

FORENSIC BIOLOGY CODIS MANUAL

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4.0 PROFILE MANAGEMENT

4.1 CODIS Identification Number (Specimen ID Number)

4.1.1 Each profile entered into CODIS will have a unique identifier (specimen ID) with a maximum of 24 characters. These characters can only be uppercase letters, numbers, dashes (-), periods, or grant-tracking special characters (# or \$) as indicated below.

4.1.2 The standardized format for entering specimen information into CODIS is as follows:

Last 3 Digits of Voucher
or
Case Number - **PM[item number]** - **Sample Description** - **OT/Grant** - **Case Type**
Ex. 21-12345 or **OOJ** (2-6 Letters) **Code** **Identifier**
(no "FB")
or
OOJ

4.1.2.1 **Case Number:** The first eight to ten characters will encompass the Forensic Biology laboratory number (last two digits of the year, followed by a dash, followed by a four-digit number if the case is from 2006 or earlier, or a five-digit number if the case is from 2007 or later) followed by a dash. If the specimen is from a contract laboratory, the year will be preceded by a laboratory abbreviation, i.e., Bode Technologies (BT or BTB), Cellmark Diagnostics (CD) or Genescreen (GS).

4.1.2.2 **Vouchered items:** add the last three digits of the voucher followed by a dash.

4.1.2.3 **Postmortem items (no voucher number):** add "PM" followed by the item number followed by a dash, in place of the voucher number.

4.1.2.4 **Out-of-jurisdiction cases (no voucher number):** add "OOJ" followed by a dash, in place of the voucher number.

4.1.2.5 **Sample Description:** The final set of characters will be reserved for sample type and identification. Sample description may be shortened to comply with the 24-character limit.

4.1.2.5.1 **For non-Sexual Assault Kit evidence:** Add 2 to 6 letters and/or numbers that describe the item, the item number, and the stain designation followed by a dash.

4.1.2.5.2 **If there is only one item of that type in the case (e.g. one pair of jeans, one beer bottle, or one baseball cap)** the specimen ID does not need the item or stain number; however when a case has multiple samples or CODIS profiles, attempt to create specimen ID's that are easily distinguishable, e.g. REDCAP and BLUCAP rather than CAP1A and CAP1B.

4.1.2.6 **For Sexual Assault Kit (SAK) items and additional SAK evidence:** the abbreviated descriptions below should be used. For kit samples processed with Zygem, use the swab designation (e.g. VS) but no fraction.

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SAK Item	Abbreviated Description
Dried secretion	DS
Oral swab	OS
Vaginal swab	VS
Vulvar swab	VU
Cervical swab	CS
Anal swab	AS
Vaginal/Cervical	VC
Perianal swab	PA
Perianal/anal swab (no indication if one or both)	PAA
Penile swab	PS
Underwear	UW

Differential Fraction	Abbreviated Description
F1 (formerly called “Epithelial Cell Fraction”)	F1 (formerly EC)
F2 (formerly called “Sperm Cell Fraction”)	F2 (formerly SF)
Substrate Remains Fraction	SR

4.1.2.7 Missing and Unidentified Persons Cases: the specimen ID will follow the same general format as other casework:

- For the sample description: To differentiate between sample types, use **R** for Relatives of Missing Persons, **M** for Missing Persons (or Deduced Missing Persons) samples, and **U** for Unidentified Human Remains.
- **\$** - for cases worked with grant-funded supplies

4.1.2.7.1 Relatives of Missing Persons: the abbreviated descriptions below will be used for samples from relatives. If more than one sibling, other maternal relative or other paternal relative is submitted, designate each with a number after the abbreviated description:

- Mother described as **M**
- Father described as **F**
- Biological Sibling (brother or sister) described as **S**
- Other Maternal Relative described as **OM**
- Other Paternal Relative described as **OP**
- Spouse (other parent of child(ren) in common) described as **SP**

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- 4.1.2.7.2 **Missing Persons:** add 4-5 letters describing the item, item number, and/or cutting followed by a dash. This segment may need to be shortened to help the specimen ID comply with the 24-character upper limit.
- 4.1.2.7.3 **Unidentified Human Remains:** utilize “PM” followed by a dash in place of voucher
- 4.1.2.7.4 **Pedigree Trees:** case number followed by a dash; four numerals for month and day created, followed by a dash; and the letters “PT”. For a pedigree tree for case FB14-06802, created January 23, the pedigree tree ID would be 14-06802-0123-PT.
- 4.1.2.8 **Grant-Funded cases:** add the special character followed by a dash. This segment should be omitted from the specimen ID if neither condition applies. The first instance of grant assistance determines which symbol is used, it cannot be both.
- # - for cases examined, written, or tech reviewed on weekend overtime grant money
 - \$ - for cases worked with grant-funded supplies
- 4.1.2.9 **Case type indicator:** the last notation is a pair of letters indicating the case type. Do not add segments after this segment. This allows management or CODIS staff to query by crime type in the database. The two-letter case type indicator should always be the last segment of the specimen ID.
- AS** assault, attempted homicide, and related cases
BU burglary and related cases
DR drug possession and related cases
HO homicide cases
MP missing and unidentified persons cases
RO robbery, attempted robbery, and related cases
SA sexual assault and related cases
WE weapons possession and related cases
AU auto theft (grand larceny auto), unauthorized use of vehicle, and related cases
OT used for any case type not covered above
- 4.1.2.10 The above specimen identification system should not be deviated from unless it is necessary to distinguish two samples, or under unusual case situations. Even when you are using “MDA” or “MDB” as part of the 6-letter sample description segment, always end the specimen ID with the two-letter case type indicator if the sample is a Forensic Unknown, Forensic Partial, Forensic Mixture, Forensic Targeted, or Forensic SDIS Only specimen. For information on what criteria are required for entry into these specimen categories, please see CODIS Manual “[CODIS Terms and Abbreviations](#)”.

Examples

- **Example 1:** case no: FB21-00022, voucher N123456, item #1: purple shirt, stain 1B; assault. Specimen ID number will be: *21-00022-456-PS1B-AS*

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- Example 2: case no: FB00-1257, postmortem kit item PM 2F, vaginal swab, sperm cell fraction, homicide. Specimen ID number will be: *00-1257-PM2F-VSSF-HO*
- Example 3: case no: FB20-01034, voucher P124589, item #1B: glove, scrapings, burglary, examined on a weekend. Specimen ID number will be: *20-01034-589-GLSCR-#BU*
- Example 4: case no: FB11-05500, voucher 1000099832, item #1, auto theft case, cigar butt, sample amped using primers purchased on grant. Specimen ID number will be: *11-05500-832-CB1-\$-AU*.
- Example 5: Cellmark Diagnostics backlog case CD01-0001, voucher K321123, sexual assault kit underwear stain, sperm cell fraction, sexual assault, Male Donor A. Male Donor B and C also present on underwear stain. Specimen ID number will be: *CD01-0001-123-UWSFA-SA*
- Example 6: case no: FB11-01234, bone, PM1, unidentified human remains. Specimen ID number will be: *11-01234-PM1-U-MP*
- Example 7: case no: FB04-1234, voucher number K123456, brother and sister of Missing Person. Specimen ID numbers will be: *04-1234-456-S1-R-MP* and *04-1234-456-S2-R-MP*

- 4.1.3 Suspect profiles entered into LDIS will have specimen IDs of the form XXX-21-S00000. Suspects from 2006 and earlier will have specimen IDs of the form XXX-00-S000. Suspects from 2007 through early 2018 have the format XXX-07-S0000. This special format is intended to prevent the CODIS team and analysts from placing the suspect in the wrong index where it might be accidentally uploaded.
- 4.1.4 LDIS Only profiles entered into LDIS will have specimen IDs of the form LLL-13-00000. This special format is intended to prevent the CODIS team and analysts from placing an evidence profile that is ineligible for NDIS into an index where it might be accidentally uploaded past SDIS. Extensions such as –MDA or –FDA may be added to the end when there is more than one LDIS Only profile for a case to aid in distinguishing between the two. The specimen category for LDIS Only profiles is “LDIS Only”.
- 4.1.5 Lab Types profiles entered into LDIS will have specimen IDs of the form 12345. This format is intended to prevent the CODIS team and others from placing these known profiles in the wrong index where they might be accidentally uploaded and preserves the anonymity of the personnel whose profiles these are.

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4.2 General Guidelines for Entering STR Profiles into CODIS

(see also table at the end of this manual)

- 4.2.1 Procedures for determining STR typing results are detailed in the current Forensic Biology STR manual.
- 4.2.2 All STR profiles and mtDNA sequences that are CODIS eligible must undergo technical review prior to entry into LDIS. The technical review includes evaluation of associated positive and negative controls, the eligibility of the DNA profile for CODIS, as well as ensuring that appropriate exemplars and/or elimination samples have been requested at least once.
- 4.2.3 All core CODIS STR loci (prior to 1/1/2017, the original core 13; after 1/1/2017, the expanded core 20) and appropriate additional technologies as needed must be attempted on appropriate samples in order for that sample's data to be eligible for CODIS.
- 4.2.4 Eligibility for entry and upload
- 4.2.4.1 Refer to the sections below to determine profile eligibility. Profiles must contain enough data to minimize the opportunity for fortuitous, non-matching, candidate matches in order to be eligible for LDIS, SDIS and NDIS.
- 4.2.4.2 All partial or mixed evidence profiles, as well as all partial suspect profiles with information at 10 or fewer loci intended for LDIS, must satisfy a statistical threshold for match rarity. This is done by calculating the Moderate Match Estimate using the [COSTaR MME Calculator](#) (Refer to the "How to Use" tab within the document for instructions.). This calculation generates the number of expected matches a partial or mixed profile will generate if searched against a database of size N, composed of single-source specimens
- 4.2.4.3 LDIS: A minimum of 6 fully deconvoluted loci are necessary for search of, or entry into LDIS. All partial or mixed evidence profiles and suspect profiles with data at 10 or fewer loci must have an MME greater than or equal to the current LDIS database size rounded up to the nearest ten thousand (see COSTaR worksheet). If the MME value is less than the LDIS MME threshold the profile is not eligible for LDIS and should only be searched against Lab Types (refer to [4.6.3.1](#)).
- 4.2.4.3.1 NOTE: Without data for at least 6 original CODIS core loci, LDIS-only samples may not be searched against samples with non-Fusion loci (e.g. samples only typed in Cofiler, or partial profiles typed in Identifiler).
- 4.2.4.3.2 NOTE: Suspect profiles submitted in the "Suspect, Known" specimen category can only be entered into LDIS. Loci are either "INC" or fully deconvoluted in order to be entered into CODIS.
- 4.2.4.4 SDIS: To be eligible for upload into SDIS, in addition to fulfilling all of the LDIS requirements, the profile must have data (i.e. fully deduced, mixed, or partial locus) at a minimum of 6 of the original 13 CODIS core loci. All partial or mixed evidence profiles

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must have an MME greater than or equal to the current SDIS database size rounded up to the next hundred thousand in order to be eligible for SDIS (see COSTaR worksheet).

- 4.2.4.5 NDIS: To be eligible for upload into NDIS, in addition to fulfilling all of the SDIS requirements, the profile must have data (i.e. fully deduced, mixed, or partial locus) at a minimum of 8 of the original 13 CODIS core loci. All profiles intended for the Forensic Mixture and Forensic Partial indexes must have an MME greater than or equal to 10,000,000 (1E7) in order to be eligible for NDIS (see COSTaR worksheet).
- 4.2.4.6 For Missing Persons and Unidentified Human Remains cases, in order for upload to CODIS, Amelogenin is required along with the following minimum core loci:
- Unidentified Human Remains: 6 for SDIS, 7 for NDIS
 - Missing Persons and Deduced Missing Persons: 8 for SDIS and NDIS
 - Relatives of Missing Persons: 13 for SDIS and NDIS
- 4.2.5 The DNA result from each locus will be entered on the DB Profile documentation in the form p, q for heterozygotes (in ascending order) and p, p for homozygotes (for example, TH01 6, 7 or 6, 6).
- 4.2.6 Off ladder alleles above or below the allelic ladder are entered as < (lowest allele at that locus) or > (highest allele), respectively. The official standardized NDIS allelic ladder is as listed. The original 13 CODIS core loci are marked with an asterisk. The expanded 20 CODIS core loci are marked with 2 asterisks. The remainder of the listed loci are accepted but not required.

* CSF1PO <6, 6-15, >15
* D13S317 <8, 8-15, >15
* D16S539 <5, 5-15, >15
* D18S51 <9, 9-26, >26
* D21S11 <24.2, 24.2-38, >38
* D3S1358 <12, 12-19, >19
* D5S818 <7, 7-16, >16
* D7S820 <6, 6-14, >14
* D8S1179 <8, 8-18, >18
* FGA <18, 18-30, >30
* TH01 <5, 5-10, >10
* TPOX <6, 6-13, >13
* vWA <11, 11-21, >21
Amelogenin X,Y
**D19S433 <9, 9-17.2, >17.2
**D2S1338 <15, 15-28, >28
Penta E <6 6-24, >24
Penta D <2.2, 2.2-17, >17
**D1S1656 <9, 9-20.3, >20.3

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****D2S441** <9, 9-16, >16
****D10S1248** <8, 8-18, >18
****D12S391** <14, 14-27, >27
****D22S1045** <8, 8-19, >19
SE33 <4.2, 4.2-37, >37

- 4.2.7 In certain circumstances, a single obligate allele may be entered as p+. For single-source DNA profiles, this is allowable only as described in section [4.3.7](#). If this option is used, the profile must be placed in the Forensic Partial, Forensic Mixture, Forensic SDIS Only or LDIS Only index. Do not enter single obligate alleles (p+) for Suspect profiles. Loci entered into LDIS Suspect Known Category must be full or INC.
- 4.2.7.1 This convention may not be used for any known/exemplar samples entered into the CODIS database, whether they are LDIS categories such as Suspects or LabTypes, or samples uploaded to SDIS/NDIS, including Missing Persons, Relatives of Missing Persons, and Unidentified Human Remains samples.
- 4.2.8 Forensic mixture profiles shall not have more than 4 alleles at any locus.
- 4.2.8.1 No more than two alleles per locus (with the exception of one tri-allelic pattern to allow for genuine trisomy) may be used for DNA profiles in the following specimen categories: Forensic Unknown, Forensic Partial, Missing Persons, Relatives of Missing Persons, Suspects, Lab Types, and Unidentified Human Remains.
- 4.2.9 Only DNA data derived from analysis of NDIS accepted PCR loci/systems shall be entered into CODIS. NDIS accepted PCR loci/systems are referenced in the *FBI NDIS Standards for Acceptance of DNA Data*.
- 4.2.10 Only enter the complete genotype for AMEL. If the interpretation at AMEL is incomplete and a “DNA Donor” is being reported (e.g., not Male Donor A), AMEL is inconclusive.
- 4.2.11 Forensic Biology Laboratory reports that contain results eligible for entry into CODIS contain a statement indicating that this information has been added to and will be maintained in the CODIS system.
- 4.2.12 Currently, profiles developed using Low Copy Number amplification techniques are not eligible for entry into NDIS. They were, however, uploaded to NY-SDIS for searching, via the Low Copy Number specimen category of the Forensic SDIS Only Index. Samples in this SDIS Index are unmarked for any further upload (i.e. to NDIS).
- 4.2.13 When entering profiles from single source samples, these profiles can be entered into Forensic Unknown, Forensic Partial, Forensic Targeted, Forensic SDIS Only, or Forensic LDIS only specimen categories; however considerations must be made regarding the rules/eligibility for each respective category. ([See CODIS Terms and Abbreviations](#))

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4.3 Guidelines for Entering STR Profiles Derived from Mixed Samples into CODIS (see also table at the end of this section)

4.3.1 Mixtures refer to the situation where the DNA profile from the evidence is composed of alleles from more than one individual.

4.3.2 As many loci and alleles as possible should be included in the profile submitted to the database, while abiding by the specimen index.

4.3.3 When a locus can be only partially deconvoluted, use of the obligate allele designator, a “+”, aids in moderate stringency searches by preventing some of the spurious moderate matches possible at mixed loci. Use of required alleles limits the possible matches that are returned in a search. For example, a 13, 14, 15 would match 13; 14; 15; 13, 14; 13, 15; and 14, 15. If the mixture were entered as 13, 14+, 15, then a 14 would be required to appear in the other profile: a 14; a 13, 14; or a 14, 15.

NOTE: SPECIAL NOTE REGARDING OBLIGATES: a 13, 14+, 15 will not match a 13+, 15 at moderate stringency because the 14 does not appear in the second sample; even though the 13 and 15 are in both samples. Assuming one non-matching locus is allowed in the search configuration, one such instance as described would not prevent a match from being detected, however two such instances in the same pair of samples would prevent the match from being detected.

4.3.4 A locus may be designated inconclusive (“INC”) on the DNA Profile Evaluation form at the discretion of the interpreting analyst and the technical reviewer(s) if an ambiguity exists at that locus. This locus, however, can and should still be used in the confirmation process once a candidate match is made. See the [STR Interpretation Manual for PowerPlex Fusion \(3130xL\)](#) and the [Interpretation of PowerPlex® Fusion data run on 3500xL](#) for further guidance.

4.3.5 When entering profiles from mixed samples, these profiles can be entered into Forensic Unknown, Forensic Mixture, Forensic Partial, Forensic Targeted, Forensic SDIS Only, or Forensic LDIS only specimen categories; however, considerations must be made regarding the rules/eligibility for each respective category. ([See CODIS Terms and Abbreviations](#))

4.3.6 Type I mixture - the results are such that it is possible to determine/deduce a complete profile of a contributor at 6 or more loci. The deduced profile of the major contributor or the major component will be entered into LDIS. If the profile is partial or a mixture, it must meet the Moderate Match Estimation threshold.

4.3.6.1 Only if the allele intensities are such that the minor component can clearly be deduced at six or more loci will the deduced DNA profile of the minor component be entered into LDIS. If the profile is partial or a mixture, it must meet the Moderate Match Estimation threshold.

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4.3.7 Type II mixture - the results are such that it is not possible to determine/deduce a complete profile of a contributor at all loci; the allele intensities are such that the contributor can be deduced at some loci but not at other loci. Enter the deduced alleles at all deconvoluted loci. Any loci that cannot be deconvoluted can be entered as a mixture with the obligate allele indicated on the DNA Profile Evaluation Form with a "+". Because of possible allele sharing, include any alleles that might be attributable to the perpetrator, even if the victim also has those alleles.

4.3.7.1 There are two options for entering partially known loci when not all of the possible alleles at that locus are confirmed.

Type II mixture – **option one** for entry of a mixture locus: Enter the locus as "INC". This may be the method of choice when your profile contains good data at most of the loci, and the loss of one or two loci still leaves a profile which meets the Moderate Match Estimation thresholds.

Type II mixture – **option two** for entry of a mixture locus: If only one of the potentially two alleles of the profile at that locus can be determined (due to interpretation rules) or after all attempts to get results for a clearly visible but below threshold peak have failed, enter the one known allele with a "+". This is a CODIS method of designating that "another allele may be present at this locus." The advantage of listing one known allele over none or "INC" is that a match might be found at moderate stringency, but will prevent at least most of the spurious candidate matches which might occur if nothing at all is entered for that locus.

For example, a 10+ would match 9, 10; 10, 10; 10, 11... but would preclude anything that contained no 10 allele, for example, 9, 9; 9, 11; 9, 12... would not match, in contrast to an "INC", or no entry at that locus, which would allow any allele to appear at that locus and not be a mismatch.

This option is only meant to enhance a limited number of loci in a profile, for instance to enable a profile with 7 loci to meet the minimum amount (8 loci) needed in order to be searched at NDIS instead of being stopped at SDIS. Certain criteria must be met and documented in the case record in order to justify using this method:

- NOTE: The interpreting analyst and/or technical reviewer(s) submitting such a profile may be called upon to evaluate all candidate matches found when the profile is searched.

4.4 Eligibility Guidelines For Entering STR Profiles into LDIS

4.4.1 CODIS eligible profiles will be entered into LDIS by CODIS software-trained staff only. The profiles entered and/or imported into LDIS must fall into one of the following CODIS categories: Forensic Unknown; Forensic Mixture; Forensic Partial; Forensic Targeted; Forensic SDIS Only; Low Copy Number; Suspect, Known; Missing Persons Index; the

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Relatives of Missing Persons Index or the Unidentified Human (Remains) Index) (for procedural guidelines on how to enter a profile into LDIS, see the *FBI CODIS Training Manual or the relevant module in the online LMS*). For a list of NDIS-approved STR PCR kits, consult the current version of *NDIS Operational Procedures Manual*.

- 4.4.2 Profiles matching the victim or elimination samples (for example, a family member or a consensual sex partner) unambiguously will not be entered into CODIS. For a profile to be unambiguously attributed to the victim or elimination sample, an exemplar must be tested and compared to the profile in question. *It is not sufficient to make an assumption based on case information that the profile in question matches the victim or consensual sex partner.*
- 4.4.3 Evidence profiles that are clearly unrelated to a case or crime will not be entered into CODIS. For example, a sperm cell fraction profile from a condom from which a female profile was determined and the victim is excluded as the female contributor of DNA. This will be at the discretion of the CODIS Program Manager and CODIS Administrator. The determination can be aided using the *CODIS Guide to Determining What is Allowable for Entry into the Forensic Index at NDIS*.
- 4.4.4 Local suspect profiles reside in LDIS. They are not eligible for upload to higher levels of CODIS, nor are they eligible to be shared with any other laboratories through or outside of CODIS. They will be entered into LDIS with the following exceptions:
- 4.4.4.1 A properly executed court order concerning a specific sample dictates otherwise. See the [Attorney/Customer Requests](#) manual.
- 4.4.4.2 The exemplar was submitted subsequent to a partial match notification and does not match the case for which it was submitted.
- 4.4.5 Suspect files may be created from decedents of OCME cases who are also documented suspects in one or more criminal cases (with case contacts from NYPD or DAO). The resulting profiles will be entered into LDIS' Suspect, Known Index under the usual nomenclature and search conditions.
- 4.4.6 Entry of a profile into LDIS will be documented on the DB Profile documentation in the case record.
- 4.4.7 Upload of a profile to SDIS will be documented by including a copy of the CODIS Specimen Detail Report in the case record.
- 4.4.7.1 It is the duty of the case analyst, or the person certifying the file, to ensure that paper versions of this document are included into the case records before going to court or when certifying the case file.
- 4.4.8 Non-victim DNA profiles derived from evidence that are not eligible for SDIS/NDIS entry will be entered into the LDIS Only CODIS category (for example, a profile obtained from the clothing of a suspect, or a weapon taken directly from an arrestee).

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- 4.4.9 Y STR loci are accepted in CODIS but are not routinely entered into LDIS.
- 4.4.9.1 Y STR data is occasionally entered for missing/unidentified persons, for casework samples involved in partial match resolution, and for cases involved in familial search requests.
- 4.4.9.2 The Y STR standardized NDIS allelic ladder with loci is:
- DYS19** <10, 10-19, >19
 - DYS385** <7, 7-25, >25
 - DYS389 I** <10, 10-15, >15
 - DYS389 II** <24, 24-34, >34
 - DYS390** <18, 18-27, >27
 - DYS391** <8, 8-13, >13
 - DYS392** <7, 7-18, >18
 - DYS393** <8, 8-16, >16
 - DYS438** <8, 8-12, >12
 - DYS439** <8, 8-15, >15
 - DYS448** <17, 17-24, >24
 - DYS456** <13, 13-18, >18
 - DYS458** <14, 14-20, >20
 - DYS635** <20, 20-26, >26
 - YGATAH4** <8, 8-13, >13
- 4.4.9.3 The rapidly mutating Y STRs (DYS449, DYS518, DYS570, DYS576, DYS627, and DYF387S1) will not be entered into CODIS. These loci are known to have high mutation rates which could impact comparisons.
- 4.4.10 If a discrepancy is discovered once the profile has already been entered, a modification or deletion/re-import may be needed (case by case determination). Interpretation issues should be discussed with the appropriate Assistant Director and/or CODIS Administrator.
- ### 4.5 Modifying or Deleting an STR Profile from CODIS
- 4.5.1 Modification of data already entered into CODIS may be due to several reasons that include, but are not limited to:
- Additional testing has been completed on the sample.
 - An error was discovered regarding the profile.
 - The specimen ID has an error such that the sample needs to be renamed.
- 4.5.2 Once it has been determined that a profile must be modified in CODIS, a Profile Modification Form should be filled out and submitted to the CODIS staff for processing. The original Profile Modification form will be maintained in the Profile Modification form binder (physical or electronic) and a copy will be added to the case record.

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- 4.5.2.1 Please refer to the [CODIS Profile Modification](#) manual for instructions on how to submit the profile modification.
- 4.5.2.2 Profile modifications for paper-only files should be submitted on the traditional paper form. This includes all Backlog and Biotracks cases, Forensic Biology cases FB12-03799 and earlier, and Forensic Biology suspect cases FB12-S0949 and earlier with NO TESTING DONE WITHIN LIMS.
- 4.5.2.3 Profile modifications for LIMS-era files (FB12-03800 and later, and suspect files FBS12-00950 and later) must be submitted via the LIMS profile modification procedure, and a new dataset or DB profile submitted for importing by the CODIS staff. The modified dataset should include data for all previous loci as well as those being updated.
- NOTE: **NOTE OF CAUTION IF YOU ARE MAKING AN EXISTING LOCUS “INC”:**
Sending a locus as “INC” (blank) in a new dataset from LIMS, where there was previously one or more alleles present in the previous dataset(s), will NOT result in that locus being over-written to be “INC”. **The technical reviewer who submits the modification MUST notify CODIS staff by email to ensure that the locus/loci in question are modified by hand in CODIS.** The email does NOT replace the need for the modification form.
- 4.5.2.4 Cases from the paper-only era that are being modified due to additional testing done during the LIMS era, should be treated as LIMS-era cases. The specimen ID must be identical to that already present in CODIS to ensure the profile is updated and not present as two separate versions in the database. An example would be FB03-S567, with only Cofiler data, being updated using Fusion; name as XXX-03-S567 and submit all loci obtained. The technical reviewer will notify CODIS staff that the profile being sent is an update to a previously existing specimen.
- 4.5.3 Any modification to a DNA profile once it has been entered into LDIS will be documented in the appropriate profile modification log by CODIS staff or designee.
- 4.5.4 Administrative removal/expungement of data in CODIS may be due to several reasons:
- A profile entered is later determined to be from a victim, witness, consensual partner, family member, etc.
 - Documentation is provided for legal expungement.
 - The specimen ID has an error such that the sample needs to be renamed, and the sample has already been sent to LDIS/SDIS/NDIS.
 - A determination was made that the profile should not have been entered into CODIS due to a user problem (for example, the IA has failed a proficiency test during the time the data was generated) or a systemic laboratory problem.

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- Profiles from missing persons and/or relatives of missing persons are removed once a person is identified unless they will be needed to assist in identification of possible further remains and the data for the first-identified remain is not complete. Profiles from unidentified human remains will be removed only if the body recovered is intact.

- 4.5.4.1 Once it has been determined that a profile must be deleted from CODIS, a Profile Removal/Expungement Form must be filled out and submitted to the CODIS staff for processing. For paper files, the paper Profile Removal/Expungement form must be used. For LIMS files, use the Expungement process in LIMS. (See the “[Database Profile Expungement](#)” instructions in the “LIMS Process Manual” → “Interpretations and Database Profiles” folder).
- 4.5.4.2 CODIS staff or a designee will file the original form in the Case Deletion/Expungement form binder (physical or electronic) and a copy will be added to the case record. The deletion will also be recorded in the Upload Deletion/Expungement log at the time it is processed. The deletion portion of the reconciliation report from the upload will also be printed and placed in the Case Deletion/Expungement form binder confirming that the deletion was completed and attached in the LIMS record if applicable.

4.6 Routine Searches of LINKAGE and LDIS

- 4.6.1 Interpreting analysts and their technical reviewers will routinely compare appropriate preliminary DNA profiles to those in LINKAGE and LDIS and document the results as an event on the DB Profile page in LIMS. Indexes to be searched include Forensic Unknowns, Forensic Mixtures, Forensic Partial, Forensic SDIS Only, Forensic Targeted, LDIS Only, Pattern, Unidentified Human Remains, Suspect Knowns, and Lab Types.
- 4.6.2 LINKAGE SEARCHES
- 4.6.2.1 Log into the Forensic Biology Data Management System and click on “Linkage” on the left side menu.
- 4.6.2.2 Linkage searches your target entry exactly - it does not search at moderate or low stringency. Do not include obligates or location with 3 or more alleles.
- 4.6.2.3 Only enter the alleles from your interpretation at the CODIS core loci into each cell. Do not use a comma. Only place a single space between heterozygous alleles. For homozygotes, enter the allele once.
- 4.6.2.4 Click search
- 4.6.3 **Regular Searcher settings should be as follows** (click yellow wrench icon while in the Searcher Module to get to configuration menu):

- General: check box for “return all candidates”

Use metadata sex as match filter: check box

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- STR: check box

Minimum # of loci required to report a match: 6

Include Candidate Specimens that Match on All but __ Loci: 1

Use as Match Filter: check box

- mtDNA: don't check box
- Y-STR: don't check box
- Indexes to Search in:

Forensic

Forensic LDIS Only

Forensic Mixture

Forensic Partial

Forensic Targeted

Forensic SDIS Only

Lab Types

Pattern

Subject

Unidentified Human (Remains)

Candidate View: [None]

- Click OK to exit setup mode.
- Set Locus Display Order to "Master"
- Check the boxes for all Fusion loci (original CODIS core 13 plus the additional 9). Leave Amelogenin and SE33 unchecked.
- Ensure Stringency for all checked loci is set to "M" (moderate). If you need to change it from H or L, right-click.

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- Do “Save-as” for this Searcher configuration and name appropriately (e.g. “Local Forensic Search (use me)”.

4.6.3.1 Searcher settings for Lab Types Only searches (Click into the Searcher module, and then click yellow wrench icon to get to configuration menu):

4.6.3.1.1 This search is used when the sample only needs to be searched against Lab Types specimens (e.g. sample is under a protective order, QA/QC purposes)

- Settings: open the regular search you have saved in your profile
- Click off: all indexes EXCEPT Lab Types
- Click: OK
- Save-As: Lab Types Only Search (or something else obvious to yourself)

NOTE: add a note in the case communication log that the profile was checked against LabTypes

4.6.4 LDIS AutoSearches will be conducted after the addition of new profiles into LDIS and before an upload to SDIS. This search will serve to ensure that no intra-laboratory DNA matches were overlooked and to track local DNA hits using the CODIS system. LDIS AutoSearches will be performed by the CODIS staff only.

4.6.5 All LDIS AutoSearches will be conducted at moderate or high stringency using a minimum of six core loci. The default setting is moderate.

4.6.6 Samples with 10 or more loci will also be searched, allowing one locus to have either low-stringency or non-matching results (“one-mismatch search”).

4.6.7 All LDIS candidate matches will be examined. The CODIS staff will investigate any matches not already documented and ensure that all proper notifications are prepared, reviewed and made expeditiously. The CODIS group may return such matches to the analyst and technical reviewers who submitted the specimen and delegate the match notifications to them.

4.6.8 High/Moderate Match Stringency Examples

DB Profile Entry (target specimen)	Will Match (candidate specimen)	
	at High Stringency	at Moderate Stringency
9,9	9,9	9,Z
8,9	8,9	8,8 ; 9,9

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7,8,9+	n/a	7,9 ; 8,9 ; 9,9
7,9+	7,9	9,9
9+	9,9	9,Z
7,8,9,10	n/a	7,7 ; 8,8 ; 9,9 ; 10,10 ; 7,8 ; 7,9 ; 7,10 ; 8,9 ; 8,10 ; 9,10
INC	anything	anything

4.6.8.1 **NOTE:** When searching your target specimen at high stringency, candidate specimens will be returned only where all loci match at high stringency. When searching at moderate stringency, candidate specimens will be returned only where all loci match at either high or moderate stringency. The above table shows the combination of alleles, given your target specimen, that will return a high or moderate stringency loci match. For example, if searching at moderate stringency (the setting for searches done in Searcher), all above combinations (high and moderate) could result, with the respective match stringency denoted as “[H]” or “[M]” at each loci.

4.7 Uploading Profiles to SDIS/NDIS and Search Policies

4.7.1 All appropriate LDIS profiles will be uploaded to SDIS by the CODIS staff. Currently, New York State local DNA laboratories upload to SDIS five days a week, with the SDIS search performed shortly thereafter. Forensic STR Index, Unidentified Human (Remains) Index and Missing Person Index profiles containing 8 or more loci are searched at both high and moderate stringency provided they meet the MME threshold to be enrolled in NDIS. Profiles with too few loci or having MME values below the NDIS threshold are placed in the “Forensic SDIS Only” index.

4.7.2 LDIS profiles for upload to SDIS will be from evidentiary samples only. Under no circumstances will known human reference samples be uploaded to SDIS forensic indexes. Such profiles may be entered into the Missing Persons Index, the Relatives of Missing Persons Index, or the Unidentified Human Remains Index, if appropriate. Suspect or Lab Types samples are not eligible for any SDIS indexes and reside in LDIS indexes only.

4.7.3 All putative perpetrator profiles in a Forensic Biology DNA pattern will be uploaded to SDIS.

NOTE: Additional profiles from patterns will no longer be placed in the Other (pattern) Index in LDIS. Confirmed additional matches to the same offender are dispositioned as State Defined #1.

4.7.4 Uploads to NDIS will take place as scheduled by the SDIS custodian.

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4.8 Other Searches

4.8.1 Emergency Search and Upload Requests (EUSR)

- 4.8.1.1 The Emergency Search and Upload Requests (EUSR) functionality has replaced emergency manual keyboard search requests of SDIS and NDIS.
- 4.8.1.2 EUSR functionality allows NDIS participating laboratories to enroll/upload and immediately search a specific DNA specimen at SDIS and NDIS, without sending an incremental upload. This is not a replacement for incremental uploads.
- 4.8.1.3 EUSR should only be used for cases where timing is critical to the investigation, or high priority cases (e.g., public safety threat). The forensic specimen must be eligible for SDIS/NDIS pursuant to policies and procedures governing specimen eligibility (i.e., as if the specimen were regularly being uploaded during an incremental upload).
- 4.8.1.3.1 The following specimen categories are eligible for EUSR: Forensic Unknown, Forensic Partial, Forensic Mixture, Forensic SDIS Only, Forensic Targeted, and Unidentified Human Remains.

4.8.1.4 FOR CASEWORK ANALYSTS

- 4.8.1.4.1 If you have a specimen that you believe to be EUSR eligible, confer with your supervisor, manager, and contact the CODIS group.
- 4.8.1.4.2 A local keyboard search of LDIS must be performed before a specimen is considered for EUSR eligibility, to ensure there are no matches to known specimens at the local level.
- 4.8.1.4.3 If the specimen ID contains the following characters an error message will be generated:
 - 4.8.1.4.3.1 #, <, \$, +, %, >, !, ` , &, *, ' , |, {, ?, " , =, }, /, :, \, @, and blank spaces
 - 4.8.1.4.3.2 If a specimen ID has already been generated for the specimen with one of these special characters, please contact the CODIS group.

4.8.1.5 FOR CODIS GROUP

- 4.8.1.5.1 Before uploading an EUSR specimen, the State CODIS administrator and DCJS should be notified. Communication should continue with both agencies throughout the process.
- 4.8.1.5.2 Only one forensic specimen can be sent in an EUSR; if there are multiple specimens to be sent, they must be sent one at a time.
- 4.8.1.5.3 If a forensic SDIS only specimen indicates more than 10 matches after calculating MME, please notify the State CODIS Administrator before upload.

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- 4.8.1.5.4 The specimen enrolled in EUSR will be the Target Specimen, and a full autosearch will occur at SDIS and NDIS, based upon the original 13 CODIS core loci, and subject to the specimen category (i.e., forensic SDIS only specimen will only be searched at the State level). If an autosearch is currently running, the specimen will be placed in a queue to be searched next. The specimen will also be incorporated into the daily/weekly regular incremental autosearch schedule – there is no need to “re-upload” the specimen following enrollment in EUSR.
- 4.8.1.5.4.1 The EUSR evidence specimen will be searched against Forensic Unknown, Convicted Offender, Arrestee, Detainee, and Legal specimen categories. Forensic Mixture and Forensic Partial categories will be searched in the next regularly scheduled autosearch in order to prevent multiple, unintended reciprocal autosearches (e.g., all Forensic Mixture specimens searching against the enrolled specimen).
- 4.8.1.5.4.2 The EUSR unidentified human remains specimen will be searched against Convicted Offender, Arrestee, Detainee, Legal, Missing Person, and UHR categories.
- 4.8.1.5.5 To enroll a specimen in EUSR, select the specimen, right click, and select “Submit Emergency Upload and Search Request.”
- 4.8.1.5.6 Two EUSR Reconciliation Reports will be generated in Message Center – one from SDIS and one from NDIS.
- 4.8.1.5.7 If the specimen failed to be enrolled, a failure message will display in Message Center, and the reconciliation report will display the reason for rejection.
- 4.8.1.5.8 Any potential candidate matches that are returned will display via Match Messages in the Message Center. Matches should be evaluated and processed based on internal policies and procedures, but with an expedited time frame based on the immediacy/urgency of the case.

4.8.2 Laboratory to Laboratory Manual Keyboard Search Requests

- 4.8.2.1 NDIS participating laboratories may request a keyboard search of an NDIS eligible specimen from other LDIS laboratories. The request should be submitted to the SDIS laboratory and they may forward those requests to the LDIS laboratories.
- 4.8.2.1.1 These requests are fulfilled by completing a Laboratory to Laboratory DNA Search Request Form (found on the CODIS website). This form contains the profile, relevant case information, whether the profile is partial, the search stringency for each locus, and the reason for the search request. The form is submitted to the relevant State CODIS Administrator.

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- 4.8.2.1.2 Search requests from external laboratories of our LDIS are directed to the Local CODIS administrator, CODIS Manager, or laboratory director and are completed at their discretion. Search results are communicated directly with the requesting laboratory.
- 4.8.2.1.3 A manual keyboard search may only be requested once the profile is uploaded to SDIS.
- 4.8.2.1.4 Profiles that are requested to be searched must meet eligibility for CODIS entry, including having data at 7 original core loci and an MME threshold that meets 1 in 10 million. If a profile contains less than 6 original CODIS core loci, there should be justification in writing.
- 4.8.2.1.5 All requests from external laboratories will be documented and maintained, either in a binder or digitally on the network.
- 4.8.2.2 Requests from other labs to compare their forensic specimen to suspect specimens will not be approved and are not allowed. Only DNA profiles developed by the Department of Forensic Biology may be compared to suspects in LDIS. Requests from other labs should only be searched against Forensic LDIS specimens.
- 4.8.2.3 Keyboard search requests are only allowed for DNA profiles derived from evidence - DNA profiles from known individuals are not routinely allowed to be searched.
- 4.8.2.4 The Department of Forensic Biology does not routinely request keyboard searches of other SDIS laboratories. A request should only be made if there is a demonstrated and documented need to search another SDIS lab (e.g., public safety threat). If this is the case, analysts should contact their supervisor, manager, and the CODIS group with the request. The CODIS group will process all keyboard search requests.

4.8.3 International Searches

- 4.8.3.1 A forensic profile may be searched at a non-CODIS databank (e.g., Interpol). See the NDIS Procedures Manual for further information.
- 4.8.3.2 A non-U.S. forensic profile may be searched at NDIS upon request to the FBI and at their discretion. Such a profile may NOT be searched at LDIS.