

FORENSIC BIOLOGY CODIS MANUAL

CODIS Case Disposition and Hit Counting		
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6.0 CASE DISPOSITION AND HIT COUNTING

6.1 Case Disposition

- 6.1.1 After the completion of all notifications, the CODIS staff will follow up on the disposition of all DNA matches notified during the month. This information is obtained from the NYPD designee.
- 6.1.2 Depending on information given about each case, each DNA match is dispositioned as one of the following: Forensic Hit, Offender Hit, Arrestee Hit, Detainee Hit, Legal Index Hit, Investigative Information, Benchwork Match, or Conviction Match (see section 1.0 CODIS Terms and Abbreviations for definitions).
- 6.1.3 Other dispositions that may be used are: Pending, Offender Duplicate, User Defined #1, 2, 3, State Defined #1, 2, 3, or No Match (see section 1.0 CODIS Terms and Abbreviations for definitions).
- 6.1.4 For missing persons cases, additional dispositions that may be used are: ID confirmed, ID pending, Waiting for More Data, or Maternal **or Paternal** Relative (see section 1.0 CODIS Terms and Abbreviations for definitions).
- 6.1.5 Refer to the NDIS Operational Procedures Manual and/or the CODIS Administrators Handbook to determine which disposition is appropriate.
- 6.1.6 Local CODIS administrators must report the following data each month to the SDIS administrator:
- OH_S: Offender hits within the state (matches detected at SDIS)
 - OH_N: Offender hits from other states (matches detected at NDIS)
 - AH_N: Arrestee hits at NDIS (match detected by NDIS)
 - DH_N: Detainee hits at NDIS (match detected by NDIS)
 - LH_N: Legal Index hits at NDIS (match detected by NDIS)
 - IA: Investigations aided (for each level)
 - FH_S: Forensic hits with other labs in the state (matches detected at SDIS)
 - FH_N: Forensic hits with labs from other states (matches detected at NDIS)
 - IC_S: Confirmed identifications within the state (matches detected at SDIS)
 - IC_N: Confirmed identifications with labs from other states (matches detected at NDIS)
 - PI_S: Putative Identifications within the state (matches detected at SDIS)
 - PI_N: Putative Identifications with labs from other states (matches detected at NDIS)
 - ID: Identifications aided (via putative *or* confirmed identifications)

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6.2 Hit Counting

6.2.1 Hit statistics or hit counting is a requirement for participation in the CODIS program. These statistics are used to track the effectiveness of the program and the successes of the laboratories. The problem: how to give credit to all participants without inflating the total number of hits (for example, if 2 local laboratories link their cases through a hit at state, both local laboratories and the state laboratory may all want to claim hits - a total of three hits - when only one hit occurred).

6.2.2 Solution: hit counting tracks two metrics in CODIS: the number of investigations aided (or 'IAs') by CODIS and the number of hits made by CODIS (see section 1.0 CODIS Terms and Abbreviations for definitions).

6.2.2.1 Investigations (or Identifications) Aided: The primary metric is the number of investigations (or identifications) aided. The number of investigations (or identifications) aided is a better measure of CODIS program performance than the number of hits since the effectiveness of CODIS is ultimately measured by the crimes it helps solve and unidentified persons it helps identify.

6.2.2.2 Hits: The secondary metric is the number of hits made by CODIS. Counting the number of hits gives laboratories credit for their investment in CODIS.

6.2.3 Rules of Hit Counting:

6.2.3.1 The following methods will be used to minimize the duplicate counting of national hits:

- For offender hits, the Casework Laboratory will report the number of investigations aided and the Offender Laboratory will report the number of offender hits;
- For forensic hits where one case is solved, the Laboratory with the unsolved case will report the number of investigations aided and the Laboratory with the solved case will report the forensic hit; and
- For forensic hits where neither case is solved, each Laboratory will report the number of investigations aided and the Laboratory with the first entered forensic profile should report the forensic hit to NDIS.

NOTE: **See also, the NDIS Procedure "CODIS Hit Disposition Reporting" from which these examples are taken.**

6.2.3.2 Rule #1: The level in the CODIS hierarchy (local, state, national) at which the hit occurs gets credit for the hit. This metric reflects the investment in and activity of the different levels of CODIS.

6.2.3.3 Rule #2: An offender hit disposition takes precedence over a forensic hit disposition when the hits occur during the same search. In the event where an unsolved case profile matches a solved case previously identified as an offender hit, the hit disposition will be

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“Forensic Hit” for that hit and all subsequent hits. Previous forensic hits will not be reclassified when they match an offender. Since offender hit dispositions take precedence, any new forensic to forensic matches (at SDIS or NDIS) shall be dispositioned as “Investigative Information”.

- 6.2.3.4 Rule #3: A hit is counted for each unique set of matching profiles where at least one of the matching profiles is from an unsolved case. Since it takes two samples for a hit to occur, the total number of hits equals the total number of samples minus one (N-1).
- 6.2.3.5 Rule #4: An investigation may be aided only once. Count the number of actual investigations CODIS has aided, *not* the number of times CODIS has assisted a particular investigation or investigations. This reflects a direct one-to-one relationship between the metric and cases involved. As a point of clarification, an investigation with profiles from more than once source may be aided only once. Laboratories may only count their own investigations as having been aided.
- 6.2.3.6 Rule #5: A single hit may aid more than one investigation. A single hit may associate several separate cases. Laboratories may claim credit for all of the cases aided within their jurisdiction.
- 6.2.3.7 Rule #6: An investigation aided must be associated with a hit. An investigation is aided if CODIS provides value to the investigation.
- 6.2.3.8 Rule #7: Only investigations of unsolved cases may be aided.
- 6.2.4 OCME tabulates both the types of hits (OH_S, OH_N, etc.) and investigations aided, and reports these to SDIS for confirmation against their tallies, though the credit for each goes to the offender lab and OCME, respectively.
- 6.2.4.1 Scenario examples and Corresponding Scorecard:

Example #1:

A no-suspect case is analyzed and an evidence profile entered into CODIS (OCME). It matches a profile from an offender lab (NY SDIS). NYPD reports that the match aids the investigation.

Disposition: Offender hit (OH_S)

Scorecard: OCME reports one investigation aided (IA) and NY SDIS receives one offender hit (OH_S).

Discussion: CODIS aided the no-suspect investigation and receives credit. It is an offender hit even if the offender was not subsequently arrested or charged. This hit is also counted in the event of a not-guilty verdict.

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Action: OCME sets the Source ID box to “Yes”. The evidence and offender profiles both remain in CODIS; and are uploaded to NDIS if they meet NDIS’ completeness and eligibility requirements.

Example #2:

A no-suspect case is analyzed and an evidence profile entered into CODIS (OCME). It matches a profile at SDIS from a solved case (Nassau County). The NYPD reports that the match aids their investigation.

Disposition: Forensic hit (FHs).

Scorecard: OCME reports one investigation aided. Nassau County reports one forensic hit (FHs) because their forensic sample resided in SDIS first.

Discussion: CODIS aided the no-suspect investigation and receives credit. It is a forensic hit even if the suspect was not subsequently arrested or charged. The hit is also counted in the event of a not-guilty verdict.

Action: OCME sets their specimen’s Source ID box to “Yes”. Both evidence profiles remain in CODIS and both are uploaded to NDIS assuming they meet completeness and eligibility requirements.

Example #3:

An evidence sample is submitted. The police report and/or the laboratory request form list a suspect’s name, but no sample was submitted for the suspect. When the evidence sample is analyzed and the profile entered into CODIS at OCME, a match is detected with an offender (NY SDIS). The offender is the same person as was listed in the paperwork. The NYPD reports this match aided their investigation.

Disposition: Offender hit (OHs)

Scorecard: OCME reports one investigation aided. NY SDIS receives one offender hit (OHs).

Discussion: Whether or not the case was considered a suspect or no-suspect case, CODIS aided the investigation and receives credit. Regardless of the reason there is no sample provided to OCME, CODIS provided assistance toward identifying the suspect. DNA and CODIS confirmed the investigator’s suspicion that the named suspect was involved in the incident.

Action: OCME sets the evidence profile’s Source ID to “Yes”. The evidence and offender profiles both remain in CODIS and both are uploaded to NDIS, assuming completeness and eligibility requirements are met.

Example #4:

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An evidence sample and a suspect buccal specimen are both submitted the same day. The profiles match and this information is reported as usual. When the profiles are entered into LDIS they also match there.

Disposition: Investigative Information.

Scorecard: Do not report here. No hits or investigations aided are counted. However, this information is tracked so that laboratory management can provide it to OCME management and City Hall.

Discussion: CODIS did *not* aid the investigation with this match; it was already known, because the samples were submitted together when the detectives used non-DNA information to find the suspect.

Action: OCME sets the Source ID to “Yes” on the evidence sample. The evidence and suspect profiles remain in LDIS. The evidence profile is uploaded to SDIS (and NDIS assuming completeness and eligibility requirements are met).

Example #5:

A no-suspect case is analyzed and entered into CODIS (OCME). At NDIS, it matches a profile from an arrestee sample (Virginia SDIS). The NYPD reports that the match aided the investigation.

Disposition: Arrestee Hit

Scorecard: OCME reports one investigation aided and Virginia reports one arrestee hit.

Discussion: CODIS aided the no-suspect investigation and receives credit.

Action: OCME sets Source ID to “Yes” for the evidence profile. The evidence and arrestee profiles remain in CODIS and the evidence profile may remain at NDIS (assuming it meets completeness and eligibility requirements). Arrestee profiles are allowed at NDIS if submitting state has an applicable law that allows it. Suspect profiles are currently *not* allowed at NDIS.

Example #6:

An evidence sample and a suspect buccal swab are submitted at the same time, and analyzed. The profiles do not match. Reports are written, reflecting that the submitted suspect does not match the evidence. When the suspect profile is entered into CODIS locally, it later matches a forensic unknown from a newer unsolved case.

Disposition: Offender hit (for the second case).

Scorecard: OCME reports one offender hit and one investigation aided.

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Discussion: This is a variation of Example #5. CODIS aided in the identification of a match and receive credit. To determine how many investigations were aided, the investigators must be contacted. On the assumption that the suspect eliminated for Case One actually had no connection with the case, only one investigation aided would be reported (for Case Two). Hence even though the suspect was submitted for Case One, the hit did not aid Case One. It is conceivable that the investigator believes that while the suspect did not leave DNA at the scene, he was, nevertheless, involved in Case One. Because of the suspect's association with Case Two, the true source of the DNA in Case One may now perhaps be identified. In this situation, both cases would be aided.

Action: The Source will be set to "Yes" for the forensic specimen from Case Two. The evidence and suspect profiles remain in CODIS, and the evidence profiles are uploaded to SDIS (and NDIS, assuming completeness and eligibility requirements are met). The suspect sample remains at the LDIS level only; suspects are not allowed at NY SDIS or at NDIS.

Example 7:

As in Example #4, an evidence sample and suspect buccal swab are submitted at the same time to be analyzed at OCME. The profiles match, reports are written and the match is reported. Several months after the profile is entered into CODIS, a match occurs at SDIS between the forensic profile and the suspect, now typed as an offender sample following conviction at trial for a case never tested at OCME. The name is the same for the S-file and the NY state offender sample.

Disposition: Conviction match.

Scorecard: Do not report. No hits or investigations aided are counted.

Discussion: CODIS did not aid the investigation and receives no credit for this match. The conviction match disposition is used even though these are two separate crimes. The offender was in the database for a case unrelated to the current case. The timing of the match is immaterial. It could have happened upon completion of the current case, or months or years later. This is the ultimate QC tool and has immense value to the laboratory and the database system, but it is not counted as a hit.

Action: OCME should previously have set Source ID for the forensic profile to "Yes" after the suspect hit. The evidence and offender profiles remain in SDIS (and NDIS assuming completeness and eligibility requirements are met) and the suspect profile remains at LDIS.

Example #8:

Continuing with the scenario in Example #7, the evidence profile goes to NDIS. A match is detected to an offender in New Jersey (or any other state). Information exchange between the OCME and the NJ lab determines that this is the same person.

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Disposition: Conviction Match.

Scorecard: Do not report. No hits or investigations aided are counted.

Discussion: The NDIS match did not aid the investigation and receives no credit for the match. Again this is the ultimate QC tool and has immense value to both laboratories and the database system, but not to the cases.

Action: OCME should previously have set the Source ID to "Yes". The evidence, offender and suspect profiles all remain in the database as before.

Example #9:

For various reasons, a case may have waited several months before it is analyzed and a CODIS profile is developed. When a no-suspect case at OCME is uploaded into CODIS, there is an offender match at SDIS. Upon notification of the match, the NYPD reports that the suspect had pled guilty and is serving a sentence; or that the prosecution has proceeded without need for DNA. DNA results were not involved in the suspect's prosecution. The offender and the suspect are the same person.

Disposition: Conviction match.

Scorecard: Do not report. No hits or investigations aided are counted.

Discussion: Initially, it appeared that CODIS aided the investigation by providing a name to a no-suspect case. The value of the CODIS hit to society may be debated. For hit counting purposes, however, CODIS did not aid the investigation and receives no credit for the hit.

The disposition in this example would be the same even if the suspect/offender had not gone through the trial process. A conviction match would apply if the agency said that the suspect had pled guilty. Clearly, CODIS strengthened the prosecution's case, but CODIS cannot take credit for developing the suspect for the case. This situation is different from that in Example #3 because in the current example the suspect has indicated guilt without DNA evidence. In Example #3 the plea has not been arranged and the prosecution has not begun; these activities may hinge on the existence of DNA results.

Action: OCME sets the Source ID box to "Yes". The evidence and offender profiles remain in CODIS and both profiles may be uploaded to NDIS assuming completeness and eligibility requirements are met.

Example #10:

A no-suspect case is submitted to OCME. Evidence is analyzed and entered into CODIS. No matches are detected. The police develop a suspect and submit a buccal swab to the lab for comparison. OCME's DNA analysis shows a match between the

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evidence and the new suspect's profile. The match is reported out and the DA's Office begins preparing for prosecution. Meanwhile, at NDIS a hit occurs to what turns out to be the same offender in California (or any other state).

Disposition: Conviction Match.

Scorecard: Do not report. No hits or investigations aided are counted.

Discussion: The NDIS match did not aid the investigation, since a suspect sample had already been matched "at the bench" to the evidence. The fact that the court had not yet convicted the suspect does not alter the disposition.

Action: OCME sets the Source ID to "Yes" after the match to the S-file. The OCME's evidence profile and the California offender both remain in CODIS.

Example #11:

A crime scene stain is submitted to the laboratory without any standards: victim, suspect, or elimination. When it is analyzed and entered into CODIS, a match to an offender is detected. Comparison to the paperwork in the file reveals that the profile belongs to a victim in the case.

Disposition: If this is an SDIS hit, use "User Defined #3". If this is an NDIS hit, use "Investigative Information".

Scorecard: Do not report. No hits or investigations aided are counted.

Discussion: The hit does *not* add information to identify a perpetrator, even though it may add value to the case by determining the source of that DNA sample.

Action: The source of the profile has been identified as the victim and is no longer eligible to remain in CODIS. The profile *must* be removed from CODIS, the hit is *not* reported out, and a *report* reflecting sample's database status must be issued; this can be accomplished either in the original case report if it has not yet been issued, or may require an additional report.

Example #12:

A *stranger* sexual assault case is submitted; there is therefore *no* suspect DNA sample. When the kit is analyzed and a profile entered into CODIS, a match to an offender is detected. Upon investigation, the police determine that the profile is from the victim's husband.

Disposition: Investigative Information.

Scorecard: Do not report. No hits or investigations aided are counted.

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Discussion: The match is to an “elimination individual” and does not add information to identify a perpetrator. The husband’s profile is not probative. The important point is that this is not an NDIS-countable hit.

Action: The source of the profile has been identified as a consensual partner and is no longer eligible for CODIS. The profile *must* be removed from CODIS. A *report* reflecting sample’s database status must be issued; this can be accomplished either in the original case report if it has not yet been issued, or may require an additional report.

Example #13:

A homicide case is submitted with some suspects’ oral swabs. An unknown bloodstain was identified from the evidence that did not match the victim or the suspects. Later, a match to an offender is detected in CODIS. Upon investigation after the hit notification, the police determine that the offender was in prison at the time of the murder but that he did have opportunity to leave the bloodstain at the scene at an earlier time. In other words, this sample can have had nothing to do with the homicide investigation. The hypothesis that the offender has a twin has been ruled out.

Disposition: Investigative Information.

Scorecard: Do not report. No hits or investigations aided are counted.

Discussion: The match is to an individual not involved in the case. The offender’s profile is not probative because he was in prison at the time of the homicide. Determining the source of the stain was important to the investigation and the prosecution of the perpetrator. It prevented the defense from arguing there was an unknown assailant that committed the homicide. The important point is that this is not an NDIS-countable hit and this sample should be removed from CODIS in the same way a match to an elimination known would be removed (see examples #11, 12).

Action: The source of the profile has been identified as not belonging to the perpetrator and is no longer eligible for SDIS and NDIS. The profile *must* be removed from CODIS.

Example #14:

OCME analyzes a suspected pattern of 4 unsolved robberies and 3 LDIS-only CPW cases, which are found to match each other prior to CODIS entry. They are entered into CODIS and a representative sample is sent to SDIS/NDIS (three of the four were LDIS-only and could not be sent to SDIS/NDIS). At SDIS, a hit to an offender is made.

Disposition: Offender Hit.

Scorecard: OCME receives 4 investigations aided; SDIS receives one Offender Hit.

Discussion: Four investigations are aided in this example since none of them had been

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previously aided by CODIS. Although 3 other cases in this example were not sent to SDIS/NDIS, all were aided by CODIS.

Note: If the pattern had existed for a period of time and the samples had already been involved in case-to-case hits (forensic hits already reported in hit-counting), this will affect the number of investigations aided reported with the offender hit, because each case can only be aided once by CODIS.

Example #15:

OCME analyzes an evidence stain and a suspect buccal swab. These match (benchwork match) and the evidence profile is uploaded to SDIS/NDIS. Westchester County analyzes evidence from a case there, and also a suspect buccal swab. When the two evidence profiles are searched at SDIS, they match.

Disposition: Investigative Information.

Scorecard: Do not report. No hits or investigations aided are counted.

Discussion: The same suspect committed a crime in two jurisdictions. In both cases, this suspect was developed without the aid of CODIS. Although the two profiles match in CODIS, the suspect was known to match already, and no credit can be given to CODIS.

Action: OCME and Westchester County should both set Source ID to “Yes”. The evidence profiles both remain in CODIS.

Example #16:

OCME analyzes four separate unsolved cases and the profiles are entered in CODIS. During the LDIS autosearch, they all unexpectedly match each other.

Disposition: Forensic Hit (x3).

Scorecard: OCME reports 3 forensic hits and 4 investigations aided.

Discussion: CODIS aided the no-suspect investigations and receives credit. It is a forensic hit even though no suspect is ever identified; or if a suspect is identified later, the hits count if the suspect is not subsequently arrested or charged. The hits are also counted in the event of a not guilty verdict.

Action: The evidence profiles remain in CODIS. Reporting analysts for the matching cases are notified of the candidate matches to be reviewed and reported appropriately.

Example #17:

One month after Example #16, there is a hit to a newly-entered offender at SDIS to this pattern.

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Disposition: Offender Hit.

Scorecard: OCME reports one offender hit and no investigations aided.

Discussion: Previous forensic hits are not reclassified when they match an offender (see rule #2). Since all four investigations were aided by the forensic hits from Example 16, no additional investigations can be aided by the offender hit. It is an offender hit even if the suspect is not subsequently arrested or charged. The hits are also counted in the event of a not-guilty verdict.

Action: The evidence profiles remain where they were in CODIS. "Source ID" status will be changed to "yes" for all 4 forensic samples.

Example #18:

A new OCME forensic sample is entered into CODIS and hits the four forensic samples from Example 16, and the offender from Example 17.

Disposition: Forensic hit at LDIS for the case-to-cases hit; State Defined #1 at SDIS for the offender hit.

Scorecard: OCME reports one forensic hit and one investigation aided.

Discussion: CODIS aided the new no-suspect investigation, and receives credit.

Action: All evidence profiles, and the offender sample, all remain where they were in CODIS. The new sample will go on to SDIS/NDIS assuming it meets completeness and eligibility requirements.

Example #19:

A local lab that uploads entire patterns into their SDIS analyzes 4 separate unsolved cases and enters the profiles into CODIS. When these are searched at SDIS, they all match the same offender.

Disposition: Offender hit.

Scorecard: Laboratory reports 4 offender hits and 4 investigations aided.

Discussion: CODIS aided the no-suspect investigations and receives credit.

Example #20:

In 2005 when only one case per pattern per lab was uploaded to SDIS, OCME makes a case-to-case local forensic hit between cases A and B. OCME correctly scores this as one local forensic hit, and two investigations aided. Suffolk County makes a case-to-case local forensic hit between cases C and D, and scores this correctly as one local

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forensic hit and two investigations aided. Between these two labs, there are 4 individual cases.

When an SDIS search is performed, a case-to-case state forensic hit occurs between OCME's case A and Suffolk's Case C (both labs having followed the procedure of only having uploaded one case per pattern from their jurisdiction). This hit should be scored as one forensic hit (with the lab owning the first case uploaded to state, reporting the forensic hit) and zero investigations aided (since they have already been aided). Now suppose that a month later, an offender was loaded into SDIS and matched cases A and C during a regular search. This is now scored as one offender hit and no investigations aided.

It is evident that CODIS aided 4 investigations total (two from OCME and two from Suffolk). The correct statistical tally for this series of hits between 4 cases would be a total of 4 hits (two local forensic hits, one state forensic hit, and one state offender hit; with 4 investigations aided.)

Example #21:

An OCME solved case (because of an S-file for a named suspect) matches (at NDIS) an unsolved case from Pennsylvania. According to the rules, only OCME should report the forensic hit for hit-counting. Pennsylvania should report one investigation aided for their hit-counting.

Example #22:

OCME submits a forensic unknown to SDIS/NDIS. Several months later, Hawaii submits a forensic unknown to NDIS and matches OCME's profile. OCME (having entered their profile first) reports one forensic hit and one investigation aided. Hawaii (having been aided by OCME's sample in the database) should only report one investigation aided.

A month later, NY-SDIS enters a convicted offender and matches OCME's sample during a state autosearch. NY-SDIS then uploads the offender to NDIS where it hits Hawaii's forensic sample. No investigations aided should be reported by either lab to NDIS for hit-counting. Both forensic cases had already claimed investigations aided; there should however be an OH_N between NY-SDIS and Hawaii. OCME should claim an OH_S.

Example #23:

OCME makes a case-to-case local Forensic Hit between unsolved cases A and B. OCME correctly scores this one local forensic hit and two investigations aided. When a state or national search is performed cases A and B match to a convicted offender. This should be scored as one offender hit and no investigations aided.

The next month, OCME analyzes a new unsolved case (case C) and enters it into CODIS (at LDIS). The local autosearch matches to the now-solved cases A and B. The

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OCME correctly dispositions the new match as one forensic hit and one investigation aided (see also Example #18) between cases A and C; and the redundant match between B and C as Investigative Information, with no investigation aided.

Discussion: Even though OCME knows case C would hit the same offender as cases A and B upon upload to SDIS, the OCME correctly dispositions the match as one offender hit and one investigation aided. When the sample is uploaded to state and generates a hit, no hits or investigations should be awarded (they occurred at the local level). The state hit to the offender should be dispositioned as State Defined #1.

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Scorecard for the OCME for the above examples:

Match Date	IA	FH _L	FH _S	FH _N	OH _S	OH _N	IA _S	IA _N	OH _L
Example #1					1		1		
Example #2			1				1		
Example #3					1		1		
Example #4	0								
Example #5	1					1			
Example #6	1								1
Example #7	0				0				
Example #8	0					0			
Example #9	0				0				
Example #10	0					0			
Example #11	0								
Example #12	0				0				
Example #13	0				0				
Example #14	0				1		4		
Example #15	0		0						
Example #16	4	3							
Example #17	0				1		0		
Example #18	1	1							
Example #19	0				4		4		
Example #20	2	1	0		1		0		
Example #21	0			1				0	
Example #22	0			1	1		0	0	
Example #23	3	1				2			
Total	12	5	0	2	10	3	10	0	2

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- 6.2.5 Hit counting statistics in the form of a CODIS Hit Counting Scorecard are to be submitted to the SDIS custodian no later than the 7th day of each month. The SDIS custodian double-checks the numbers from all the LDIS labs against their hit count, and then forwards the entire state's reconciled information to the NDIS custodian. In addition to tracking CODIS hits, the number of no-suspect cases that enter the Department of Forensic Biology each month are also tracked and reported to the SDIS custodian. NYPD Backlog and Biotracks cases are treated as no-suspect cases and reported in addition to the number of no-suspect Forensic Biology cases.
- 6.2.6 Missing persons hit-counting is designed to be as similar as possible to traditional hit-counting, but there are some necessary differences; matches and associations are defined below.

NOTE: This section draws heavily from the NDIS Operational Procedures Manual.

6.2.6.1 **Matches**

For searches involving missing persons or unidentified human (remains), some of the results can be defined as matches, while others are considered associations. When a search result involves profiles that may have originated from the same individual, the term match may be used. Examples of this include unidentified human (remains) matching an offender or arrestee, or a missing person matching to a forensic unknown. Confirmation of these types of matches results in a "hit" even though the terminology used in counting is different.

In most instances, for missing person "hits", the appropriate disposition is ID Pending, and the metric reported to NDIS by the laboratory responsible for the unidentified human (remains) or missing person is a Putative Identification. The laboratory responsible for the other sample may count on Identification Aided. For the purpose of hit-counting, Identifications can be aided only once. If unidentified human (remains) match to a forensic unknown, the laboratory responsible for the forensic sample may report the Identification Aided. If the remains subsequently match to an offender, it may result in a Putative Identification, but no further Identifications Aided shall be counted.

Matches between two profiles from unidentified human (remains) must be evaluated to determine if they were previously known to originate from the same source. This would be the case if Lab A processes the unidentified human (remains) using STR technology, uploads the profile to NDIS and subsequently sends the sample to Lab B for additional technologies. Lab B may also upload the STR profile, along with the additional technology, to NDIS. These matches shall be dispositioned as Duplicates. If a match between unidentified human (remains) is not the result of duplicate analyses, then the disposition shall be Investigative Information and confirmation shall proceed in a manner similar to forensic hits.

It is important to note that the disposition and metric do not conclusively state that

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identification has been made. Only the competent legal authority in each jurisdiction (Medical Examiner or Coroner) can issue a death certificate confirming the identity of the unidentified human (remains). If the laboratory obtains documentation that this has occurred, then the disposition can be updated to ID Confirmed and the metric updated to a Confirmed Identification. These changes do not need to be reported to NDIS, as Putative and Confirmed Identifications will be grouped together. **However, if a previously reported identification is later refuted by the legal authority, then NDIS must be informed to adjust the metric accordingly.**

6.2.6.2 Associations.

When a search in CODIS involves the Relatives of Missing Person or Pedigree Tree Indexes, the result is not considered to be a match. In these cases, the target and candidate profiles are not believed to have originated from a common source. Instead, the search indicates that the unidentified human (remains) may be those of the missing person sought by the relative(s). For this reason the term “association” is used.

Associations are produced by using an Identity Search for single family references. These results will appear in Match Manager. Pedigree Tree Searches produce a ranked list of associations of unidentified remains to each Pedigree. These are stored in Rank Manager. A confirmed association may still be considered a “hit” and shall be dispositioned as ID Pending. The rules for counting and reporting these hits are the same as matches.

6.2.6.3 Missing Persons Hit Counting Rules.

These apply to hits, not matches or associations.

Rule #1: The level in the CODIS hierarchy (Local, State, National) at which the hit occurs gets credit for the hit. This metric reflects the investment in and activity of the different levels of CODIS.

Rule #2: A hit involving a direct match takes precedence over a hit arising from an association when the hits occur during the same search. If more than one hit involving a direct match occurs during the same search, when an unidentified human (remains) hit is to an offender profile, it takes precedence over an unidentified human (remains) hit to a forensic profile. Any subsequent hits shall be dispositioned as Investigative Information.

Rule #3: A hit is counted for each unique set of unidentified human (remains) entered into CODIS. If a single investigation involves two sets of remains, then there may be up to two Putative Identifications and two Identifications Aided. Note that this is different than Rule #4 for Forensic Hits.

Rule #4: An identification may be aided only once. Count the number of actual

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identifications CODIS has aided, not the number of times CODIS has assisted a particular identification or identifications (e.g. reunification of separated remains). This reflects a direct one-to-one relationship between the metric and cases involved.

Rule #5: A single hit may aid more than one identification. A single hit may associate several separate cases. Laboratories may claim credit for all of the cases aided within their jurisdiction.

Rule #6: An identification aided must be associated with a hit. An investigation is aided if CODIS provides value to the investigation.

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