, description of assailant (if applicable), details of the assault or incident.

5.4.1.1.3.2 Information on examination and batch worksheets to review: whether items were examined on the same date and/or by the same analyst, whether DNA extraction and/or amplification was performed on the same date/time and/or by the same analyst

5.4.1.1.3.3 Information on the invoice/voucher to review: whether the items in both cases were collected by the same Crime Scene Unit/Evidence Collection Team member, whether the items in both cases were processed by the same NYPD laboratory Criminalist

5.4.1.1.4 If a new match (evidence-evidence, evidence-suspect, evidence-named suspect/arrestee, or evidence-offender) is identified and hits to a pattern that pre-

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dated DNA Hits (i.e. they have not been entered into DNA Hits online), the *previous matches* should be entered into DNA Hits *prior* to the new match (this is called a retroactive hit). In the Notes section, make reference to the previous match letter(s), including match letter number and/or date of the original notification.

- 5.4.1.1.5 The Forensic Biology Customer Liaison must be contacted to facilitate conversations with NYPD and/or the relevant DAOs in order to procure elimination samples from potentially involved personnel. Although an elimination sample from potentially involved personnel may have been requested, the case analyst should wait for procurement and typing of the requested sample before issuing the report and/or entering a DNA Hit, within reason. The reporting analyst and/or their supervisor should follow up on procurement of the elimination sample at least every 30 days.
- 5.4.1.1.6 If any profile is found to match a profile in Lab Types, contact your supervisor and the Quality Assurance Manager. The profile should not be entered into, or removed from, CODIS without conducting an investigation.
- 5.4.1.1.7 Expedite additional testing, if necessary, to determine if you have a true match or a fortuitous match. Additional testing includes any duplication needed to satisfy the concordance policy. Once you have confirmed the exact match, continue the process. If additional testing does not confirm the match, see your supervisor/manager or a member of the CODIS team.
- 5.4.1.1.8 Evidence cases that hit will not routinely be transferred to another analyst. In most cases, the analyst of the “new case” retains that case and will be responsible for reporting the newly discovered match.
- 5.4.1.1.8.1 Cases that must be transferred are evidence cases where the analyst is not competent in a legacy interpretation (e.g., Identifiler, Cofiler, Profiler) and confirmation of the hit involves some interpretation from a legacy kit. See [Case Management Manual](#). Any necessary DNA Hit must be made by the analyst competent in the legacy interpretation.
- 5.4.1.1.8.2 In the event that a suspect case matches to an evidence case or vice versa, the suspect report/DNA hit notification that contains the comparison to that evidence case should be written by the reporting analyst of that evidence case. The DNA Hit should be entered by the reporting analyst writing that specific suspect case report/notification.
- 5.4.1.1.9 Determine if the match is a “cold hit” or a “warm hit”
- 5.4.1.1.9.1 Use information in the casefile to determine if a previous connection between the cases and/or subjects existed. This can include, but is not

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limited to: having the same listed suspect, the same complaint number, and/or a previous offender match to the listed suspect. If a previous connection was not evident, then the match is a cold hit. If a previous connection is evident, then the match is a warm hit.

5.4.1.1.9.2 “Cold hit” notifications should be prioritized. An analyst should notify their supervisor immediately upon discovering a “cold hit.” “Cold hits” and “warm hits” should not be issued without the associated Forensic Biology Report or DNA hit Notification being technically reviewed.

5.4.1.1.9.3 If an evidence case matches a suspect that has previously been typed, whether a “warm hit” or a “cold hit,” a likelihood ratio statistic must be performed. If this statistic has a positive association (above the uninformative range), a DNA hit will be issued along with a DNA Hit Notification. See [Reports Manual](#) for more information.

### 5.4.2 State and National matches discovered via SDIS and NDIS (for CODIS group)

#### 5.4.2.1 General Principles

5.4.2.1.1 With DNA matches identified at SDIS or NDIS, both laboratories involved in the match have confirmation responsibilities. All matches will be resolved by the CODIS staff, with the exception of Low Copy Number samples and certain identity searches performed and scheduled by NY State.

5.4.2.1.2 A good faith effort must be made to respond to and disposition the candidate match to the SDIS/NDIS custodian no later than 30 business days after receiving the match report.

5.4.2.1.3 The CODIS staff will print out a Match Inventory List that lists all SDIS/NDIS matches for the day, along with the Candidate Match Detail Reports for each SDIS/NDIS match. If necessary, request the corresponding pre-LIMS file.

5.4.2.1.4 Each true match must have a [Candidate Match Confirmation Checklist](#) completed. This ensures that the candidate match detail report and corresponding OCME casefile have been reviewed to determine whether the profiles match and if the OCME profile is CODIS eligible.

5.4.2.1.5 If the candidate match is deemed a “no match,” no checklist is necessary – disposition the match accordingly in CODIS and document the “no match” in the DB profile of the casefile. LIMS case records will require a “profile does not match in” event in the DB profile, with the corresponding SDIS/NDIS specimen ID listed. Pre-LIMS casefiles will have a [CODIS Non-Matching Comparison Form](#).



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5.4.2.1.6 If any modifications are needed in the course of reviewing the match, notify the RA/TR of the casefile. They must complete a Profile Modification and submit to the CODIS group. It is not necessary to wait for the profile to be modified to continue the confirmation process. See [LIMS Database Profile Modification Manual](#).

5.4.2.1.7 If the confirmed match has linked an offender to an unsolved case, it is best practice for the investigating agency to obtain an exemplar from the offender to submit to the laboratory for testing prior to proceeding to trial. This requirement is located on the DCJS Match Letter that is available to the DAOs upon request. An exemplar is generally not necessary for grand jury proceedings.

5.4.2.1.7.1 The DCJS Match Letter is generally used by the DAO to obtain the court order authorizing the collection of the exemplar. The DAO's can request a copy of the Match Letter from the CODIS group by submitting a Match Letter Request Form. Questions from the DAO regarding offender information, the certified Match Letter, or offender blood draws, etc. should be directed to DCJS.

### 5.4.2.2 SDIS Offender Matches

5.4.2.2.1 In the event that a specimen has an SDIS offender match and an NDIS offender match occur on the same date, the SDIS offender match takes precedence and should be processed first. See Section [5.4.2.3.3](#) to process the NDIS match.

5.4.2.2.2 Each exact match must be accompanied by a [NYS DNA Databank Candidate Match Confirmation Form](#). This supplies DCJS and the Databank coordinator with our case information and a confirmation of the match. This form is typically batched by date and sent electronically to DCJS and the NYS DNA Databank after DCJS has completed the search verification for that date.

5.4.2.2.3 Upon receipt of the NYS DNA Databank Candidate Match Confirmation form from OCME, and confirmation of the offender sample from NYS DNA Databank coordinator, DCJS will release the offender's name in the form of a DCJS Match Letter (see [NYS CODIS Procedures Section 5](#)). This letter will contain the name of the offender, the offender's NYSID (New York State Identification Number) and the current location, if known.

5.4.2.2.4 Once the candidate match detail report, candidate match confirmation checklist, Databank candidate match confirmation form, and offender letter have been compiled, a DNA Hit should be entered using the procedure in [Section 5.6](#).

5.4.2.2.4.1 A DNA Hit will only be entered between: a) previously unsolved evidence cases and SDIS offenders, b) previously solved evidence cases (via local suspect or NDIS offender) and SDIS offenders. Evidence cases that are part of a pattern that have been previously



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solved via an SDIS offender (i.e. State Defined #1 matches) will not have a DNA Hit entered – the local F-F DNA Hit is sufficient to link everything.

5.4.2.2.5 Casework analysts should review their casefiles before going to grand jury or trial to ensure the DCJS Offender Letter is in the physical file and/or LIMS record, especially for a 180.80. If CODIS paperwork is not in the casefile, notify the CODIS group immediately.

### 5.4.2.3 NDIS Offender Matches

5.4.2.3.1 If a specimen has two or more national offender candidate matches on the same date, select one of the candidate matches to process first (see CODIS Administrator for guidance). See [Section 5.4.2.3.3](#) to process the remaining NDIS match(es).

#### 5.4.2.3.2 NDIS Offender Matches for cases previously **unsolved**:

5.4.2.3.2.1 After the data is reviewed and the match confirmed, the relevant NDIS laboratory must be notified so they can begin the confirmation process. This confirmation process is specific to each outside state's laboratory. The contact information for all CODIS laboratories can be found on the CODIS Website. Standard case contact protocol should be followed to document any correspondence or conversations as appropriate.

5.4.2.3.2.2 A CODIS DNA Match Data Request and Response Form (located on the network) must accompany each candidate match. This form contains OCME case information, such as: contact information for the submitting police agency, contact information for the NDIS laboratory, match ID, case number, whether the case is solved or not, complaint number, borough, date of occurrence, crime type, sample, and victim name. This form is transmitted to the NDIS laboratory electronically.

5.4.2.3.2.3 Upon receipt of the CODIS DNA Match Data Request and Response Form, and confirmation of the offender sample by the NDIS laboratory, the match is confirmed and the offender's name is released. The NDIS laboratory will send their respective offender Match Letter either electronically or via mail. This letter will contain the name of the offender, and may contain the offender's SID (State Identification Number), FBI number, qualifying offense, last known whereabouts, and date of birth.

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5.4.2.3.2.4 A DNA Hit notification for the match should be entered using the procedures in [Section 5.6](#).

5.4.2.3.3 NDIS Offender matches for cases that are previously **solved**:

5.4.2.3.3.1 This includes matches where the OCME evidence case is previously solved either through a local suspect, SDIS offender, or NDIS offender (from the same laboratory or a different laboratory). Even if the previous match that is solving the evidence case hasn't been fully processed yet, the case can still be considered "solved" and the NDIS offender match will proceed after that first process is completed.

5.4.2.3.3.2 After the data is reviewed and the match confirmed, the NDIS laboratory must be contacted in order to verify that the name previously associated with the OCME evidence case is the same name associated with this current NDIS offender match. This is referred to as a "name check."

5.4.2.3.3.3 An email is sent to the NDIS laboratory that includes the match ID, specimen ID for both the evidence case and offender, and the subject name on record. The offender lab will respond and confirm whether that name matches their records. The contact information for all CODIS laboratories can be found on the CODIS website.

5.4.2.3.3.4 If the names do not match, further investigation should be performed to determine whether the offender has an alias. Other information such as date of birth, FBI number, NYSID/SID, and any known aliases (usually from DCJS or FID Liaison) can be sent to the NDIS laboratory to confirm with information they have associated to their offender.

5.4.2.3.3.5 No DNA Hit will be issued for matches of this type. All relevant paperwork and communication will be placed in the LIMS case record or pre-LIMS paper casefile.

5.4.2.4 SDIS/NDIS Forensic Matches

5.4.2.4.1 After the data is reviewed and the match confirmed, both laboratories involved in the match need to exchange case information. The contact information for all CODIS laboratories can be found on the CODIS website.

5.4.2.4.2 A CODIS DNA Match Data Request and Response Form (located on the network) must accompany each candidate match. This form contains OCME case information, such as: contact information for the submitting police agency,

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contact information for the NDIS laboratory, whether the case is solved, match ID, case number, complaint number, borough, date of occurrence, crime type, sample, and victim name. This form is transmitted to the NDIS laboratory electronically.

5.4.2.4.3 Upon receipt of the response from the other laboratory (which typically includes similar case information as above), the match is confirmed.

5.4.2.4.4 It is encouraged that the CODIS group communicates clearly with the other laboratory and works together to confirm the match and exchange information. Either laboratory can reach out first.

5.4.2.4.5 In the case of a pattern, where either one of our cases is hitting to multiple cases from another laboratory, or multiple cases from our laboratory are hitting to one case from another laboratory, each individual match should always have its own Candidate Match Confirmation Checklist, but the exchange of case information can be consolidated as necessary (as long as information from each individual case is exchanged at least once). If another laboratory has already provided their case information for a previous match, they are not required to provide it again. Similarly, if we have already provided our case information to another laboratory, we are not required to provide it again either (although typically we do).

5.4.2.4.6 Enter the match(es) into DNA Hits using the procedure in [Section 5.6](#). Note that if case information from the other laboratory's case has already been disseminated to the NYPD and DAO's via DNA HITS, an additional hit is not required (e.g. Lab A's case hits Lab B's case. A DNA hit is issued. Lab A then enters another case, which hits to the same case from Lab B. Another DNA hit is not necessary between the new case and Lab B's case, as the local F-F hit between Lab A's two cases will be sufficient to link the matches, and Lab B's case information has already been disseminated).

## 5.5 Verifying and reporting partial matches

**5.5.1** Partial match procedures are applicable only to cases that have a forensic autosomal DNA profile that is single-source or fully deconvoluted. A partial DNA donor profile can be evaluated for a partial match if the missing allelic data is due to complete locus drop-out. Database profiles cannot have any indication of a mixture or partially deconvoluted loci. Any Z's in the interpretation or mixed locations in the database profile would disqualify the profile for partial match evaluation (ex: 11+, 12 or 11, 12, 13).

5.5.2 All eligible DNA profiles within a case should be reviewed for potential partial matches.

5.5.3 All potential partial matches will be accompanied by a [Partial Match Evaluation Form](#), which will evaluate the potential match for a parent-offspring relationship or a full-sibling relationship. The evaluation consists of observing whether there is sharing at each locus and/or

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counting of shared alleles across all loci **in common that contain data**. A likelihood ratio is then calculated using the CODIS Popstats application. The allele sharing thresholds and likelihood ratio thresholds are described on the Partial Match Evaluation Form. The laboratory thresholds must be met if a kinship notification is to be made.

5.5.3.1 Analysts should consult with their supervisor and consider the case circumstances and how probative the partial match is for the investigation. Consider whether the case is solved or unsolved, whether arrests have been made, etc.

5.5.3.2 Expedite any additional testing needed to satisfy the concordance policy.

5.5.3.3 Consider the necessity for Y-STR testing to determine whether the match is a true partial match (e.g., both profiles are male).

5.5.4 At the local level, only partial matches between evidence profiles (within a case or between cases) or partial matches between evidence profiles and a **named** suspect or arrestee for that particular evidence case will be evaluated. *Any partial matches revealed by comparing a suspect to LINKAGE or partial matches revealed by searching a suspect in LDIS will NOT be evaluated.*

5.5.5 Partial matches between evidence cases, or between an evidence case and a named suspect/arrestee, will be disseminated via the report and a DNA Hit. Partial matches within an evidence case will only be disseminated via a report (no DNA Hit).

5.5.6 It is possible for the partial match evaluation of the profiles to meet both the parent/child thresholds and the full sibling thresholds – in that case, report wording should include language for both relationships as needed.

5.5.7 At the state and national levels, no partial matches to offenders or other labs' forensic profiles will be evaluated.

## 5.6 Making notifications using DNA Hits

5.6.1 Using the internet, go to the DNA Hits program. The Domain should show "OCME." Login using your OCME username and password.

5.6.2 Depending on the level of your DNA Hit, click on "Create New Local Hit," "Create New State Hit," or "Create New National Hit" button in the upper right-hand corner.

5.6.3 Using the drop-down menu, select the appropriate match type. It is very important to select the correct match type, since DNA Hits is being used for "cold hits," "warm hits," and for some local partial matches.

5.6.3.1 Note: be careful in using the drop-down menus – make sure what you select stays selected by moving the cursor off of the drop-down menu and clicking elsewhere to deactivate the drop-down menu.

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5.6.3.2 Local match options: Forensic to Forensic (F-F); Forensic to Subject (F-S); Forensic to Named Suspect/Arrestee (F-NSA); Forensic to Forensic (Partial) (F-F (Partial)); Forensic to Named Suspect/Arrestee (Partial) (F-NSA (Partial)).

5.6.3.2.1 “Warm hits” between a case and a suspect are reported using the “Forensic to Named Suspect/Arrestee” match type.

5.6.3.2.2 “Cold hits” between a case and a suspect are reported using the Forensic to Subject match type.

5.6.3.2.3 All forensic hits, “warm” or “cold,” are reported using “Forensic to Forensic” match type.

5.6.3.3 State match options: Forensic to Offender (F-O); Forensic to Forensic (F-F(S))

5.6.3.4 National match options: Forensic to Offender (F-O(N)); Forensic to Forensic (F-F(N))

5.6.4 Enter the case number or specimen ID for the new match and click on “Search.” The oldest case should be entered first on the left-hand side, and the newest case entered on the right-hand side.

5.6.4.1 Note: for all notifications, the oldest case entered should be the **evidence** case, not a suspect case. The new case may be an evidence case or a suspect/offender case. The first evidence case is generally the one whose DNA profile was first entered into CODIS; see a supervisor or a member of the CODIS group if unsure which case is the “first” case (or which case all future matches should be linked to). For “first cases” entered prior to 2012, there may be profiles in the local pattern index that were not submitted to SDIS/NDIS due to policies at that time.

5.6.5 Using the drop-down menu, select the appropriate search type. If this is not done, all the information will be lost upon submission and will have to be re-entered. “Direct match” can be used if a suspect came in for comparison to a given case.

5.6.6 An effort should be made to fill out as much information as possible in a DNA Hit, depending on the availability of that information. The only exception is additional victim information (address, phone, etc.) – this information is not routinely included in DNA Hits.

5.6.6.1 All fields marked in yellow are required to be entered. If one of the cases was involved in a previous DNA Hit, some information for that case will be populated automatically (please review for accuracy).

5.6.6.2 Some cases may not have certain information available, e.g. PM samples (no voucher number), backlog project cases (no 61 number and sometimes no date of occurrence), and the occasional Biotracks or IAB case (no or partial 61 number).

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5.6.6.3 The Notes section of a DNA Hit can be used to communicate additional *relevant* information to the NYPD and DAOs. For State and National matches, this typically includes contact information for the other lab's investigating agency.

5.6.7 The following fields are available for entry in a DNA Hit:

5.6.7.1 Match Information:

5.6.7.1.1 Search type

5.6.7.1.2 Match type

5.6.7.1.3 Indicators (mixture, partial, number of loci)

5.6.7.1.4 Forensic Lab #'s (Note: for state and national hits, the other labs specimen ID should be used instead of a lab #)

5.6.7.2 Sample Information:

5.6.7.2.1 Specimen ID

5.6.7.2.2 Gender

5.6.7.2.3 Hospital

5.6.7.2.4 Sample type

5.6.7.2.5 Voucher

5.6.7.2.6 Item #

5.6.7.2.7 Storage #

5.6.7.3 Incident information

5.6.7.3.1 Incident date

5.6.7.3.2 Case type

5.6.7.3.3 Complaint Number

5.6.7.3.4 Borough

5.6.7.3.5 Victim/Entity Name

5.6.7.3.6 Victim's personal information – address, phone number, e-mail (not routinely filled out)

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### 5.6.7.3.7 Additional victim names

### 5.6.7.4 Suspect/subject information (either from an evidence file or S-file)

#### 5.6.7.4.1 Information from (61, voucher, lab request, other)

#### 5.6.7.4.2 Suspect name

#### 5.6.7.4.3 Complaint #

#### 5.6.7.4.4 NYSID #

#### 5.6.7.4.5 FBI #

#### 5.6.7.4.6 Suspect exemplar submitted to OCME – Y/N?

#### 5.6.7.4.7 Gender

#### 5.6.7.4.8 Voucher (if filling out information for subject file)

### 5.6.7.5 Assigned criminalist

### 5.6.7.6 Notes

5.6.8 For the “Assign a Criminalist” section, if the analyst assigned (the RA for the case) is not on the drop-down list, assign the tech reviewer or relevant Assistant Director. If the analyst assigned to a case is no longer at the lab, list the Tech 1 reviewer or Tech 2 reviewer, in that order of preference. Should neither of them be available, consult CODIS staff or a supervisor regarding analyst assignment.

5.6.9 Click on “Get Approval.” If any red error messages appear, fix the problem and click on “Get Approval” again (NOTE: once you click on “Get Approval,” some information previously entered may disappear – review the DNA Hit in its entirety before clicking the approval button again).

5.6.10 Once there are no errors, the screen will return to the “Create New Entry” mode and inform you that you have successfully entered a match. This match will be entered into an approval queue.

5.6.11 The technical reviewer may then review the DNA Hit and the associated cases. For local matches, it is not necessary to have all analyses completed or reports written, just that the required data is available for review of the match. Effort should be made to reduce the time between issuing a DNA Hit and issuing a report/completing analyses.

5.6.11.1 The technical reviewer must check all fields with information on both sides of the entered DNA Hit. Pay special attention to the specimen ID, voucher, and item number



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fields – if a case had more than one CODIS profile, DNA Hits may have auto-populated one of the specimens from the case that isn't involved in the current match.

5.6.12 Once approved, the assigned analyst and technical reviewer will receive a DNA Hits confirmatory email from [DNAHITS@cityhall.org](mailto:DNAHITS@cityhall.org).

5.6.13 The DNA Hits email confirmation must be attached to the case record. It is best practice to attach this email confirmation to both cases that have been entered into the hit. Ensure that the email has been printed to PDF before attaching, otherwise it may not appear in the casefile. For pre-LIMS cases, the email confirmation will be printed and placed in the casefile.

## 5.7 Verifying and Reporting Missing and Unidentified Person Matches

5.7.1 For searches involving Missing Persons and Unidentified Human Remains, the results can be described either as matches or associations. Matches occur when searches identify two profiles that are believed to have originated from the same source (e.g., UHR to offender, MP to Forensic). Associations occur between UHRs and family reference samples. These can occur via Identity Searches or searches of pedigree trees. The results from these searches are not matches - they indicate that the UHR may be that of the missing person sought by the family members who submitted reference sample(s).

5.7.2 Once the identity of a Missing Person or Unidentified Human Remains profile has been confirmed, the profile and associated family reference sample profiles must be removed from CODIS. If, however, the human remains are partial, the DNA profile(s) of the UHR and, in some instances, the family reference sample(s) may remain at NDIS to facilitate identification of other remains. If the UHR is identified, but 'Unclaimed,' where there is no known next of kin, the UHR profile may also remain in CODIS.

5.7.3 When evaluating missing persons and unidentified persons matches and associations, it is best practice to include the following, if available, when exchanging information with another agency: specimen ID, pedigree ID, name of missing person, name of UHR (if identified), and NamUs number. In addition, consider the following questions to guide your evaluation (this is a non-exhaustive list):

5.7.3.1 Does the gender of the missing person correlate to the unidentified remains?

5.7.3.2 When was the body recovered in relation to when the person was reported missing?

5.7.3.3 Are physical descriptions such as age, race, stature, hair color, eye color, tattoos, scars, etc. indistinguishable?

5.7.3.4 Are fingerprints, dental records, or other medical records available for comparison? If these are available, the information should be shared with the appropriate departments for comparison, such as the Forensic Anthropology Unit, Forensic Odontology, Forensic Pathology, or NYPD.

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5.7.3.5 Determine whether the matching samples were processed together: evidence exam on the same date and/or by the same analyst; DNA extraction and/or amplification worksheet with the same date and time. If so, see your supervisor, technical reviewer, and/or Assistant Director immediately.

5.7.3.6 Determine if additional technologies such as Y-STRs or mt-DNA are needed to confirm or refute the match or association.

5.7.3.7 Determine if additional reference samples from relatives of missing persons or samples from the missing person are available and needed to assist in the identification.

### 5.7.4 General evaluation process:

#### 5.7.4.1 Exact Matches

5.7.4.1.1 One goal of evaluating Missing Persons and Unidentified Persons matches is to determine whether both profiles originate from the same source. These are exact matches.

5.7.4.1.2 These matches can occur at the local, state, or national level. Local matches occur via direct comparison or searches of LINKAGE or LDIS. See [NYS CODIS Procedures Section 4.0](#) or [NDIS Procedures Manual](#) for state and national search configurations, respectively.

5.7.4.1.3 Casefiles should be requested to confirm that the profiles match by reviewing the data. Keep in mind that a true match can occur between two profiles that have a single mismatch at a given locus. If an analyst has difficulty verifying a match, they must seek guidance from their supervisor and/or manager.

5.7.4.1.4 For local cases in which the match appears to be true, a supervisor, based on case circumstances, will determine who should write the notification letter and an additional report (if needed). The match paperwork for cases with state and/or national matches will be processed by the CODIS group and the analyst whose case it is will be notified to issue match notifications/additional reports, as needed.

5.7.4.1.5 Expedite additional testing, if necessary, to determine if you have a true match or a fortuitous match (e.g., Y-STR or mt-DNA testing). If additional testing does not confirm the match, see your supervisor/manager or a member of the CODIS team.

5.7.4.1.6 For SDIS or NDIS matches to offenders, process the match according to above sections [5.4.2.1.1 - 5.4.2.1.5](#).

5.7.4.1.6.1 For SDIS matches, continue the process with sections [5.4.2.2.1 - 5.4.2.2.3](#).

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5.7.4.1.6.2 For NDIS matches, continue the process with sections [5.4.2.3](#).

5.7.4.1.7 Once the evaluation is complete, notifications can be sent by emailing a scanned PDF copy of the original signed letter. An additional report, if necessary, is written linking the two cases together. Statistics are performed and included in the report in accordance with Forensic Biology protocol (i.e. random match probability for direct (exact) matches and kinship statistics for associations in which likelihood ratios are needed).

5.7.4.1.8 For matches with unidentified remains from NYC OCME, the assigned Medical Examiner, Identification Unit, and the CODIS Administrator are always notified.

5.7.4.1.9 For matches involving outside jurisdictions, a report, if needed, will be sent to that jurisdiction's designee(s).

### 5.7.4.2 Associations

5.7.4.2.1 One goal of evaluating Missing Persons and Unidentified Persons associations is to determine whether there is a familial relationship between the profiles. The rules of inheritance must be considered when evaluating the different systems tested (STR, Y-STR, mt-DNA) and the particular familial relationship.

5.7.4.2.2 Associations can result from identity searches or pedigree tree searches. Sometimes, the same association that results from a pedigree tree search (rank) will also appear as a match. In this case, the rank will typically take precedence over the match(es) for CODIS dispositioning purposes and statistical calculations in reports.

5.7.4.2.3 These associations can occur at the local, state, or national level. Local associations occur via direct comparison or searches of LDIS. See [NYS CODIS Procedures Section 4.0](#) or [NDIS Procedures Manual](#) for state and national search configurations, respectively.

5.7.4.2.4 The casefile(s) should be requested to confirm the association between the profiles by reviewing the data. For state and national associations, both laboratories have confirmation responsibilities. Communication must occur between both laboratories to exchange information and verify the association. Ensure thorough and accurate exchange of pertinent information.

5.7.4.2.5 Expedite additional testing, if necessary, to verify the association (e.g., Y-STR, mt-DNA). If additional testing does not verify the association, see your supervisor/manager or a member of the CODIS team.

5.7.4.2.6 Once the evaluation is complete, the CODIS group will notify the analyst whose case it is to issue match notifications/additional report, as needed. Notification letters can be sent by emailing a scanned PDF copy of the original

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signed letter. Statistics are performed and included in the report in accordance with Forensic Biology protocol (i.e. random match probability for direct (exact) matches and kinship statistics for associations in which likelihood ratios are needed).

5.7.4.2.7 For associations with unidentified remains from NYC OCME, the assigned Medical Examiner, Identification Unit, and the CODIS Administrator are always notified.

5.7.4.2.8 For associations involving outside jurisdictions, a report, if needed, will be sent to that jurisdiction's designee(s).

## 5.8 CODIS Paperwork in Case Records

5.8.1 For LIMS casefiles, CODIS documentation is added to the case record electronically.

Generally, this paperwork is attached in the DB profile. CODIS paperwork is generally added to the administrative side of the casefile (left). For pre-LIMS casefiles, paperwork will be printed and added to the paper case file.

5.8.2 The following documentation should be included in each case record as applicable:

Specimen Detail Report

Candidate Match Confirmation Checklist

NYS DNA Databank Candidate Match Confirmation Form

Local Match Detail Reports

CODIS DNA Match Data Request and Response Form

Offender Letters

Response Letters from outside laboratories

DNA Profile General Evaluation Form

Partial Match Evaluation Form

Partial Match Statistics

DNA Hit notification email

DNA Hit recall notification email

Profile Modification Form

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Profile Expungement Form

Specimen Delete Report

CODIS Non-Matching Comparison Form

Any other related documentation deemed necessary

5.8.3 Events are entered into the DB profile for a LIMS case record to reflect actions taken regarding that specimen. Events record what action was taken, what level in CODIS the action was taken in, which dataset the action affects, the initials of the analyst entering the event, the date and time the event was entered, and any notes that are applicable. Events entered into the DB profile appear on the DNA Profile Evaluation form, Profile Modification Form (if the profile modified checkbox is checked for that event), and Expungement Form (if the profile expungement checkbox is checked for that event). The events that should be noted on the DB profile in LIMS include:

5.8.3.1 “Profile checked against” for LINKAGE and LDIS

5.8.3.2 “Profile does not match in” for any no matches discovered in LDIS, SDIS or NDIS.  
One event line per search level; approximately 10 specimen IDs can be entered into the notes.

5.8.3.3 “Found specimen in” for any true matches discovered in LDIS and/or LINKAGE.  
Enter one event per matching specimen. You do not need to enter the event in the DB profile for the corresponding specimen it has matched to.

5.8.3.4 “Entered into” for profile entry into LDIS

5.8.3.5 “Upload/search confirmed in” for specimens confirmed to be uploaded to SDIS and/or NDIS.

5.8.3.6 “Entry confirmed in” for specimens confirmed to be entered into LDIS.