This Manual is compiled of the following sections. If a section was revised during the year, each revision and date effective is listed. Ensure to use the appropriate effective date.

CODIS Manuals 2012

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Revision History

March 24, 2010 – Initial version of manual.

July 28, 2010 – Section 1 revised to add/update terms and abbreviations; Section 2 revised to reflect policy change on requesting exemplars (2.1); Section 3 revised to reflect the correct form name ("DNA Profile Evaluation Form") and to update profile eligibility documentation (3.1.1); Section 4 revised to reflect the correct form name ("DNA Profile Evaluation Form") and to add 4.2.9.a; Section 5 revised to reflect policy change to report all "suspect matches" with DNA Hits.

April 1, 2011 – Section 1 revised to add/update terms and abbreviations. Section 4 and Section 5 revised to reflect policy changes associated to the implementation of the partial match process.

July 1, 2011 – Section 4 revised. Specimen ID format revised to allow for better tracking of CODIS profiles uploaded using grant funding.

July 23, 2011 – Section 1, 4, 5, and 6 revised to add definitions and procedures for CODIS 6.1 and on how searches are done using CODIS 5.7.4 to accommodate Missing Person Samples.

October 3, 2011 –

Section 5: A paragraph was added to Section 5.4.3.1 specifying that if there are multiple national offender candidate matches, a single candidate match should be confirmed first. The remaining matches are confirmed subsequently. Additionally, minor revisions were made to other sub-sections.

Section 8: A new section, 8.4, was added that describes the database QA/QC checks.

November 29, 2011 – Section 5.4.3.1 was further revised to clarify the procedure for confirming multiple national offender candidate matches.

February 2, 2012 – Revisions to Sections 5.1 and 5.4.1 were made to clarify the procedure for transferring cases when a local match has been discovered.

May 21, 2012 – Revisions to Section 6 were made to conform to recent NDIS procedural revisions.

July 16, 2012 – Revisions to Section 1 through 5 for OCME LIMS implementation. Removed references to specific hard-copy forms such as the DNA Profile Evaluation Form. Inserted LIMS or generic references in its place. Added definition for "LIMS."

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OFFICE OF CHIEF MEDICAL EXAMINER
NEW YORK CITY
DEPARTMENT OF FORENSIC BIOLOGY

FORENSIC BIOLOGY
CODIS MANUAL

Approving Authority:
Marie Samples, Assistant Director, CODIS Operations

Document	Effective Date	Revision History
CODIS Manual	3/24/2010	Initial Version of Procedure
CODIS Forms	N/A	N/A
Sample Letters (not controlled)	N/A	N/A

9 NYCRR Part 6192	The policy which provides for the establishment and operation of the DNA Identification Index in New York State.
ASCII	**A**merican **S**tandard **C**ode for **I**nformation **I**nterchange. Text-only, with no formatting such as tabs, bold or underlining.
Accredited laboratory	a DNA laboratory that has received formal recognition that it meets or exceeds a list of standards, including the FBI Director's Quality Assurance Standards, to perform specific tests by a nonprofit professional association of persons actively involved in forensic science that is nationally recognized within the forensic science community in accordance with the provisions of the Federal DNA Identification Act (42 U.S.C.§14132) or subsequent laws.
Administrative removal	The deletion of a DNA record upon verification of the fact that the DNA record is not eligible for inclusion in SDIS and/or NDIS.
Allele	In classical genetics, one of the alternate forms of the gene at a particular locus. In DNA analysis, the term "alleles" is commonly extended to include DNA fragments of variable length and/or sequence which may have no known transcriptional product but are detected in a polymorphic system.
Arrestee	The known sample from a person who has been arrested and in accordance with the law of the applicable jurisdiction is required to provide a DNA sample for analysis and entry into a state DNA database. The term "arrestee" includes persons who have been charged in a formal criminal instrument, such as an indictment.
Arrestee Index	An Arrestee Index consists of DNA records of persons who have been arrested or indicted with a crime and are required by law to provide DNA samples.
Assessment	A review of a laboratory, conducted by the FBI's CODIS Unit, to ensure compliance with the NDIS Operational Procedures and State/Federal law with respect to the laboratory's participation in NDIS.

Autosearcher	A CODIS program that automatically searches all DNA profiles in a user specified index against all profiles in one or more other user specified indexes.
Biological Child	The CODIS specimen category for DNA profiles generated from known reference samples provided voluntarily by an adult child or provided with the parental/guardian consent for a minor child of a reported missing person. The DNA record for this specimen category is stored in the Relatives of Missing Person Index. These DNA profiles are removed once the individual for whom the samples were submitted has been identified or if the individual voluntarily providing the reference sample is determined not to be related to the missing person
Biological Father/Mother	The CODIS specimen category for DNA profiles generated from known reference samples provided voluntarily by the biological father/mother of a reported missing person. Profiles in this specimen category are stored in the CODIS index known as "Relatives of Missing Persons Index." These DNA profiles are removed once the individual for whom the samples were submitted has been identified or if the individual voluntarily providing the reference sample is determined not to be realted to the missing person
Biological Sibling	The CODIS specimen category for DNA profiles generated from known reference samples provided voluntarily by the biological sibling of a reported missing person. Profiles in this specimen category are stored in the CODIS index known as "Relatives of Missing Persons Index". These DNA profiles are removed once the individual for whom these samples were submitted has been identified or if the individual voluntarily providing the reference sample is determined not to be related to the missing person.
Cambridge Reference Sequence	The CRS is the standard sequence used in mitochondrial DNA typing to which other mitochondrial DNA types are compared. Mitochondrial DNA profiles are reported as differences from the standard reference sequence [Anderson, S., et al. Sequence and organization of the human mitochondrial genome. *Nature* 1981; 290:457-465].

Candidate Match	A possible match between two or more DNA profiles discovered by CODIS software. A qualified DNA analyst from each affected laboratory must verify a candidate match. **Candidate matches must complete a confirmation process before being reported as a match or hit.**
Candidate Profile	A DNA profile matching the target DNA profile (see target DNA profile).
Case Disposition	The final outcome (confirmed conviction, offender hit, forensic hit, etc.) of a criminal case aided by CODIS.
Case Report	A report generated by a forensic laboratory documenting the results of the analyses of the crime scene evidence.
Casework Laboratory	A forensic DNA laboratory responsible for DNA profiles developed from crime scene evidence.
CJIS-WAN	The FBI's **C**riminal **J**ustice **I**nformation **S**ervices **W**ide **A**rea **N**etwork that provides communications network for the United States law enforcement community. Originally designed to support the Integrated Automated Fingerprint Identification System (IAFIS), the FBI is expanding the scope of the CJIS-WAN to include all federal, state and local crime laboratories participating in the National DNA Index System.
CMF	**C**ommon **M**essage **F**ormat, an ASCII text file format necessary for importing data into CODIS.

CODIS	The COmbined DNA Index System administered by the FBI. CODIS links DNA evidence obtained from crime scenes, thereby identifying serial criminals. CODIS also compares crime scene evidence to DNA profiles obtained from offenders, thereby providing investigators with the identity of the putative perpetrator. In addition, CODIS contains profiles from missing persons, unidentified human remains and relatives of missing persons. There are three levels of CODIS: the Local DNA Index System (LDIS), used by individual laboratories; the State DNA Index System (SDIS), used at the state level to serve as a state's DNA database containing DNA profiles from LDIS laboratories; and the National DNA Index System (NDIS), managed by the FBI as the nation's DNA database containing all DNA profiles uploaded by participating states.
CODIS Administrator	An employee of the laboratory responsible for administration and security of the laboratory's CODIS at a laboratory performing DNA analysis on forensic and casework reference samples. This is also a defined role within the software.
CODIS Core Loci	The 13 autosomal DNA loci that are accepted and required by CODIS for a particular DNA testing method. Currently the STR core loci are CSF1PO, D13S317, D16S539, D18S51, D21S11, D3S1358, D5S818, D7S820, D8S1179, FGA, TH01, TPOX, and vWA. D19S433, D2S1338, Penta E and Penta D are accepted but not searched, as they are NOT CODIS core loci.
CODIS Information Technology (IT) User	A government employee of a CODIS laboratory who has login access to the CODIS system for computer hardware/software and telecommunications maintenance purposes but who is not authorized to add, modify or delete DNA records in CODIS.
CODIS Custodian/Supervisor	A member of the CODIS staff responsible for overseeing the CODIS system and all its functions (also called "LDIS Custodian"). This person fulfills the role of Casework CODIS Administrator as defined by the FBI QA Standards.

CODIS User	A government employee who: (1) has login access to the CODIS system and is authorized to read, add, modify or delete DNA records in CODIS; or (2) is a qualified DNA analyst responsible for producing DNA profiles stored in NDIS. This is a defined role within the software.
CODIS User Plus	An CODIS User who has also been granted the ability to edit the assigned analyst of a profile. This is a laboratory-defined role within the software.
Contract Laboratory	A laboratory, usually in the private sector, that performs DNA analyses under contract to a forensic laboratory.
Control Certification Form	This document certifies that the positive human DNA control(s) and the negative controls satisfy the requirements established by NIST. One document must be completed and submitted annually to the SDIS Custodian before DNA profiles can be uploaded into SDIS.
Cold Hit	Two DNA profiles matching with no prior indication that the profiles are related.
Composite DNA Profile	A DNA profile generated by combining typing results from different loci obtained from multiple injections of the same amplified sample and/or multiple amplifications of the same DNA extract. When separate extracts from a given evidentiary item are combined prior to amplification, the resulting DNA profile is not considered a composite profile. Unless there is a reasonable expectation of sample(s) originating from a common source (e.g., duplicate vaginal swabs, known reference samples, or a bone), allelic data from separate extractions from different locations on a given evidentiary item should not be combined into a composite profile.

Convicted Offender	The CODIS specimen category for a DNA profile generated from any person who has been convicted of a crime in federal, state, and/or local courts where the applicable law permits establishment of a DNA record for this person. In New York State, this is a person convicted of one of the crimes listed in Executive Law, Section 995(7). Profiles in this specimen category are stored in the CODIS index known as the “Convicted Offender Index” (or Offender Index). As of June 2006, all convicted felons in New York must give a sample to the database.
Convicted Offender Index	A Convicted Offender Index consists of DNA records from offenders convicted of qualifying state crimes and juveniles required by the relevant jurisdiction to provide DNA samples.
Convicted Offender Lab	A forensic DNA laboratory responsible for DNA profiles developed from Convicted Offender samples. In New York State, this is the New York State Police Forensic Investigation Center in Albany.
Convicted Offender Sample	A biological sample containing DNA that is collected from a designated convicted offender for the purpose of DNA profiling.
Convicted Offender Profile	A DNA profile generated from a convicted offender sample. These DNA profiles are put into the CODIS specimen category “Convicted Offender” and are stored in CODIS index known as the “Convicted Offender Index.” These profiles establish an index of DNA identification records that are searched for matches against the DNA profiles generated from crime scene evidence.
Conviction Match	The DNA profile generated from crime scene evidence matches a DNA profile from a convicted offender, but the offender has already been convicted of the crime for which that evidence was collected.

Criminal Justice Agency	A criminal justice agency is an agency or institution of the federal, state, or local government, other than the office of the public defender, which performs as part of its principal function, activities relating to the apprehension, investigation, prosecution, adjudication, incarceration, supervision or rehabilitation of criminal offenders. For purposes of participation in the National DNA Index System, the DNA Identification Act of 1994 was amended by Public Law 106-546 to include the Secretary of Defense in accordance with 10 U.S.C. §1565.
Criminal History Record	Documents generated by DCJS that contain arrest, charges, conviction, sentence, location and identifying information of a convicted offender.
DAO	Stands for District Attorney's Office. There is one in each of the five boroughs of New York City.
Databank Coordinator	An employee or designee of the Division of Criminal Justice Services responsible for administrative requirements related to the New York State DNA Databank.
DCJS	Stands for Division of Criminal Justice Services. Acts as a liaison between local New York laboratories and the New York State Police Laboratory. DCJS manages the program responsible for collection of offender samples in New York State, handles requests to expedite samples and database searches and handles legal requests for convicted offender information.
DCJS Match Letter	A letter generated by DCJS after a match between a forensic DNA profile and a New York State Police convicted offender profile has been confirmed. The purpose of this letter is to notify the laboratory of a confirmed match, provide case and agency information, the identity of the offender, and current offender location. The DCJS Match Letter is provided to the DAO's upon request.

Deduced Missing Person	The CODIS specimen category for DNA profiles generated from examining reference samples (for example, toothbrush, hair brush) of a reported missing person. Profiles in this specimen category are considered reference samples and are stored in the CODIS Missing Person Index. This index is searched and compared against the Relatives of Missing Persons Index and the Unidentified Human (Remains) Index.
Detainee	The known sample from a non-United States (U.S.) person detained under the authority of the U.S. and required by law to provide a DNA sample for analysis and entry into a state/national DNA database.
Detainee Index	Detainee Index consists of DNA records from non-United States (U.S.) persons detained under the authority of the U.S. and required by law to provide a DNA sample.
DNA Analysis Backlog Elimination Act	Authorized the collection of DNA samples from persons convicted of specified Federal Felony offenses, certain District of Columbia convicted offenders, and military offenders.
DNA Analyst	An employee that has successfully completed the laboratory's training requirements for casework or database, known or casework reference sample analysis, passed a competency test, and had entered into a proficiency testing program in accordance with the FBI's *Quality Assurance Standards for Forensic DNA Testing or DNA Databasing Laboratories.* This individual conducts and/or directs the analysis of samples, interprets data and reaches conclusions. See also, Interpreting Analyst; Qualified DNA Analyst.
DNA Databank	The New York State Identification Index (as used throughout Executive Law Section 995) comprised of DNA profiles in the Convicted Offender index, the Forensic index and the Missing Persons index.

DNA Identification Act	DNA Identification Act of 1994; 42 U.S.C. §14132, as amended by the DNA Analysis Backlog Elimination Act of 2000, the Justice for All Act of 2004 and the DNA Fingerprint Act of 2005.
DNA Profile	The genetic constitution of an individual at defined locations (also known as loci) in the DNA. A DNA type derived from nuclear DNA typically consists of one or two alleles at several loci (e.g., short tandem repeat loci). The DNA type derived from mitochondrial DNA is described in relation to the revised Cambridge Reference Sequence (Nature Genetics 1999, 23, 147). Also known as a DNA type.
DNA Record	A database record that includes the DNA profile as well as data required to manage and operate NDIS, i.e., the Originating Agency Identifier which serves to identify the submitting agency; the Specimen Identification Number; and DNA personnel associated with the DNA profile analyses.
Elimination Sample	A biological sample from a known individual (commonly a husband or consensual partner), other than the alleged perpetrator or victim, which is analyzed for purposes of identifying those portions of a forensic DNA profile attributable to the alleged perpetrator. This DNA profile for this specimen category **may** be stored at the state and/or local levels but is not eligible for upload to NDIS. Such samples are considered to be evidentiary.
Employee	A person: (1) in the service of the applicable federal, state or local government, subject to the terms, conditions and rules of federal/state/local employment and eligible for the federal/state/local benefits of service; or (2) formerly in the service of a federal, state, or local government who returns to service in the agency on a part time or temporary basis. For purposes of a vendor laboratory, an employee is a person in the service of a vendor laboratory and subject to the applicable terms, conditions and rules of employment of the vendor laboratory.

Equivalent Allele Parameter	For PCR/STR, this parameter is used to determine whether a target allele matches a candidate allele. It is a PCR value that is defined to be the same as another PCR allele value. Equivalent allele values are reciprocal. For instance, at TH01, 9.2 = 9.3 = 9.x = 10 with respect to searches. Equivalency can be set by the administrator. During review of a candidate match the reviewer must check whether the values are indeed equivalent.
Exact Match	An association between two profiles (single-source, fully deconvoluted, partially deconvoluted, or mixtures) that concludes that the two profiles, or components of the profiles, are the same.
Executive Law Article 49-B Section 995	Provisions of New York State law establishing the Commission on Forensic Science and the DNA Identification Index.
Expert System	The software program or set of software programs that interprets the data generated from DNA analysis instrument/platform in accordance with the laboratory-defined quality assurance rules and accurately identifies the data that does or does not satisfy such rules.
Expungement	The deletion of a DNA profile at the state and/or national index levels in response to the following: (1) a court order that has overturned a convicted offender's conviction for a qualifying offense; (2) a court order establishing that charges were dismissed or resulted in acquittal, or no charges were filed within the applicable time period; (3) a death certificate or other document indicating that human remains have been identified;(4) if the missing person corresponding to the reference sample from a relative has been id
FBI	The **F**ederal **B**ureau of **I**nvestigation is the federal agency authorized by the DNA Identification Act of 1994 to issue quality assurance standards governing forensic testing and DNA databasing laboratories and to establish and administer the National DNA index System (NDIS).

FB-LDAS or LINKAGE	Forensic Biology Local DNA Analyses System (LINKAGE) - the Paradox DNA database used to search preliminary DNA results for case links. LINKAGE contains both casework non-mixture profiles and suspect profiles.
Forensic DNA Laboratory	Any forensic laboratory operated by the state or unit of local government that performs forensic DNA testing on crime scene evidence or materials derived from the human body for use as evidence in a criminal proceeding or for purposes of identification (Executive Law section 995(2)).
Forensic DNA Profile	A DNA profile generated from the testing of crime scene evidence. These profiles are from persons whose identities are not known with certainty and who left DNA at the scene of a crime or whose DNA was carried away from the scene of a crime. These profiles are put in the CODIS specimen category "Forensic Unknown". Profiles in this category are stored in the CODIS index known as "Forensic STR Index".
Forensic DNA Testing	Any test that employs techniques to examine DNA derived from the human body for purpose of providing information to resolve issues of identification (Executive Law section 995(2)).
Forensic Hit (FH)	CODIS case disposition when two or more forensic samples are linked; also called a case-to-case hit.
Forensic Index	A Forensic Index consists of DNA profiles originating from and associated with evidence found at crime scenes. For example, evidence associated with a crime scene includes DNA that may be carried away from a crime scene. The Forensic Index contains the specimen categories Forensic Unknowns and Forensic mixtures; and at the New York State level, Low Copy Number samples.

Forensic Mixture	A specimen category in the CODIS software that is stored in the Forensic Index and originates from a forensic sample (biological sample found at the scene of a crime) that contains DNA contributed from more than one source.
Forensic Match Letter	A letter from a laboratory documenting a confirmed Forensic Match. This letter provides information regarding the investigating agency and offender information (for solved cases).
Forensic Obligate Index	An index that contains the specimen category Required Alleles, and contains six to nine loci, searched at moderate stringency. Profiles in this index are only searched at SDIS, they have too few alleles to be uploaded to NDIS.
Forensic STR Index	The CODIS index that contains forensic DNA records.
Forensic Sample	A biological sample originating from and associated with a crime scene. For example, a sample associated with a crime scene may include a sample that has been carried away from the crime scene.
Forensic Unknown	The CODIS specimen category for forensic DNA profiles generated from the testing of crime scene evidence. Profiles in this specimen category are stored in the CODIS index known as "Forensic STR Index."
Heteroplasmy	The occurrence of more than one mitochondrial DNA profile (mitotype) arising from a particular tissue(s) within an individual; exhibiting more than one base at a particular nucleotide position.
High Stringency	The number of alleles and the corresponding allelic values are the same between two DNA profiles at a given locus.
High Stringency Match	All alleles at all loci match at high stringency. A confirmed match between two or more DNA profiles. Hits can occur at or between any level (local, state and national) in the CODIS hierarchy. Hits can be a Forensic Hit, an Offender Hit, an Arrestee Hit (some states), or a Suspect Hit (Forensic Biology only).

Homopolymeric Regions	The occurrence of variable lengths of the same nucleotide in a length of mtDNA (i.e. CCCCCC), these generally occur around the region of 16183-16193 in HV1 and 303-309, 311-315 in HV2.
Hypervariable Region I	A segment of increased variability in the mitochondrial DNA control region; the common nucleotide positions used in forensic mtDNA typing are 16024 to 16365.
Hypervariable Region II	A segment of increased variability in the mitochondrial DNA control region; the common nucleotide positions used in forensic mtDNA typing are 73 to 340.
Identification Confirmed	ID confirmed. Disposition in NG CODIS when an individual is identified and confirmed; metadata and other information such as a copy of the death certificate support the confirmation of the identification.
Identifying Information	Information on a Convicted Offender's personal characteristics and ID numbers, e.g. name, NYSID#, DOB, SS#, etc. Identifying Information is prohibited in CODIS.
Identification Pending	ID pending. Disposition in NG CODIS when an individual's identification is still in the process of being confirmed.
Index Offense	An offense defined in Executive Law Section 995, conviction of which determines eligibility for inclusion in the State DNA Databank.
Indictment	A formal written accusation originating with a prosecutor and issued by a grand jury against a party charged with a crime.
Interpreting Analyst	Forensic Biology analyst responsible for interpreting the DNA results in a case. Interpreting Analysts are CODIS analysts.
Investigating Agency	See Submitting Agency.

Investigations Aided (IA)	A criminal investigation equates to a case, which equates to a submission to a laboratory. An investigation aided for a casework laboratory is the number of cases submitted to the lab that were assisted by CODIS. Investigations aided = Investigations assisted = Cases aided = Cases assisted.
Juvenile	The known sample from a juvenile (as that term is defined by the relevant jurisdiction) who is required by state law to provide a DNA sample for analysis and entry into a state DNA database. The DNA profile for this specimen category is stored in a Convicted Offender Index.
Keyboard Search	A manual search of CODIS initiated by a CODIS user. In SDIS or NDIS the search is initiated by the SDIS or NDIS Custodian. In LDIS the search is done by a member of the CODIS group.
Keyboard Search Request	A request from an agency for a keyboard search of the DNA Databank at LDIS, SDIS or NDIS. This letter includes all of the information relating to the DNA profile, the requesting agency and certification of the control values.
Keyboard Search Result Letter	A letter from the Databank Coordinator documenting the results (match/no match) of the Keyboard Search.
Known Sample	Biological material whose identity or type is established. Examples of known samples would be a buccal specimen from a victim or suspect; or a sample contributed by the close biological relative of a missing person.
Laboratory	A facility: (1) employing at least two full time employees who are qualified DNA analysts; and (2) having and maintaining the capability to perform the DNA analysis of forensic and/or casework reference samples at that facility.
LDAS	The **L**ocal **D**NA **A**nalysis **S**ystem, a Paradox database which contains the local DNA profiles. The LDAS for Forensic Biology contains casework non-mixture (or deduced) forensic DNA profiles generated from casework and DNA profiles from suspects developed during the course of criminal investigations. This database is commonly called "LINKAGE."

LDIS	The **L**ocal **D**NA **I**ndex **S**ystem contains the DNA records selected from LDAS for searching for DNA matches and (for those eligible) for inserting into higher level (SDIS and NDIS) CODIS indexes. LDIS also contains DNA records for profiles not suitable for entry into LINKAGE, such as non-deduced mixtures or partial profiles.
LAB-TYPES	A database which contains DNA profiles from Department of Forensic Biology staff, known contaminant DNA profiles, and other DNA profiles from known individuals (such as janitorial staff).
Legal (sample)	The known reference sample from a person whose DNA sample is collected under applicable legal authorities, provided that DNA samples that are voluntarily submitted solely for elimination purposes shall not qualify as a Legal specimen. An example of a Legal specimen is a sample collected from a person found not guilty by reason of insanity who is required by the relevant state law to provide a DNA sample for analysis and entry into a state DNA database. The DNA profile for this specimen category is stored in a Legal Index.
Legal Index	A Legal Index consists of DNA records of persons whose DNA samples are collected under applicable legal authorities.
LINKAGE	See LDAS.
LINKAGE User	A laboratory employee who: (1) has login access to the LDAS/LINKAGE system and is authorized to read, add, modify and/or delete DNA records in it; or (2) is a qualified DNA analyst responsible for producing DNA profiles stored in LDAS/LINKAGE.

Low Copy Number or Low Template DNA Analysis	As defined by NDIS, based upon a laboratory's internal validation, any DNA typing results generated from limited quantity and/or quality DNA template using conditions that have demonstrated increased stochastic effects are defined as Low Template or Low Copy DNA analyses. The stochastic effects which may be observed in DNA samples subjected to these conditions include allelic drop-in or drop-out, increased stutter and increased intra-locus peak height imbalance. When used to analyze limited quantity and/or quality DNA template below the stochastic thresholds, Low Template or Low Copy DNA conditions may include the following: additional amplification cycles, post-amplification purification, reduced reaction volume, injection enhancement by increased voltage or time, and nested PCR.
Low Copy Number Specimen Category	A specimen category existing at the Department of Forensic Biology LDIS and at New York State SDIS for the purpose of uploading and searching profiles generated using low copy number (amplification) techniques. Such profiles are not eligible for NDIS.
Low Copy Number Profile	Forensic Unknown composite profiles that have been analyzed using extra cycles during amplification. These samples are stored in the Low Copy Number Specimen Category in the Forensic Index.
Low Stringency	For a given locus, an allelic value for one allele from one profile is the same as an allelic value for one allele from another profile.
Low Stringency Match	At least one locus matches at low stringency.
Marked/Unmarked Profile	Marked profiles in Specimen Manager are profiles selected for upload to SDIS. Unmarked profiles are those profiles deselected for upload to SDIS. Pattern and suspect profiles are unmarked.

Match	A match occurs when CODIS makes an association between two or more DNA profiles and a confirmation is performed by designated laboratory personnel from each affected laboratory. At the Casework Laboratory and for the purpose of match evaluation, a high stringency match at all loci may be reviewed and evaluated by an individual who is currently or was previously a qualified DNA analyst. At the Casework Laboratory, a match at any loci at less than high stringency shall be reviewed and evaluated by a DNA casework analyst currently qualified in the technology being reviewed.
Match Confirmation	The process of determining if a potential candidate match generated by CODIS or other database software is a true match and should be reported to the investigating agency.
Match Manager	Match Manager (MatchMan) is the CODIS module that allows for the managing and sorting of matches discovered through the use of CODIS. Matches are added to Match Manager by the Searcher and Autosearcher programs.
Match Report	Electronic report generated by CODIS when a potential candidate match is made by CODIS software.
Match Stringency	The actual locus-level stringency (low, moderate or high) for a match. The match stringency for the match between two DNA profiles is determined by the lowest locus-level stringency for all loci of the match. A Match Stringency is used to establish whether or not two DNA profiles are identified as matching. The CODIS software supports three Match Stringency levels: low, moderate, and high. Low stringency matches occur when one or more alleles match between the target and candidate profiles at a given locus. Moderate stringency matches require all alleles to match, but the target and candidate profiles can contain a different number of alleles. That is, if the target profile has three alleles and the sample profile has two, then two alleles must match. High stringency matches require all alleles to match.

Maternal Relative	The known reference sample voluntarily provided by a maternal biological relative who is not a mother, child or sibling of a reported missing person. The DNA profiles for this specimen category are stored in the Relatives of Missing Persons Index. These DNA profiles are removed once the individual for whom the samples were submitted has been identified or if the individual voluntarily providing the reference sample has been identified. This is also a disposition that can be used in NG CODIS to describe a mtDNA match.
Methodology	The term used to describe the analytical processes and procedures used to support a DNA typing technology: for example, extraction methods (manual vs. automated), quantitation methods (slot blot, fluorometry, real time), typing test kit and platform (capillary electrophoresis, real-time gel and end-point gel systems).
Mis-match (search)	A parameter within Searcher and Autosearcher which allows for one locus of a profile being searched to match (or not) below the stringency level being searched, and still return the result as a match. For instance, during a moderate search, if all but one locus with entered alleles, in the two profiles being compared, match at moderate or high stringency, one locus which is either a low stringency match or not a match at all, will be displayed. Searches allowing one mis-match are performed at LDIS and SDIS; the purpose is to identify offender and forensic matches in spite of a possible typographical or interpretational error at one locus of any given profile. If this parameter is set to "zero", then the match must occur with no mis-matches at the selected stringency in order to be returned by the search.
Missing Person	The known reference sample of an individual reported missing, voluntarily provided by a relative or the person who filed the missing person report. The source of the DNA has been verified as originating from the missing person and is stored in the Missing Persons Index.

Missing Person Index	A Missing Person Index consists of DNA records of missing persons and deduced missing persons.
Mitochondrial DNA	A small circular piece of DNA found outside the nucleus in most cells and generally involved in the production of proteins responsible for energy production in the body. It is inherited maternally.
Mitotype	A mitochondrial DNA profile consisting of a listing of nucleotide sequence differences from a standard reference sequence; typically the Cambridge Reference Sequence (CRS) or revised Cambridge Reference Sequence (rCRS). The mitotype will vary depending upon the length of the sequence detected.
Moderate Stringency	For a given locus, a minimum number of common alleles and the corresponding allelic values must be the same between two profiles. The minimum number is determined by the profile with the fewest alleles. This is the standard search stringency.
Moderate Stringency Match	A match between two DNA profiles in which the locus-level stringency match for all the loci of the match was either at moderate or high stringency. No loci matched at low stringency.
NCIC	**N**ational **C**rime **I**nformation **C**enter.
NCIC Miscellaneous Field	The designated free text field in NCIC where identifying information as to the location where DNA profiles have been produced may be placed. This field should also be used to enter information when a candidate DNA sample does not yield a DNA profile.
NCIC Unidentified Person File	The file in NCIC containing records for unidentified deceased persons; persons of any age who are living and unable to ascertain their identity; unidentified catastrophe victims; and body parts. For CODIS purposes, the DNA profile for unidentified persons in the Unidentified Human Remains Index is related to records in the NCIC Unidentified Person File.

NDIS	The **N**ational **D**NA **I**ndex **S**ystem. NDIS is one component of CODIS – the national and highest level index containing the DNA records contributed from participating federal, state and local laboratories. NDIS is administered by the FBI in accordance with the provisions of the DNA Identification Act of 1994, as amended. NDIS receives DNA records from every lower level index and supports the searching functions of CODIS. These DNA records are comprised of forensic DNA profiles, convicted offender DNA profiles, arrestee DNA profiles, DNA profiles from missing persons and relatives, and anonymous DNA profiles contributed to a population database.
NDIS Standards for Acceptance of DNA Data	The document prepared by the FBI specifying the requirements for DNA data to be accepted for searching and storage at the National level. These must be reviewed by CODIS analysts annually, and currently consist of a web-based training followed by a quiz.
Negative Amplification Blank	A negative control sample containing amplification reagents without added DNA, used to detect DNA contamination of the amplification reagents during testing.
Negative Control	A specimen included in a batch of specimens which, when tested using DNA testing methods, should yield negative test results.
Negative Reagent Blank	A negative control sample containing all testing reagents without added DNA which is used to detect DNA contamination of any reagent during testing.
NIST	Stands for the **N**ational **I**nstitute of **S**tandards and **T**echnology.
No Match	CODIS case disposition for a moderate stringency candidate match between two cases that are not a true match.

No Suspect Case	1. A case with no suspect listed. This is determined by checking all paperwork associated with the evidence submission and case contacts. 2. A case in which DNA testing has been conducted and the listed suspect(s) have been excluded.
NYPD	Stands for the New York (City) Police Department.
NYS Administrator	The New York State Administrator is responsible for the oversight and approval of CODIS functions at the state level. This includes supervising the SDIS custodian.
NYS DNA Databank	The New York State Identification Index as used throughout Executive Law Section 995, which is comprised of DNA profiles in the Offender STR Index, the Forensic STR Index, the Unidentified Humans Index, the Missing Person Index and the Relatives of Missing Persons Index.
NYSID Number	The **N**ew **Y**ork **S**tate **Id**entification Number. A unique number assigned to a person upon fingerprinting. NOTE: This number is only applicable to New York State Convicted Offenders, other states have their own identifiers for offenders and arrestees.
Obligate Allele	See “Required Allele”.
Offender	An individual who is required by statute to submit a sample for DNA analysis and databasing. The term “offender” includes individuals who are convicted or arrested for a crime or juveniles adjudicated delinquent for an offense and required by state or federal law to provide a DNA sample for analysis and databasing.
Offender Duplicate	CODIS case disposition when the same offender matches a case more than one time due to duplicate testing of the offender. This also serves as a quality control of the database.

Offender Hit (OH)	CODIS case disposition when a DNA profile generated from crime scene evidence in an open case (case with no conviction) matches a convicted offender profile (or arrestee) at SDIS or NDIS.
Offender Laboratory	The laboratory responsible to NDIS for a DNA profile developed from a sample provided by a known offender. The offender laboratory for the State of New York is located at and administered by the New York State Police Laboratory.
Offender Match Letter	A letter from NYS DCJS (for state convicted offender matches) or the offender lab (offender matches at NDIS) documenting a confirmed Offender Match. Provides the offender's identifying information and the investigating agency. It is used by the agency investigating the case to obtain a court order to acquire another biological sample from the convicted offender for comparison to crime scene evidence.
ORI	Stands for **O**riginating Agency **I**dentifier. Unique laboratory identification number that associates a specimen with a particular laboratory (OCME - NY030011K).
Other	The CODIS specimen category that the Department of Forensic Biology uses for forensic DNA profiles generated from the testing of crime scene evidence that are known to match other forensic DNA profiles in the LINKAGE and/or LDIS databases; one of which has already been uploaded to the upper levels of CODIS. These (pattern) profiles are unmarked for upload to SDIS and only get searched in LINKAGE and/or LDIS.

Ownership	Ownership occurs when any of the following criteria are applicable: (1) The originating laboratory will use any samples, extracts or any materials from the vendor laboratory for the purposes of forensic testing (i.e. a vendor laboratory prepares an extract that will be analyzed by the originating laboratory); (2) The originating laboratory will interpret the data generated by the vendor laboratory; (3) The originating laboratory will issue a report on the results of the analysis; or (4) The originating laboratory will enter or search a DNA profile in CODIS from data generated by the vendor laboratory. Forensic Biology takes ownership of CODIS specimens submitted by other agencies for testing at OCME, for instance Unidentified Human Remains that were received for mitochondrial DNA testing.
Partial Match	An association between two single-source (clean or fully deconvoluted profiles), showing similarities but short of an exact match, that suggests that the source of an evidentiary profile is potentially a relative of the source of the other, partially matching, profile. Partial matches are inadvertent, and may be found at the local, state, or national levels (through comparison at the bench, LINKAGE, or CODIS searches).
Paternal Relative	The known reference sample voluntarily provided by a paternal biological relative who is not a father, child or sibling of a reported missing person. The DNA profiles for this specimen category are stored in the Relatives of Missing Person Index. These DNA profiles are removed once the individual for whom the samples were submitted has been identified or if the individual voluntarily providing the reference sample is determined not to be related to the missing person.
Pedigree Tree (Index)	The Pedigree Tree Index consists of DNA records of relatives and spouses of missing persons that are associated with a Pedigree Tree.

Pending	A CODIS disposition choice used temporarily while awaiting the final results from a confirmed match from the investigating agencies.
Perpetrator	The individual who commits a crime. The identity of the perpetrator may or may not be known to the police.
Personally Identifiable Information	Information that includes, but is not limited to, names, dates of birth, and social security numbers used to identify individuals. Personally identifiable information does not include information derived from the examination of the DNA sample.
Platform	The type of analytical system utilized to generate DNA profiles such as capillary electrophoresis, real-time gel, and end-point gel instruments or systems.
Positive Human DNA Control	A known reference DNA sample traceable to the NIST standard reference material for which the DNA profile is known, and is used to demonstrate the acceptable performance of a DNA test.
Popstats	CODIS program available within the CODIS software to perform statistical calculations using the FBI population databases.
Privacy Act	Regulation which determines what information can be entered into CODIS in order to protect the rights of the individual.
Proficiency Testing	A quality assurance measure used to monitor performance and identify areas in which improvement may be needed. Proficiency tests may be classified as: (1) An internal proficiency test, which is produced by the agency undergoing the test. (2) An external proficiency test, which may be open or blind, is a test obtained from an approved proficiency test provider.
Qualified Auditor	A current or previously qualified DNA analyst who has successfully completed the FBI DNA Auditor's training course.

Qualified DNA Analyst	A DNA analyst who has satisfied and continues to satisfy the experience, education, training, proficiency testing and continuing education requirements of the FBI Director’s Quality Assurance Standards (Standards 5 and 13), issued in accordance with the DNA Identification Act of 1994, as well as successful completion of a qualifying test prior to beginning casework or databasing responsibilities. In the Department of Forensic Biology a Qualified DNA Analyst is defined as an Interpreting Analyst who is a Criminalist II or higher title meeting the above requirements.
Quality Assurance	Those planned or systemic actions necessary to provide adequate confidence that a product or service will satisfy given requirements for quality.
Quality Control	The day-to-day operational techniques and activities used to fulfill requirements of quality.
Ranks	Associations made in NG CODIS from Relatives of Missing Persons in a pedigree tree to Unidentified Human Remains. The cases are ranked in joint pedigree likelihood ratio order.
Reference sample	A casework reference sample is biological material obtained from a known individual and collected for purposes of comparison to forensic samples. Also known as an exemplar or known DNA sample.
Relatives of Missing Person (Index)	Consists of DNA records from the biological relatives of individuals reported missing.
Requesting Laboratory	A laboratory that sends a request to the SDIS or NDIS Custodian to search SDIS or NDIS.
Required Allele	Specific designated alleles of a specimen are required to match in order for CODIS to declare a match. Required alleles are attributable to the perpetrator in a mixture, and are designated with a “+.” Only one allele per locus can be so designated.

Required Alleles Specimen	A specimen category of forensic unknowns and/or forensic Category mixtures which can have up to one allele marked as an obligate, per locus. Samples in this category are only searched at LDIS and SDIS, not NDIS.
Revised Cambridge Reference Sequence (rCRS)	A revision of the standard sequence (CRS) used in mitochondrial DNA typing.
“Scientific Reason”	A statement that supports a search using fewer than the required minimum of STR loci at the state or national level, such as the apparent presence of mixtures, sample degradation or limited sample availability.
SDIS	The **S**tate **D**NA **I**ndex **S**ystem. The State’s repository of DNA records under the control of state authorities. SDIS is typically the central point of contact between all New York State local labs and NDIS. (See also Convicted Offender Laboratory).
SDIS Custodian	An employee or designee of the New York State Police responsible for, among other duties, maintaining SDIS, fulfilling technical requirements of CODIS and proper operation of the computer hardware on which the DNA Databank resides.
Search	A method for comparing target and candidate profiles to see if any match.
Search Stringency Parameters	Allows the user to define the number of alleles per locus that the target profile and candidate profile must have in common. It is a user-defined setting that is used as a filter to report locus matches of equal or higher stringency (see Low Stringency, Moderate Stringency, High Stringency).
Search Results	After CODIS determines that two or more DNA profiles match, an electronic report is generated by CODIS and is distributed to the laboratories responsible for the matching profiles.
Searcher	Searcher is an application within the CODIS suite of software products. It provides a means of locating specific DNA profiles by searching the profiles within the CODIS indexes for potential matches to a target DNA profile.

Specimen/Sample	The biological sample (for example, blood, semen or epithelial cells) that is the object of DNA analysis for purposes related to forensic identification or statistical population sampling.
Specimen Category	Used to classify a DNA profile and determine into which index a specimen can be transferred. For example, unidentified person, forensic unknown and low copy number categories will be inserted into the Forensic index.
Specimen ID	Identification number associated with a DNA profile entered into the CODIS system. Specimen ID numbers must be unique and can be no longer than 24 characters. The OCME Department of Forensic Biology uses a standard format which is explained in section 4.1 of this manual.
Specimen Manager	Specimen Manager (SpecMan) is a CODIS module that provides a simplified, central interface for managing specimens (DNA records). In SpecMan, views of specimens can be created using different criteria, specimens can be marked/unmarked for upload and uploads can be sent.
Spouse	The known reference sample voluntarily provided by a presumptive parent of a common child. The DNA profiles for this specimen category are stored in the Spouse Index. The DNA record of a spouse shall be removed if the missing person corresponding to this reference sample has been identified.
Spouse Index	A Spouse Index consists of the DNA records of a presumptive parent of a common child of a missing person.
Statute of Limitation	A statutory provision which sets forth the maximum period of time that can lapse after a criminal act occurs for it to be taken to court. If that maximum time period passes and the perpetrator has not been formally charged for the criminal act, then he or she never can be.
Stringency	Stringency levels define the number of alleles that must match in order to produce a match (low, moderate, or high).

Subject Index	An Index in the State DNA Database that contains samples from convicted offenders seeking early release from prison or parole, probation instead of prison, a plea bargain to a lesser offense or those participating in the Department of Correctional Services' discretionary program that results in early release of the offender into the community.
Submission Form	The DNA Databank Specimen Submission Form. This form, which contains the bar code number of the offender's sample, is submitted to the convicted offender laboratory along with the offender's DNA sample. This form contains the offender's identifying information, and the facility responsible for the sample collection.
Submitting Agency	The agency that submitted evidence to a forensic DNA crime laboratory. The submitting agency is responsible for investigating crimes.
Suspect	An individual whose identity is known to the police and who is alleged to be the perpetrator of a crime. Exemplars collected from a suspect, such as blood or buccal specimens, or pseudo-exemplars such as cigarette butts or soda bottles, received in the laboratory for DNA comparison purposes, are considered evidentiary.
Suspect Case	1. A case in which DNA has been conducted and the listed suspect(s) have been included. 2. A case with a suspect listed and no DNA analysis has been performed to exclude them.
Target DNA Profile	A target profile is a DNA profile for which you are trying to find a matching DNA profile. This profile is submitted by a criminal justice agency for the purpose of searching against DNA profiles maintained by SDIS and NDIS which could match an indexed DNA profile.
Technical Leader	An employee who is accountable for the technical operations of the laboratory and who is authorized to stop or suspend laboratory operations.

Technology	The type of forensic DNA analysis performed in the laboratory, such as RFLP, STR, YSTR, or mitochondrial DNA.
Unidentified Human (Remains) Index	Consists of DNA records from recovered living persons (for example, children who can't and others who can't or refuse to identify themselves), and recovered dead persons (including their body parts and tissues) whose identities are not known.
Unidentified Person	The DNA profile developed from the recovered deceased (including body parts and tissue) or an individual who is unidentified (for example, children who can't and others who can't or refuse to identify themselves). The DNA profile for this specimen category is stored in the Unidentified Human (Remains) Index.
Upload	The transfer of electronic data from a lower level of CODIS (LDIS or SDIS) to an upper level (SDIS or NDIS).
User	Personnel who have login access to CODIS and/or qualified DNA analysts who are responsible for producing the DNA profiles stored in NDIS.
User Defined 1, 2, 3	CODIS case dispositions that can be defined by the user in the event that the others are not appropriate. User Defined 1 is not used in OCME's LDIS. User Defined 2 is generally used when a forensic sample hits an additional sample taken from the same offender which the forensic sample had hit previously. This is defined by agreement among all the NY labs. User Defined 3 is generally used when a forensic sample hits a known sample at SDIS which turns out to be a victim, witness, consensual partner or other elimination sample which was unable to be obtained for in-house testing. Forensic samples involved in matches/hits of this type are then removed from the database. This disposition is also the "catch-all" for all other uncommon match resolutions. This disposition is defined as needed by the LDIS lab upon concurrence by SDIS.

Use and Dissemination Agreement	An official document allowing the transfer of Databank information from one agency to another. This document contains requirements for the confidentiality and dissemination of DNA information and procedures for laboratories participating in SDIS and NDIS.
Waiting for More Data	Disposition in CODIS 5.7.4 and NG CODIS. Additional testing may be needed to confirm or refute the match or rank.
Warm match/hit	A warm match occurs when CODIS DNA profiles match based on prior knowledge. A typical example is when DNA profiles from several cases match that were submitted to the laboratory as a pattern, or when a suspect exemplar submitted for a particular case matches that case.

9 NYCRR Part 6192	The policy which provides for the establishment and operation of the DNA Identification Index in New York State.
ASCII	**A**merican **S**tandard **C**ode for **I**nformation **I**nterchange. Text-only, with no formatting such as tabs, bold or underlining.
Accredited laboratory	a DNA laboratory that has received formal recognition that it meets or exceeds a list of standards, including the FBI Director’s Quality Assurance Standards, to perform specific tests by a nonprofit professional association of persons actively involved in forensic science that is nationally recognized within the forensic science community in accordance with the provisions of the Federal DNA Identification Act (42 U.S.C.§14132) or subsequent laws.
Administrative removal	The deletion of a DNA record upon verification of the fact that the DNA record is not eligible for inclusion in SDIS and/or NDIS.
Allele	In classical genetics, one of the alternate forms of the gene at a particular locus. In DNA analysis, the term “alleles” is commonly extended to include DNA fragments of variable length and/or sequence which may have no known transcriptional product but are detected in a polymorphic system.
Arrestee	The known sample from a person who has been arrested and in accordance with the law of the applicable jurisdiction is required to provide a DNA sample for analysis and entry into a state DNA database. The term “arrestee” includes persons who have been charged in a formal criminal instrument, such as an indictment.
Arrestee Index	An Arrestee Index consists of DNA records of persons who have been arrested or indicted with a crime and are required by law to provide DNA samples.
Assessment	A review of a laboratory, conducted by the FBI’s CODIS Unit, to ensure compliance with the NDIS Operational Procedures and State/Federal law with respect to the laboratory’s participation in NDIS.

Autosearcher	A CODIS program that automatically searches all DNA profiles in a user specified index against all profiles in one or more other user specified indexes.
Biological Child	The CODIS specimen category for DNA profiles generated from known reference samples provided voluntarily by an adult child or provided with the parental/guardian consent for a minor child of a reported missing person. The DNA record for this specimen category is stored in the Relatives of Missing Person Index. These DNA profiles are removed once the individual for whom the samples were submitted has been identified or if the individual voluntarily providing the reference sample is determined not to be related to the missing person
Biological Father/Mother	The CODIS specimen category for DNA profiles generated from known reference samples provided voluntarily by the biological father/mother of a reported missing person. Profiles in this specimen category are stored in the CODIS index known as “Relatives of Missing Persons Index.” These DNA profiles are removed once the individual for whom the samples were submitted has been identified or if the individual voluntarily providing the reference sample is determined not to be realted to the missing person
Biological Sibling	The CODIS specimen category for DNA profiles generated from known reference samples provided voluntarily by the biological sibling of a reported missing person. Profiles in this specimen category are stored in the CODIS index known as “Relatives of Missing Persons Index”. These DNA profiles are removed once the individual for whom these samples were submitted has been identified or if the individual voluntarily providing the reference sample is determined not to be related to the missing person.
Cambridge Reference Sequence	The CRS is the standard sequence used in mitochondrial DNA typing to which other mitochondrial DNA types are compared. Mitochondrial DNA profiles are reported as differences from the standard reference sequence [Anderson, S., et al. Sequence and organization of the human mitochondrial genome. *Nature* 1981; 290:457-465].

Candidate Match	A possible match between two or more DNA profiles discovered by CODIS software. A qualified DNA analyst from each affected laboratory must verify a candidate match. **Candidate matches must complete a confirmation process before being reported as a match or hit.**
Candidate Profile	A DNA profile matching the target DNA profile (see target DNA profile).
Case Disposition	The final outcome (confirmed conviction, offender hit, forensic hit, etc.) of a criminal case aided by CODIS.
Case Report	A report generated by a forensic laboratory documenting the results of the analyses of the crime scene evidence.
Casework Laboratory	A forensic DNA laboratory responsible for DNA profiles developed from crime scene evidence.
CJIS-WAN	The FBI's **C**riminal **J**ustice **I**nformation **S**ervices **W**ide **A**rea **N**etwork that provides communications network for the United States law enforcement community. Originally designed to support the Integrated Automated Fingerprint Identification System (IAFIS), the FBI is expanding the scope of the CJIS-WAN to include all federal, state and local crime laboratories participating in the National DNA Index System.
CMF	**C**ommon **M**essage **F**ormat, an ASCII text file format necessary for importing data into CODIS.

CODIS	The <u>CO</u>mbined <u>D</u>NA <u>I</u>ndex <u>S</u>ystem administered by the FBI. CODIS links DNA evidence obtained from crime scenes, thereby identifying serial criminals. CODIS also compares crime scene evidence to DNA profiles obtained from offenders, thereby providing investigators with the identity of the putative perpetrator. In addition, CODIS contains profiles from missing persons, unidentified human remains and relatives of missing persons. There are three levels of CODIS: the Local DNA Index System (LDIS), used by individual laboratories; the State DNA Index System (SDIS), used at the state level to serve as a state's DNA database containing DNA profiles from LDIS laboratories; and the National DNA Index System (NDIS), managed by the FBI as the nation's DNA database containing all DNA profiles uploaded by participating states.
CODIS Administrator	An employee of the laboratory responsible for administration and security of the laboratory's CODIS at a laboratory performing DNA analysis on forensic and casework reference samples. This is also a defined role within the software.
CODIS Core Loci	The 13 autosomal DNA loci that are accepted and required by CODIS for a particular DNA testing method. Currently the STR core loci are CSF1PO, D13S317, D16S539, D18S51, D21S11, D3S1358, D5S818, D7S820, D8S1179, FGA, TH01, TPOX, and vWA. D19S433, D2S1338, Penta E and Penta D are accepted but not searched, as they are NOT CODIS core loci.
CODIS Information Technology (IT) User	A government employee of a CODIS laboratory who has login access to the CODIS system for computer hardware/software and telecommunications maintenance purposes but who is not authorized to add, modify or delete DNA records in CODIS.
CODIS Custodian/Supervisor	A member of the CODIS staff responsible for overseeing the CODIS system and all its functions (also called "LDIS Custodian"). This person fulfills the role of Casework CODIS Administrator as defined by the FBI QA Standards.

CODIS User	A government employee who: (1) has login access to the CODIS system and is authorized to read, add, modify or delete DNA records in CODIS; or (2) is a qualified DNA analyst responsible for producing DNA profiles stored in NDIS. This is a defined role within the software.
CODIS User Plus	An CODIS User who has also been granted the ability to edit the assigned analyst of a profile. This is a laboratory-defined role within the software.
Contract Laboratory	A laboratory, usually in the private sector, that performs DNA analyses under contract to a forensic laboratory.
Control Certification Form	This document certifies that the positive human DNA control(s) and the negative controls satisfy the requirements established by NIST. One document must be completed and submitted annually to the SDIS Custodian before DNA profiles can be uploaded into SDIS.
Cold Hit	Two DNA profiles matching with no prior indication that the profiles are related.
Composite DNA Profile	A DNA profile generated by combining typing results from different loci obtained from multiple injections of the same amplified sample and/or multiple amplifications of the same DNA extract. When separate extracts from a given evidentiary item are combined prior to amplification, the resulting DNA profile is not considered a composite profile. Unless there is a reasonable expectation of sample(s) originating from a common source (e.g., duplicate vaginal swabs, known reference samples, or a bone), allelic data from separate extractions from different locations on a given evidentiary item should not be combined into a composite profile.

Convicted Offender	The CODIS specimen category for a DNA profile generated from any person who has been convicted of a crime in federal, state, and/or local courts where the applicable law permits establishment of a DNA record for this person. In New York State, this is a person convicted of one of the crimes listed in Executive Law, Section 995(7). Profiles in this specimen category are stored in the CODIS index known as the "Convicted Offender Index" (or Offender Index). As of June 2006, all convicted felons in New York must give a sample to the database.
Convicted Offender Index	A Convicted Offender Index consists of DNA records from offenders convicted of qualifying state crimes and juveniles required by the relevant jurisdiction to provide DNA samples.
Convicted Offender Lab	A forensic DNA laboratory responsible for DNA profiles developed from Convicted Offender samples. In New York State, this is the New York State Police Forensic Investigation Center in Albany.
Convicted Offender Sample	A biological sample containing DNA that is collected from a designated convicted offender for the purpose of DNA profiling.
Convicted Offender Profile	A DNA profile generated from a convicted offender sample. These DNA profiles are put into the CODIS specimen category "Convicted Offender" and are stored in CODIS index known as the "Convicted Offender Index." These profiles establish an index of DNA identification records that are searched for matches against the DNA profiles generated from crime scene evidence.
Conviction Match	The DNA profile generated from crime scene evidence matches a DNA profile from a convicted offender, but the offender has already been convicted of the crime for which that evidence was collected.

Criminal Justice Agency	A criminal justice agency is an agency or institution of the federal, state, or local government, other than the office of the public defender, which performs as part of its principal function, activities relating to the apprehension, investigation, prosecution, adjudication, incarceration, supervision or rehabilitation of criminal offenders. For purposes of participation in the National DNA Index System, the DNA Identification Act of 1994 was amended by Public Law 106-546 to include the Secretary of Defense in accordance with 10 U.S.C. §1565.
Criminal History Record	Documents generated by DCJS that contain arrest, charges, conviction, sentence, location and identifying information of a convicted offender.
DAO	Stands for District Attorney's Office. There is one in each of the five boroughs of New York City.
Databank Coordinator	An employee or designee of the Division of Criminal Justice Services responsible for administrative requirements related to the New York State DNA Databank.
DCJS	Stands for Division of Criminal Justice Services. Acts as a liaison between local New York laboratories and the New York State Police Laboratory. DCJS manages the program responsible for collection of offender samples in New York State, handles requests to expedite samples and database searches and handles legal requests for convicted offender information.
DCJS Match Letter	A letter generated by DCJS after a match between a forensic DNA profile and a New York State Police convicted offender profile has been confirmed. The purpose of this letter is to notify the laboratory of a confirmed match, provide case and agency information, the identity of the offender, and current offender location. The DCJS Match Letter is provided to the DAO's upon request.

Deduced Missing Person	The CODIS specimen category for DNA profiles generated from examining reference samples (for example, toothbrush, hair brush) of a reported missing person. Profiles in this specimen category are considered reference samples and are stored in the CODIS Missing Person Index. This index is searched and compared against the Relatives of Missing Persons Index and the Unidentified Human (Remains) Index.
Detainee	The known sample from a non-United States (U.S.) person detained under the authority of the U.S. and required by law to provide a DNA sample for analysis and entry into a state/national DNA database.
Detainee Index	Detainee Index consists of DNA records from non-United States (U.S.) persons detained under the authority of the U.S. and required by law to provide a DNA sample.
DNA Analysis Backlog Elimination Act	Authorized the collection of DNA samples from persons convicted of specified Federal Felony offenses, certain District of Columbia convicted offenders, and military offenders.
DNA Analyst	An employee that has successfully completed the laboratory's training requirements for casework or database, known or casework reference sample analysis, passed a competency test, and had entered into a proficiency testing program in accordance with the FBI's *Quality Assurance Standards for Forensic DNA Testing or DNA Databasing Laboratories.* This individual conducts and/or directs the analysis of samples, interprets data and reaches conclusions. See also, Interpreting Analyst; Qualified DNA Analyst.
DNA Databank	The New York State Identification Index (as used throughout Executive Law Section 995) comprised of DNA profiles in the Convicted Offender index, the Forensic index and the Missing Persons index.

DNA Identification Act	DNA Identification Act of 1994; 42 U.S.C. §14132, as amended by the DNA Analysis Backlog Elimination Act of 2000, the Justice for All Act of 2004 and the DNA Fingerprint Act of 2005.
DNA Profile	The genetic constitution of an individual at defined locations (also known as loci) in the DNA. A DNA type derived from nuclear DNA typically consists of one or two alleles at several loci (e.g., short tandem repeat loci). The DNA type derived from mitochondrial DNA is described in relation to the revised Cambridge Reference Sequence (Nature Genetics 1999, 23, 147). Also known as a DNA type.
DNA Record	A database record that includes the DNA profile as well as data required to manage and operate NDIS, i.e., the Originating Agency Identifier which serves to identify the submitting agency; the Specimen Identification Number; and DNA personnel associated with the DNA profile analyses.
Elimination Sample	A biological sample from a known individual (commonly a husband or consensual partner), other than the alleged perpetrator or victim, which is analyzed for purposes of identifying those portions of a forensic DNA profile attributable to the alleged perpetrator. This DNA profile for this specimen category **may** be stored at the state and/or local levels but is not eligible for upload to NDIS. Such samples are considered to be evidentiary.
Employee	A person: (1) in the service of the applicable federal, state or local government, subject to the terms, conditions and rules of federal/state/local employment and eligible for the federal/state/local benefits of service; or (2) formerly in the service of a federal, state, or local government who returns to service in the agency on a part time or temporary basis. For purposes of a vendor laboratory, an employee is a person in the service of a vendor laboratory and subject to the applicable terms, conditions and rules of employment of the vendor laboratory.

Equivalent Allele Parameter	For PCR/STR, this parameter is used to determine whether a target allele matches a candidate allele. It is a PCR value that is defined to be the same as another PCR allele value. Equivalent allele values are reciprocal. For instance, at TH01, 9.2 = 9.3 = 9.x = 10 with respect to searches. Equivalency can be set by the administrator. During review of a candidate match, the reviewer must check whether the values are indeed equivalent.
Exact Match	An association between two profiles (single-source, fully deconvoluted, partially deconvoluted, or mixtures) that concludes that the two profiles, or components of the profiles, are the same.
Executive Law Article 49-B Section 995	Provisions of New York State law establishing the Commission on Forensic Science and the DNA Identification Index.
Expert System	The software program or set of software programs that interprets the data generated from DNA analysis instrument/platform in accordance with the laboratory-defined quality assurance rules and accurately identifies the data that does or does not satisfy such rules.
Expungement	The deletion of a DNA profile at the state and/or national index levels in response to the following: (1) a court order that has overturned a convicted offender's conviction for a qualifying offense; (2) a court order establishing that charges were dismissed or resulted in acquittal, or no charges were filed within the applicable time period; (3) a death certificate or other document indicating that human remains have been identified;(4) if the missing person corresponding to the reference sample from a relative has been id
FBI	The **F**ederal **B**ureau of **I**nvestigation is the federal agency authorized by the DNA Identification Act of 1994 to issue quality assurance standards governing forensic testing and DNA databasing laboratories and to establish and administer the National DNA index System (NDIS).

FB-LDAS or LINKAGE	Forensic Biology Local DNA Analyses System (LINKAGE) - the Paradox DNA database used to search preliminary DNA results for case links. LINKAGE contains both casework non-mixture profiles and suspect profiles.
Forensic DNA Laboratory	Any forensic laboratory operated by the state or unit of local government that performs forensic DNA testing on crime scene evidence or materials derived from the human body for use as evidence in a criminal proceeding or for purposes of identification (Executive Law section 995(2)).
Forensic DNA Profile	A DNA profile generated from the testing of crime scene evidence. These profiles are from persons whose identities are not known with certainty and who left DNA at the scene of a crime or whose DNA was carried away from the scene of a crime. These profiles are put in the CODIS specimen category “Forensic Unknown”. Profiles in this category are stored in the CODIS index known as “Forensic STR Index”.
Forensic DNA Testing	Any test that employs techniques to examine DNA derived from the human body for purpose of providing information to resolve issues of identification (Executive Law section 995(2)).
Forensic Hit (FH)	CODIS case disposition when two or more forensic samples are linked; also called a case-to-case hit.
Forensic Index	A Forensic Index consists of DNA profiles originating from and associated with evidence found at crime scenes. For example, evidence associated with a crime scene includes DNA that may be carried away from a crime scene. The Forensic Index contains the specimen categories Forensic Unknowns and Forensic mixtures; and at the New York State level, Low Copy Number samples.

Forensic Mixture	A specimen category in the CODIS software that is stored in the Forensic Index and originates from a forensic sample (biological sample found at the scene of a crime) that contains DNA contributed from more than one source.
Forensic Match Letter	A letter from a laboratory documenting a confirmed Forensic Match. This letter provides information regarding the investigating agency and offender information (for solved cases).
Forensic Obligate Index	An index that contains the specimen category Required Alleles, and contains six to nine loci, searched at moderate stringency. Profiles in this index are only searched at SDIS, they have too few alleles to be uploaded to NDIS.
Forensic STR Index	The CODIS index that contains forensic DNA records.
Forensic Sample	A biological sample originating from and associated with a crime scene. For example, a sample associated with a crime scene may include a sample that has been carried away from the crime scene.
Forensic Unknown	The CODIS specimen category for forensic DNA profiles generated from the testing of crime scene evidence. Profiles in this specimen category are stored in the CODIS index known as "Forensic STR Index."
Heteroplasmy	The occurrence of more than one mitochondrial DNA profile (mitotype) arising from a particular tissue(s) within an individual; exhibiting more than one base at a particular nucleotide position.
High Stringency	The number of alleles and the corresponding allelic values are the same between two DNA profiles at a given locus.
High Stringency Match	All alleles at all loci match at high stringency. A confirmed match between two or more DNA profiles. Hits can occur at or between any level (local, state and national) in the CODIS hierarchy. Hits can be a Forensic Hit, an Offender Hit, an Arrestee Hit (some states), or a Suspect Hit (Forensic Biology only).

Homopolymeric Regions	The occurrence of variable lengths of the same nucleotide in a length of mtDNA (i.e. CCCCCC), these generally occur around the region of 16183-16193 in HV1 and 303-309, 311-315 in HV2.
Hypervariable Region I	A segment of increased variability in the mitochondrial DNA control region; the common nucleotide positions used in forensic mtDNA typing are 16024 to 16365.
Hypervariable Region II	A segment of increased variability in the mitochondrial DNA control region; the common nucleotide positions used in forensic mtDNA typing are 73 to 340.
Identification Confirmed	ID confirmed. Disposition in NG CODIS when an individual is identified and confirmed; metadata and other information such as a copy of the death certificate support the confirmation of the identification.
Identifying Information	Information on a Convicted Offender's personal characteristics and ID numbers, e.g. name, NYSID#, DOB, SS#, etc. Identifying information is prohibited in CODIS.
Identification Pending	ID pending. Disposition in NG CODIS when an individual's identification is still in the process of being confirmed.
Index Offense	An offense defined in Executive Law Section 995, conviction of which determines eligibility for inclusion in the State DNA Databank.
Indictment	A formal written accusation originating with a prosecutor and issued by a grand jury against a party charged with a crime.
Interpreting Analyst	Forensic Biology analyst responsible for interpreting the DNA results in a case. Interpreting Analysts are CODIS analysts.
Investigating Agency	See Submitting Agency.

Investigations Aided (IA)	A criminal investigation equates to a case, which equates to a submission to a laboratory. An investigation aided for a casework laboratory is the number of cases submitted to the lab that were assisted by CODIS. Investigations aided = Investigations assisted = Cases aided = Cases assisted.
Juvenile	The known sample from a juvenile (as that term is defined by the relevant jurisdiction) who is required by state law to provide a DNA sample for analysis and entry into a state DNA database. The DNA profile for this specimen category is stored in a Convicted Offender Index.
Keyboard Search	A manual search of CODIS initiated by a CODIS user. In SDIS or NDIS the search is initiated by the SDIS or NDIS Custodian. In LDIS the search is done by a member of the CODIS group.
Keyboard Search Request	A request from an agency for a keyboard search of the DNA Databank at LDIS, SDIS or NDIS. This letter includes all of the information relating to the DNA profile, the requesting agency and certification of the control values.
Keyboard Search Result Letter	A letter from the Databank Coordinator documenting the results (match/no match) of the Keyboard Search.
Known Sample	Biological material whose identity or type is established. Examples of known samples would be a buccal specimen from a victim or suspect; or a sample contributed by the close biological relative of a missing person.
Laboratory	A facility: (1) employing at least two full time employees who are qualified DNA analysts; and (2) having and maintaining the capability to perform the DNA analysis of forensic and/or casework reference samples at that facility.
LDAS	The **L**ocal **D**NA **A**nalysis **S**ystem, a Paradox database which contains the local DNA profiles. The LDAS for Forensic Biology contains casework non-mixture (or deduced) forensic DNA profiles generated from casework and DNA profiles from suspects developed during the course of criminal investigations. This database is commonly called “LINKAGE.”

LDIS	The **L**ocal **D**NA **I**ndex **S**ystem contains the DNA records selected from LDAS for searching for DNA matches and (for those eligible) for inserting into higher level (SDIS and NDIS) CODIS indexes. LDIS also contains DNA records for profiles not suitable for entry into LINKAGE, such as non-deduced mixtures or partial profiles.
LAB-TYPES	A database which contains DNA profiles from Department of Forensic Biology staff, known contaminant DNA profiles, and other DNA profiles from known individuals (such as janitorial staff).
Legal (sample)	The known reference sample from a person whose DNA sample is collected under applicable legal authorities, provided that DNA samples that are voluntarily submitted solely for elimination purposes shall not qualify as a Legal specimen. An example of a Legal specimen is a sample collected from a person found not guilty by reason of insanity who is required by the relevant state law to provide a DNA sample for analysis and entry into a state DNA database. The DNA profile for this specimen category is stored in a Legal Index.
Legal Index	A Legal Index consists of DNA records of persons whose DNA samples are collected under applicable legal authorities.
LIMS	Laboratory Information Management System. Current database for evidence intake, accessioning, examination, and documentation. Repository for all electronic case information, including final reports, and source of STR and Mitochondrial CMF import files for LDIS.
LINKAGE	See LDAS.
LINKAGE User	A laboratory employee who: (1) has login access to the LDAS/LINKAGE system and is authorized to read, add, modify and/or delete DNA records in it; or (2) is a qualified DNA analyst responsible for producing DNA profiles stored in LDAS/LINKAGE.

Low Copy Number or Low Template DNA Analysis	As defined by NDIS, based upon a laboratory's internal validation, any DNA typing results generated from limited quantity and/or quality DNA template using conditions that have demonstrated increased stochastic effects are defined as Low Template or Low Copy DNA analyses. The stochastic effects which may be observed in DNA samples subjected to these conditions include allelic drop-in or drop-out, increased stutter and increased intra-locus peak height imbalance. When used to analyze limited quantity and/or quality DNA template below the stochastic thresholds, Low Template or Low Copy DNA conditions may include the following: additional amplification cycles, post-amplification purification, reduced reaction volume, injection enhancement by increased voltage or time, and nested PCR.
Low Copy Number Specimen Category	A specimen category existing at the Department of Forensic Biology LDIS and at New York State SDIS for the purpose of uploading and searching profiles generated using low copy number (amplification) techniques. Such profiles are not eligible for NDIS.
Low Copy Number Profile	Forensic Unknown composite profiles that have been analyzed using extra cycles during amplification. These samples are stored in the Low Copy Number Specimen Category in the Forensic Index.
Low Stringency	For a given locus, an allelic value for one allele from one profile is the same as an allelic value for one allele from another profile.
Low Stringency Match	At least one locus matches at low stringency.
Marked/Unmarked Profile	Marked profiles in Specimen Manager are profiles selected for upload to SDIS. Unmarked profiles are those profiles deselected for upload to SDIS. Pattern and suspect profiles are unmarked.

Match	A match occurs when CODIS makes an association between two or more DNA profiles and a confirmation is performed by designated laboratory personnel from each affected laboratory. At the Casework Laboratory and for the purpose of match evaluation, a high stringency match at all loci may be reviewed and evaluated by an individual who is currently or was previously a qualified DNA analyst. At the Casework Laboratory, a match at any loci at less than high stringency shall be reviewed and evaluated by a DNA casework analyst currently qualified in the technology being reviewed.
Match Confirmation	The process of determining if a potential candidate match generated by CODIS or other database software is a true match and should be reported to the investigating agency.
Match Manager	Match Manager (MatchMan) is the CODIS module that allows for the managing and sorting of matches discovered through the use of CODIS. Matches are added to Match Manager by the Searcher and Autosearcher programs.
Match Report	Electronic report generated by CODIS when a potential candidate match is made by CODIS software.
Match Stringency	The actual locus-level stringency (low, moderate or high) for a match. The match stringency for the match between two DNA profiles is determined by the lowest locus-level stringency for all loci of the match. A Match Stringency is used to establish whether or not two DNA profiles are identified as matching. The CODIS software supports three Match Stringency levels: low, moderate, and high. Low stringency matches occur when one or more alleles match between the target and candidate profiles at a given locus. Moderate stringency matches require all alleles to match, but the target and candidate profiles can contain a different number of alleles. That is, if the target profile has three alleles and the sample profile has two, then two alleles must match. High stringency matches require all alleles to match.

Maternal Relative	The known reference sample voluntarily provided by a maternal biological relative who is not a mother, child or sibling of a reported missing person. The DNA profiles for this specimen category are stored in the Relatives of Missing Persons Index. These DNA profiles are removed once the individual for whom the samples were submitted has been identified or if the individual voluntarily providing the reference sample has been identified. This is also a disposition that can be used in NG CODIS to describe a mtDNA match.
Methodology	The term used to describe the analytical processes and procedures used to support a DNA typing technology: for example, extraction methods (manual vs. automated), quantitation methods (slot blot, fluorometry, real time), typing test kit and platform (capillary electrophoresis, real-time gel and end-point gel systems).
Mis-match (search)	A parameter within Searcher and Autosearcher which allows for one locus of a profile being searched to match (or not) below the stringency level being searched, and still return the result as a match. For instance, during a moderate search, if all but one locus with entered alleles, in the two profiles being compared, match at moderate or high stringency, one locus which is either a low stringency match or not a match at all, will be displayed. Searches allowing one mis-match are performed at LDIS and SDIS; the purpose is to identify offender and forensic matches in spite of a possible typographical or interpretational error at one locus of any given profile. If this parameter is set to "zero", then the match must occur with no mis-matches at the selected stringency in order to be returned by the search.
Missing Person	The known reference sample of an individual reported missing, voluntarily provided by a relative or the person who filed the missing person report. The source of the DNA has been verified as originating from the missing person and is stored in the Missing Persons Index.

Missing Person Index	A Missing Person Index consists of DNA records of missing persons and deduced missing persons.
Mitochondrial DNA	A small circular piece of DNA found outside the nucleus in most cells and generally involved in the production of proteins responsible for energy production in the body. It is inherited maternally.
Mitotype	A mitochondrial DNA profile consisting of a listing of nucleotide sequence differences from a standard reference sequence; typically the Cambridge Reference Sequence (CRS) or revised Cambridge Reference Sequence (rCRS). The mitotype will vary depending upon the length of the sequence detected.
Moderate Stringency	For a given locus, a minimum number of common alleles and the corresponding allelic values must be the same between two profiles. The minimum number is determined by the profile with the fewest alleles. This is the standard search stringency.
Moderate Stringency Match	A match between two DNA profiles in which the locus-level stringency match for all the loci of the match was either at moderate or high stringency. No loci matched at low stringency.
NCIC	**N**ational **C**rime **I**nformation **C**enter.
NCIC Miscellaneous Field	The designated free text field in NCIC where identifying information as to the location where DNA profiles have been produced may be placed. This field should also be used to enter information when a candidate DNA sample does not yield a DNA profile.
NCIC Unidentified Person File	The file in NCIC containing records for unidentified deceased persons; persons of any age who are living and unable to ascertain their identity; unidentified catastrophe victims; and body parts. For CODIS purposes, the DNA profile for unidentified persons in the Unidentified Human Remains Index is related to records in the NCIC Unidentified Person File.

NDIS	The **N**ational **D**NA **I**ndex **S**ystem. NDIS is one component of CODIS – the national and highest level index containing the DNA records contributed from participating federal, state and local laboratories. NDIS is administered by the FBI in accordance with the provisions of the DNA Identification Act of 1994, as amended. NDIS receives DNA records from every lower level index and supports the searching functions of CODIS. These DNA records are comprised of forensic DNA profiles, convicted offender DNA profiles, arrestee DNA profiles, DNA profiles from missing persons and relatives, and anonymous DNA profiles contributed to a population database.
NDIS Standards for Acceptance of DNA Data	The document prepared by the FBI specifying the requirements for DNA data to be accepted for searching and storage at the National level. These must be reviewed by CODIS analysts annually, and currently consist of a web-based training followed by a quiz.
Negative Amplification Blank	A negative control sample containing amplification reagents without added DNA, used to detect DNA contamination of the amplification reagents during testing.
Negative Control	A specimen included in a batch of specimens which, when tested using DNA testing methods, should yield negative test results.
Negative Reagent Blank	A negative control sample containing all testing reagents without added DNA which is used to detect DNA contamination of any reagent during testing.
NIST	Stands for the **N**ational **I**nstitute of **S**tandards and **T**echnology.
No Match	CODIS case disposition for a moderate stringency candidate match between two cases that are not a true match.

No Suspect Case	1. A case with no suspect listed. This is determined by checking all paperwork associated with the evidence submission and case contacts. 2. A case in which DNA testing has been conducted and the listed suspect(s) have been excluded.
NYPD	Stands for the New York (City) Police Department.
NYS Administrator	The New York State Administrator is responsible for the oversight and approval of CODIS functions at the state level. This includes supervising the SDIS custodian.
NYS DNA Databank	The New York State Identification Index as used throughout Executive Law Section 995, which is comprised of DNA profiles in the Offender STR Index, the Forensic STR Index, the Unidentified Humans Index, the Missing Person Index and the Relatives of Missing Persons Index.
NYSID Number	The **N**ew **Y**ork **S**tate **Id**entification Number. A unique number assigned to a person upon fingerprinting. NOTE: This number is only applicable to New York State Convicted Offenders, other states have their own identifiers for offenders and arrestees.
Obligate Allele	See “Required Allele”.
Offender	An individual who is required by statute to submit a sample for DNA analysis and databasing. The term “offender” includes individuals who are convicted or arrested for a crime or juveniles adjudicated delinquent for an offense and required by state or federal law to provide a DNA sample for analysis and databasing.
Offender Duplicate	CODIS case disposition when the same offender matches a case more than one time due to duplicate testing of the offender. This also serves as a quality control of the database.

Offender Hit (OH)	CODIS case disposition when a DNA profile generated from crime scene evidence in an open case (case with no conviction) matches a convicted offender profile (or arrestee) at SDIS or NDIS.
Offender Laboratory	The laboratory responsible to NDIS for a DNA profile developed from a sample provided by a known offender. The offender laboratory for the State of New York is located at and administered by the New York State Police Laboratory.
Offender Match Letter	A letter from NYS DCJS (for state convicted offender matches) or the offender lab (offender matches at NDIS) documenting a confirmed Offender Match. Provides the offender's identifying information and the investigating agency. It is used by the agency investigating the case to obtain a court order to acquire another biological sample from the convicted offender for comparison to crime scene evidence.
ORI	Stands for **Or**iginating Agency **I**dentifier. Unique laboratory identification number that associates a specimen with a particular laboratory (OCME - NY030011K).
Other	The CODIS specimen category that the Department of Forensic Biology uses for forensic DNA profiles generated from the testing of crime scene evidence that are known to match other forensic DNA profiles in the LINKAGE and/or LDIS databases; one of which has already been uploaded to the upper levels of CODIS. These (pattern) profiles are unmarked for upload to SDIS and only get searched in LINKAGE and/or LDIS.

Ownership	Ownership occurs when any of the following criteria are applicable: (1) The originating laboratory will use any samples, extracts or any materials from the vendor laboratory for the purposes of forensic testing (i.e. a vendor laboratory prepares an extract that will be analyzed by the originating laboratory); (2) The originating laboratory will interpret the data generated by the vendor laboratory; (3) The originating laboratory will issue a report on the results of the analysis; or (4) The originating laboratory will enter or search a DNA profile in CODIS from data generated by the vendor laboratory. Forensic Biology takes ownership of CODIS specimens submitted by other agencies for testing at OCME, for instance Unidentified Human Remains that were received for mitochondrial DNA testing.
Partial Match	An association between two single-source (clean or fully deconvoluted profiles), showing similarities but short of an exact match, that suggests that the source of an evidentiary profile is potentially a relative of the source of the other, partially matching, profile. Partial matches are inadvertent, and may be found at the local, state, or national levels (through comparison at the bench, LINKAGE, or CODIS searches).
Paternal Relative	The known reference sample voluntarily provided by a paternal biological relative who is not a father, child or sibling of a reported missing person. The DNA profiles for this specimen category are stored in the Relatives of Missing Person Index. These DNA profiles are removed once the individual for whom the samples were submitted has been identified or if the individual voluntarily providing the reference sample is determined not to be related to the missing person.
Pedigree Tree (Index)	The Pedigree Tree Index consists of DNA records of relatives and spouses of missing persons that are associated with a Pedigree Tree.

Pending	A CODIS disposition choice used temporarily while awaiting the final results from a confirmed match from the investigating agencies.
Perpetrator	The individual who commits a crime. The identity of the perpetrator may or may not be known to the police.
Personally Identifiable Information	Information that includes, but is not limited to, names, dates of birth, and social security numbers used to identify individuals. Personally identifiable information does not include information derived from the examination of the DNA sample.
Platform	The type of analytical system utilized to generate DNA profiles such as capillary electrophoresis, real-time gel, and end-point gel instruments or systems.
Positive Human DNA Control	A known reference DNA sample traceable to the NIST standard reference material for which the DNA profile is known, and is used to demonstrate the acceptable performance of a DNA test.
Popstats	CODIS program available within the CODIS software to perform statistical calculations using the FBI population databases.
Privacy Act	Regulation which determines what information can be entered into CODIS in order to protect the rights of the individual.
Proficiency Testing	A quality assurance measure used to monitor performance and identify areas in which improvement may be needed. Proficiency tests may be classified as: (1) An internal proficiency test, which is produced by the agency undergoing the test. (2) An external proficiency test, which may be open or blind, is a test obtained from an approved proficiency test provider.
Qualified Auditor	A current or previously qualified DNA analyst who has successfully completed the FBI DNA Auditor's training course.

Qualified DNA Analyst	A DNA analyst who has satisfied and continues to satisfy the experience, education, training, proficiency testing and continuing education requirements of the FBI Director's Quality Assurance Standards (Standards 5 and 13), issued in accordance with the DNA Identification Act of 1994, as well as successful completion of a qualifying test prior to beginning casework or databasing responsibilities. In the Department of Forensic Biology a Qualified DNA Analyst is defined as an Interpreting Analyst who is a Criminalist II or higher title meeting the above requirements.
Quality Assurance	Those planned or systemic actions necessary to provide adequate confidence that a product or service will satisfy given requirements for quality.
Quality Control	The day-to-day operational techniques and activities used to fulfill requirements of quality.
Ranks	Associations made in NG CODIS from Relatives of Missing Persons in a pedigree tree to Unidentified Human Remains. The cases are ranked in joint pedigree likelihood ratio order.
Reference sample	A casework reference sample is biological material obtained from a known individual and collected for purposes of comparison to forensic samples. Also known as an exemplar or known DNA sample.
Relatives of Missing Person (Index)	Consists of DNA records from the biological relatives of individuals reported missing.
Requesting Laboratory	A laboratory that sends a request to the SDIS or NDIS Custodian to search SDIS or NDIS.
Required Allele	Specific designated alleles of a specimen are required to match in order for CODIS to declare a match. Required alleles are attributable to the perpetrator in a mixture, and are designated with a "+." Only one allele per locus can be so designated.

Required Alleles Specimen Category	A specimen category of forensic unknowns and/or forensic mixtures which can have up to one allele marked as an obligate, per locus. Samples in this category are only searched at LDIS and SDIS, not NDIS.
Revised Cambridge Reference Sequence (rCRS)	A revision of the standard sequence (CRS) used in mitochondrial DNA typing.
"Scientific Reason"	A statement that supports a search using fewer than the required minimum of STR loci at the state or national level, such as the apparent presence of mixtures, sample degradation or limited sample availability.
SDIS	The **S**tate **D**NA **I**ndex **S**ystem. The State's repository of DNA records under the control of state authorities. SDIS is typically the central point of contact between all New York State local labs and NDIS. (See also Convicted Offender Laboratory).
SDIS Custodian	An employee or designee of the New York State Police responsible for, among other duties, maintaining SDIS, fulfilling technical requirements of CODIS and proper operation of the computer hardware on which the DNA Databank resides.
Search	A method for comparing target and candidate profiles to see if any match.
Search Stringency Parameters	Allows the user to define the number of alleles per locus that the target profile and candidate profile must have in common. It is a user-defined setting that is used as a filter to report locus matches of equal or higher stringency (see Low Stringency, Moderate Stringency, High Stringency).
Search Results	After CODIS determines that two or more DNA profiles match, an electronic report is generated by CODIS and is distributed to the laboratories responsible for the matching profiles.
Searcher	Searcher is an application within the CODIS suite of software products. It provides a means of locating specific DNA profiles by searching the profiles within the CODIS indexes for potential matches to a target DNA profile.

Specimen/Sample	The biological sample (for example, blood, semen or epithelial cells) that is the object of DNA analysis for purposes related to forensic identification or statistical population sampling.
Specimen Category	Used to classify a DNA profile and determine into which index a specimen can be transferred. For example, unidentified person, forensic unknown and low copy number categories will be inserted into the Forensic index.
Specimen ID	Identification number associated with a DNA profile entered into the CODIS system. Specimen ID numbers must be unique and can be no longer than 24 characters. The OCME Department of Forensic Biology uses a standard format which is explained in section 4.1 of this manual.
Specimen Manager	Specimen Manager (SpecMan) is a CODIS module that provides a simplified, central interface for managing specimens (DNA records). In SpecMan, views of specimens can be created using different criteria, specimens can be marked/unmarked for upload and uploads can be sent.
Spouse	The known reference sample voluntarily provided by a presumptive parent of a common child. The DNA profiles for this specimen category are stored in the Spouse Index. The DNA record of a spouse shall be removed if the missing person corresponding to this reference sample has been identified.
Spouse Index	A Spouse Index consists of the DNA records of a presumptive parent of a common child of a missing person.
Statute of Limitation	A statutory provision which sets forth the maximum period of time that can lapse after a criminal act occurs for it to be taken to court. If that maximum time period passes and the perpetrator has not been formally charged for the criminal act, then he or she never can be.
Stringency	Stringency levels define the number of alleles that must match in order to produce a match (low, moderate, or high).

Subject Index	An Index in the State DNA Database that contains samples from convicted offenders seeking early release from prison or parole, probation instead of prison, a plea bargain to a lesser offense or those participating in the Department of Correctional Services' discretionary program that results in early release of the offender into the community.
Submission Form	The DNA Databank Specimen Submission Form. This form, which contains the bar code number of the offender's sample, is submitted to the convicted offender laboratory along with the offender's DNA sample. This form contains the offender's identifying information, and the facility responsible for the sample collection.
Submitting Agency	The agency that submitted evidence to a forensic DNA crime laboratory. The submitting agency is responsible for investigating crimes.
Suspect	An individual whose identity is known to the police and who is alleged to be the perpetrator of a crime. Exemplars collected from a suspect, such as blood or buccal specimens, or pseudo-exemplars such as cigarette butts or soda bottles, received in the laboratory for DNA comparison purposes, are considered evidentiary.
Suspect Case	1. A case in which DNA has been conducted and the listed suspect(s) have been included. 2. A case with a suspect listed and no DNA analysis has been performed to exclude them.
Target DNA Profile	A target profile is a DNA profile for which you are trying to find a matching DNA profile. This profile is submitted by a criminal justice agency for the purpose of searching against DNA profiles maintained by SDIS and NDIS which could match an indexed DNA profile.
Technical Leader	An employee who is accountable for the technical operations of the laboratory and who is authorized to stop or suspend laboratory operations.

Technology	The type of forensic DNA analysis performed in the laboratory, such as RFLP, STR, YSTR, or mitochondrial DNA.
Unidentified Human (Remains) Index	Consists of DNA records from recovered living persons (for example, children who can't and others who can't or refuse to identify themselves), and recovered dead persons (including their body parts and tissues) whose identities are not known.
Unidentified Person	The DNA profile developed from the recovered deceased (including body parts and tissue) or an individual who is unidentified (for example, children who can't and others who can't or refuse to identify themselves). The DNA profile for this specimen category is stored in the Unidentified Human (Remains) Index.
Upload	The transfer of electronic data from a lower level of CODIS (LDIS or SDIS) to an upper level (SDIS or NDIS).
User	Personnel who have login access to CODIS and/or qualified DNA analysts who are responsible for producing the DNA profiles stored in NDIS.
User Defined 1, 2, 3	CODIS case dispositions that can be defined by the user in the event that the others are not appropriate. User Defined 1 is not used in OCME's LDIS. User Defined 2 is generally used when a forensic sample hits an additional sample taken from the same offender which the forensic sample had hit previously. This is defined by agreement among all the NY labs. User Defined 3 is generally used when a forensic sample hits a known sample at SDIS which turns out to be a victim, witness, consensual partner or other elimination sample which was unable to be obtained for in-house testing. Forensic samples involved in matches/hits of this type are then removed from the database. This disposition is also the "catch-all" for all other uncommon match resolutions. This disposition is defined as needed by the LDIS lab upon concurrence by SDIS.

Use and Dissemination Agreement	An official document allowing the transfer of Databank information from one agency to another. This document contains requirements for the confidentiality and dissemination of DNA information and procedures for laboratories participating in SDIS and NDIS.
Waiting for More Data	Disposition in CODIS 5.7.4 and NG CODIS. Additional testing may be needed to confirm or refute the match or rank.
Warm match/hit	A warm match occurs when CODIS DNA profiles match based on prior knowledge. A typical example is when DNA profiles from several cases match that were submitted to the laboratory as a pattern, or when a suspect exemplar submitted for a particular case matches that case.

2.0 OVERVIEW OF THE CODIS PROGRAM

2.1 Forensic Biology CODIS Overview

The Department of Forensic Biology will enter DNA profiles from evidentiary items into LINKAGE and LDIS in accordance with departmental, New York State and FBI CODIS procedures. These profiles will be compared to DNA profiles from other Forensic Biology cases. The information in LDIS must either be eligible for entry into the New York State SDIS or be unmarked for upload (such as pattern or suspect profiles).

The primary requirement for a DNA profile to be entered into SDIS and NDIS is that it be from an item of evidence that reasonably could be expected to contain the alleles of the perpetrator. To attempt to eliminate the possibility of the alleles being from the victim or other non-perpetrator, there must be a good-faith effort to obtain the necessary victim exemplars or other elimination samples. Where appropriate, at least one such effort should be made and documented in the case record (e.g., NYPD paperwork, communication log, etc.)

NOTE: DNA profiles are eligible for LINKAGE and/or LDIS only if a crime has been committed. If a case has been deemed to be unfounded by the NYPD, no DNA profile generated in that case is eligible for entry.

Forensic DNA profiles in LDIS will be compared to all other forensic DNA profiles in LDIS. After upload to SDIS, they will be compared to profiles contained within the New York State SDIS. Those DNA profiles eligible for NDIS will be uploaded to NDIS and compared to profiles within NDIS.

Candidate matches will be subjected to a confirmation process, including review of the associated case file(s) and data. After a forensic-forensic, forensic-offender, forensic-arrestee, or forensic-suspect match has been confirmed, the New York City Police Department and the appropriate District Attorney's Office(s) will be notified.

Missing persons candidate matches will be subjected to a confirmation process, including review of the associated case file(s) and data. After the match has been confirmed, the Medical Examiner of record and the OCME Identification Unit will be notified.

The Department of Forensic Biology will track the usefulness of the CODIS databanking program with the assistance of the Office of the Criminal Justice Coordinator, Offices of the District Attorney and the New York City Police Department.

2.2 Combined DNA Index System (CODIS)

COmbined DNA Index System (CODIS) is the Federal Bureau of Investigation Program that refers to the entire system of DNA indexes (convicted offender index, forensic index, etc.). CODIS is a hierarchy of DNA databases from forensic laboratories around the United States maintained at the Local, State and National levels. It contains DNA profiles of individuals previously convicted of serious crimes as well as forensic DNA profiles (collected from items of evidentiary value). Suspect profiles may be maintained and searched at the local level only. Its function is to identify DNA matches between convicted individuals and forensic DNA profiles as well as DNA matches between forensic DNA profiles. As of January 2003, all 50 states, Puerto Rico, Guam and 2 federal labs participate in CODIS. The goal of CODIS is to provide investigative assistance to law enforcement investigators in the field.

2.3 Forensic Biology Local DNA Analysis System (LDAS or LINKAGE)

The Department of Forensic Biology maintains a Local DNA Analysis System (LDAS or LINKAGE). This is a Paradox database of DNA profiles generated during the analysis of cases. LINKAGE does not contain mixed profiles or DNA profiles from convicted offenders. It does contain DNA profiles from suspects identified during the investigation of offenses. LINKAGE is maintained separately from the CODIS software. Its function is to identify potential local hits quickly before case completion so that these cases may be expedited.

See also Section 4.4

2.4 CODIS Local DNA Index System (LDIS)

The CODIS Local DNA Index System (LDIS) contains forensic DNA records selected from LINKAGE as well as forensic mixture profiles, missing person profiles, and relatives of missing person profiles. LDIS may contain suspect profiles, which are not eligible for SDIS or NDIS. One function of LDIS is to search for DNA matches involving mixture profiles (not previously identified in LINKAGE) as well as those matches already identified through LINKAGE. It also serves to select eligible profiles for submission to the higher levels of the CODIS hierarchy.

See also Section 4.5.

2.5 CODIS State DNA Index System (SDIS)

The CODIS State DNA Index System (SDIS) contains the DNA records from all local DNA laboratories within the state. SDIS is the next level after LDIS in the CODIS hierarchy. It is the state's repository of DNA identification records and is under control of state authorities. In New York, the SDIS is maintained by the New York State Police Forensic Investigation Center. In most states, including New York, SDIS has a Forensic index and a Convicted Offender index. SDIS typically serves as the central point of contact for the state and for access to NDIS.

2.6 CODIS National DNA Index System (NDIS)

The CODIS National DNA Index System (NDIS) is the FBI-administered centralized system of DNA identification records contributed by all state and local participating laboratories. NDIS is the highest level in the CODIS hierarchy and receives records from every lower level and supports the searching function of CODIS.

2.7 Next-Generation CODIS, (CODIS 6.1 and CODIS 7)

The Next-Generation CODIS system is the analogous database system for Missing Persons cases. It also has three levels (local, state and national). It contains DNA (STR and mitochondrial) data from missing persons, unidentified remains, and relatives of missing persons. CODIS 6.1 replaced CODIS+mito in 2009. CODIS 7 replaced CODIS 6.1 in December 2011.

2.1 Forensic Biology CODIS Overview

The Department of Forensic Biology will enter DNA profiles from evidentiary items into LINKAGE and LDIS in accordance with departmental, New York State and FBI CODIS procedures. These profiles will be compared to DNA profiles from other Forensic Biology cases. The information in LDIS must either be eligible for entry into the New York State SDIS or be unmarked for upload (such as pattern or suspect profiles).

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NOTE: DNA profiles are eligible for LINKAGE and/or LDIS only if a crime has been committed. If a case has been deemed to be unfounded by the NYPD, no DNA profile generated in that case is eligible for entry.

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2.7 Next-Generation CODIS, or CODIS 6

The Next-Generation CODIS system is the analogous database system for Missing Persons cases. It also has three levels (local, state and national). It contains DNA (STR and mitochondrial) data from missing persons, unidentified remains, and relatives of missing persons. It replaced CODIS+mito in 2009.

3.1 Interpreting Analyst (Qualified DNA Analyst)

3.1.1 The interpreting analyst has the responsibility of determining whether or not a DNA profile is eligible for entry into LINKAGE and/or CODIS. The FBI has prepared a flowchart which is available to aid in the determination of CODIS eligibility; it is available in the CODIS directory on the network.

For those cases not easily resolved through the guidance provided in the flowchart, it is important to document your reasoning for determining eligibility. The DB Profile documentation has a notes section that should be used to document any such reasoning. If this reasoning is documented, it should be communicated to the CODIS group upon submission of the CODIS eligible profile.

3.1.2 The interpreting analyst communicates his/her determination(s) to their designated supervisor (Criminalist IV), Assistant Director, CODIS Program Manager and the CODIS support staff through the use of the DB Profile Evaluation documentation in the LIMS system.

3.1.3 It is primarily the responsibility of the interpreting analyst to compare appropriate preliminary DNA profiles to those in LINKAGE and LDIS, determine if there are any local matches (either to another case or to a suspect), and expedite any needed testing. If a pending match is confirmed, the analyst must enter the appropriate data on the DNA-HITS secure website. The DNA-HITS entry must be reviewed before it is approved and notification made.

3.1.4 It is the responsibility of the interpreting analyst to alert their supervisor of any CODIS-related actions on their case work. Such actions would include subsequent determination that a profile should be removed from CODIS (sample known to have come from the victim, husband or boyfriend) or an incorrect interpretation was made so a profile must be modified. The supervisor will then alert the appropriate Assistant Director and the CODIS Program Manager. The supervisor will ensure the appropriate paperwork is filled out and provide this information to the CODIS support staff for processing.

3.2 Criminalist IIIs

3.2.1 Criminalist IIIs are responsible for entering selected DNA profiles associated with evidence into LINKAGE, based on the DNA Profile Evaluation Forms prepared by the Interpreting Analyst, prior to technical review of the case. Criminalist IIIs are also responsible for entering selected DNA profiles associated with exemplars or pseudo-exemplars from suspects into LDIS, based on the DNA Profile Evaluation Forms prepared by members of the X-Team, prior to technical review of the case.

This process is for the purpose of timely entry of DNA profiles into LINKAGE and is not sufficient for entry of CODIS eligible DNA profiles into LDIS.

3.2.2 Any such entry must be documented by verifying the event in the section referring to LINKAGE and/or LDIS entry on the DB Profile documentation. Since entry into LINKAGE and/or LDIS in this manner is neither a technical review of the case, nor an administrative review of a report and supporting documentation, it is not necessary to note it on the schedule of analysis.

3.3 Criminalist IVs

3.3.1 Criminalist IVs are responsible for reviewing CODIS profiles submitted with each case they review for accuracy, completeness, correct specimen identification numbers, any local matches, ensuring profiles are not from elimination sources and meet criteria for entry into CODIS. For cases reviewed by Criminalist IVs only (and not Assistant Directors), the reviewing Criminalist IV is responsible for transferring appropriate DNA profiles into LINKAGE and routing the DB Profile documentation to the CODIS support staff for entry into LDIS.

3.3.2 Criminalist IVs are responsible for notifying the NYPD designee and the appropriate DAO bureau chief after completion of the match confirmation process for local DNA matches discovered in LINKAGE and/or LDIS. This includes ensuring that the DNA-HITS data entry has been completed.

3.3.3 Criminalist IVs are responsible for communication with other laboratories and law enforcement agencies needed to investigate local, state, and national **confirmed** CODIS matches. The interpreting analyst will aid in this process.

3.3.4 Criminalist IVs are primarily responsible for requesting exemplars and elimination samples from victims, family members, employees of businesses or any other exemplars as needed. These requests go to the NYPD and/or the appropriate district attorney's office.

3.4 Assistant Directors

3.4.1 Assistant Directors are responsible for reviewing CODIS profiles submitted with each case they review for accuracy, completeness, correct specimen identification numbers, any local matches, ensuring profiles are not from elimination sources and meet criteria for entry into CODIS. This includes bringing any CODIS considerations related to a case that may not be apparent from the DB Profile documentation to the attention of CODIS support staff.

3.4.2 Assistant Directors are responsible for transferring appropriate DNA profiles into LINKAGE and routing the DB Profile documentation to the CODIS support staff for entry in LDIS.

3.4.3 Assistant Directors are responsible for reviewing data required for match confirmations and hit notifications for local matches made in LINKAGE and/or LDIS.

3.5 CODIS Support Staff

3.5.1 Wherever possible, the CODIS support staff is responsible for reviewing the data contained in the DB Profile documentation submitted with each case for completeness before entering data into LDIS. A copy of each sheet will be made and placed in the case file; the original will be kept in a binder in the CODIS area.

3.5.2 The CODIS support staff is responsible for performing autosearches of the database, sending the New York State SDIS a regularly-scheduled upload of forensic profiles, processing CODIS data modifications, expungements, deletions, monthly hit counting and general maintenance of the database.

3.5.3 The CODIS support staff is responsible for the retrieval of Forensic Biology files involved in candidate matches made through the CODIS software, evaluating candidate matches and ensuring that the appropriate agencies are notified of all confirmed matches made through the CODIS software.

Exceptions to the above are made for candidate matches involving LCN profiles and Missing Persons/Unidentified Persons profiles. For LCN candidate matches, the evaluation of the candidate match is done by a member of the LCN group, with the notification done by the CODIS support staff. For MP/UP candidate matches, both the evaluation and notification is done by a member of the Missing Persons group.

3.5.4 CODIS support staff is responsible for maintaining system records including all relevant paperwork, maintenance of all binders containing the DB Profile documentation, CODIS user information, and all other CODIS documentation. All binders will be maintained in the CODIS area.

3.5.5 CODIS support staff is responsible for training system users and new CODIS staff concerning practical CODIS issues.

3.5.6 The LDIS database is backed up automatically, by the city's network systems.

3.6 CODIS Administrator

3.6.1 A CODIS Administrator is a member of the CODIS staff with administrative rights as defined by the CODIS Supervisor. The CODIS Supervisor, CODIS Manager and designated members of the CODIS group as designated by the CODIS supervisor, have Administrator rights.

3.6.2 These rights include, but are not limited to: entering profiles into CODIS, software updates, autosearches in LDIS, keyboard searches in LDIS, deleting/modifying profiles in LDIS, user maintenance and processing uploads.

3.7 CODIS Custodian/Supervisor (Criminalist IV)

3.7.1 The CODIS Custodian/Supervisor is the system administrator of the laboratory's CODIS network. The CODIS Custodian is responsible for overseeing all operations of the CODIS system. This responsibility includes, but is not limited to: entering profiles into CODIS, software updates, user maintenance, processing uploads, evaluating candidate matches, hit notifications, oversight of CODIS computer training, quality assurance and security of DNA profile data stored in CODIS.

3.7.2 The CODIS Custodian/Supervisor has the authority to terminate the laboratory's participation in CODIS in the event of a problem until the reliability of the computer data can be assured.

3.7.3 The CODIS Custodian/Supervisor is the liaison between the Forensic Biology Department and the SDIS Custodian of the New York State Police Forensic Investigation Center.

3.7.4 The CODIS Custodian/Supervisor is responsible for reviewing the biweekly upload resolution, monthly hit counting and ensuring that all candidate matches have been evaluated and dispositioned.

3.7.5 The CODIS Custodian/Supervisor is responsible for the oversight of maintenance and filing of all paperwork required for NDIS participation such as proficiency test and audit documentation.

3.7.6 The CODIS Custodian/Supervisor is responsible for supervising the CODIS support staff and ensuring that all functions associated with CODIS staff are performed in a timely manner.

3.7.7 The CODIS Custodian/Supervisor and the CODIS Program Manager, together, have the authority to modify or remove profiles from the database which are causing an excessive amount of spurious (false) candidate matches. Modifications could be accomplished by the addition of the obligate allele designation to one or more loci or by other methods as deemed appropriate to the sample.

3.8 CODIS Program Manager (Assistant Director)

3.8.1 The CODIS Program Manager is responsible for the supervision of the CODIS staff.

3.8.2 The CODIS Program Manager is responsible for insuring the Forensic Biology Department is in compliance with the FBI Quality Assurance standards relevant to CODIS.

3.8.3 The CODIS Program Manager is responsible for determining if there is an acceptable need to request a keyboard search at SDIS/NDIS at the request of the NYPD or DAO.

In the absence of the CODIS Program Manager, a keyboard search at SDIS/NDIS may be approved by the CODIS Custodian or a member of the management team.

3.9 Network Support Staff

3.9.1 Information technology specialists from DOITT, the city's computer service, are responsible for day-to-day maintenance (including regular backups) and physical and electronic security of the CODIS servers and other hardware.

3.9.2 Those IT staff members with access to the CODIS server must undergo the FBI security clearance process and be added to the user list as CODIS IT users. They are not authorized to enter profiles or manipulate them.

3.0 ORGANIZATION AND MANAGEMENT

DATE EFFECTIVE	LAST REVISED	APPROVED BY	PAGE
03-24-2010	07-28-2010	MARIE SAMPLES	1 OF 6

3.1 Interpreting Analyst (Qualified DNA Analyst)

3.1.1 The interpreting analyst has the responsibility of determining whether or not a DNA profile is eligible for entry into LINKAGE and/or CODIS. The FBI has prepared a flowchart which is available to aid in the determination of CODIS eligibility; it is available in the CODIS directory on the network.

For those cases not easily resolved through the guidance provided in the flowchart, it is important to document your reasoning for determining eligibility. The DNA Profile Evaluation Form has an additional page that should be used to document any such reasoning.

3.1.2 The interpreting analyst communicates his/her determination(s) to their designated supervisor (Criminalist IV), Assistant Director, CODIS Program Manager and the CODIS support staff through the use of the appropriate DNA Profile Evaluation Form (colloquially known as the CODIS sheet) found in Appendix 9.1.

3.1.3 It is primarily the responsibility of the interpreting analyst to compare appropriate preliminary DNA profiles to those in LINKAGE and LDIS, determine if there are any local matches (either to another case or to a suspect), and expedite any needed testing. If a pending match is confirmed, the analyst must enter the appropriate data on the DNA-HITS secure website. The DNA-HITS entry must be reviewed before it is approved and notification made.

3.1.4 It is the responsibility of the interpreting analyst to alert their supervisor of any CODIS-related actions on their case work. Such actions would include subsequent determination that a profile should be removed from CODIS (sample known to have come from the victim, husband or boyfriend) or an incorrect interpretation was made so a profile must be modified. The supervisor will then alert the appropriate Assistant Director and the CODIS Program Manager. The supervisor will ensure the appropriate paperwork is filled out and provide this information to the CODIS support staff for processing.

3.2 Criminalist IIIs

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This process is for the purpose of timely entry of DNA profiles into LINKAGE and is not sufficient for entry of CODIS eligible DNA profiles into LDIS.

3.2.2 Any such entry must be documented by dating and initialing the section referring to LINKAGE and/or LDIS entry on the DNA Profile Evaluation Form. Since entry into LINKAGE and/or LDIS in this manner is neither a technical review of the case, nor an administrative review of a report and supporting documentation, it is not necessary to note it on the schedule of analysis form.

3.3 Criminalist IVs

3.3.1 Criminalist IVs are responsible for reviewing CODIS profiles submitted with each case they review for accuracy, completeness, correct specimen identification numbers, any local matches, ensuring profiles are not from elimination sources and meet criteria for entry into CODIS. For cases reviewed by Criminalist IVs only (and not Assistant Directors), the reviewing Criminalist IV is responsible for transferring appropriate DNA profiles into LINKAGE and routing the DNA Profile Evaluation Form to the CODIS support staff for entry into LDIS.

3.3.2 Criminalist IVs are responsible for notifying the NYPD designee and the appropriate DAO bureau chief after completion of the match confirmation process for local DNA matches discovered in LINKAGE and/or LDIS. This includes ensuring that the DNA-HITS data entry has been completed.

3.3.3 Criminalist IVs are responsible for communication with other laboratories and law enforcement agencies needed to investigate local, state, and national **confirmed** CODIS matches. The interpreting analyst will aid in this process.

3.3.4 Criminalist IVs are primarily responsible for requesting exemplars and elimination samples from victims, family members, employees of businesses or any other exemplars as needed. These requests go to the NYPD and/or the appropriate district attorney's office.

3.4 Assistant Directors

3.4.1 Assistant Directors are responsible for reviewing CODIS profiles submitted with each case they review for accuracy, completeness, correct specimen identification numbers, any local matches, ensuring profiles are not from elimination sources and meet criteria for entry into CODIS. This includes bringing any CODIS considerations related to a case that may not be apparent from the DNA Profile Evaluation Form to the attention of CODIS support staff.

3.4.2 Assistant Directors are responsible for transferring appropriate DNA profiles into LINKAGE and routing the DNA Profile Evaluation Form to the CODIS support staff for entry in LDIS.

3.4.3 Assistant Directors are responsible for reviewing data required for match confirmations and hit notifications for local matches made in LINKAGE and/or LDIS.

3.5 CODIS Support Staff

3.5.1 The CODIS support staff is responsible for reviewing the data contained in the DNA Profile Evaluation Form submitted with each case for completeness before entering data into LDIS. A copy of each sheet will be made and placed in the case file; the original will be kept in a binder in the CODIS area.

3.5.2 The CODIS support staff is responsible for performing autosearches of the database, sending the New York State SDIS a regularly-scheduled upload of forensic profiles, processing CODIS data modifications, expungements, deletions, monthly hit counting and general maintenance of the database.

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3.5.4 CODIS support staff is responsible for maintaining system records including all relevant paperwork, maintenance of all binders containing the DNA Profile Evaluation Forms, CODIS user information, and all other CODIS documentation. All binders will be maintained in the CODIS area.

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3.6.1 A CODIS Administrator is a member of the CODIS staff with administrative rights as defined by the CODIS Supervisor. The CODIS Supervisor, CODIS Manager and designated members of the CODIS group as designated by the CODIS supervisor, have Administrator rights.

3.6.2 These rights include, but are not limited to: entering profiles into CODIS, software updates, autosearches in LDIS, keyboard searches in LDIS, deleting/modifying profiles in LDIS, user maintenance and processing uploads.

3.7 CODIS Custodian/Supervisor (Criminalist IV)

3.7.1 The CODIS Custodian/Supervisor is the system administrator of the laboratory's CODIS network. The CODIS Custodian is responsible for overseeing all operations of the CODIS system. This responsibility includes, but is not limited to: entering profiles into CODIS, software updates, user maintenance, processing uploads, evaluating candidate matches, hit notifications, oversight of CODIS computer training, quality assurance and security of DNA profile data stored in CODIS.

3.7.2 The CODIS Custodian/Supervisor has the authority to terminate the laboratory's participation in CODIS in the event of a problem until the reliability of the computer data can be assured.

3.7.3 The CODIS Custodian/Supervisor is the liaison between the Forensic Biology Department and the SDIS Custodian of the New York State Police Forensic Investigation Center.

3.7.4 The CODIS Custodian/Supervisor is responsible for reviewing the biweekly upload resolution, monthly hit counting and ensuring that all candidate matches have been evaluated and dispositioned.

3.7.5 The CODIS Custodian/Supervisor is responsible for the oversight of maintenance and filing of all paperwork required for NDIS participation such as proficiency test and audit documentation.

3.7.6 The CODIS Custodian/Supervisor is responsible for supervising the CODIS support staff and ensuring that all functions associated with CODIS staff are performed in a timely manner.

3.7.7 The CODIS Custodian/Supervisor and the CODIS Program Manager, together, have the authority to modify or remove profiles from the database which are causing an excessive amount of spurious (false) candidate matches. Modifications could be accomplished by the addition of the obligate allele designation to one or more loci or by other methods as deemed appropriate to the sample.

3.8 CODIS Program Manager (Assistant Director)

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In the absence of the CODIS Program Manager, a keyboard search at SDIS/NDIS may be approved by the CODIS Custodian or a member of the management team.

3.9 Network Support Staff

3.9.1 Information technology specialists from DOITT, the city's computer service, are responsible for day-to-day maintenance (including regular backups) and physical and electronic security of the CODIS servers and other hardware.

3.9.2 Those IT staff members with access to the CODIS server must undergo the FBI security clearance process and be added to the user list as CODIS IT users. They are not authorized to enter profiles or manipulate them.

4.1 CODIS Identification Number (Specimen ID Number)

4.1.1 Each profile entered into CODIS will have a unique identifier. Only letters and numbers will be used in the body of the description. Do not use any other spaces or any other characters, except a dash (-) or grant-tracking special characters (# or $) when indicated below. The standardized format for entering specimen information into CODIS is as follows:

The first eight to ten characters will encompass the Forensic Biology laboratory number (last two digits of the year, followed by a dash, preceding a four or five digit case number) followed by a dash. If the specimen is from a contract laboratory the year will be preceded by a laboratory abbreviation (Bode Technologies (BT or BTB), Cellmark Diagnostics (CD) or Genescreen (GS)).

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

Post mortem items: add PM followed by the item number followed by a dash.

The final set of characters will be reserved for sample type and identification:

Stained items (sheets, clothing, etc.): add a few (2 to 6) letters that describe the item, the item number, and the stain designation followed by a dash. 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 need not contain the item or stain number. This segment may need to be shortened to help the Specimen ID comply with the 24-character upper limit.

For stains with differential extractions the designations below will apply to the fractions.

Sexual assault kit items: the abbreviated descriptions for source and differential extraction fraction (if appropriate) below will be used. Stain designations or the dried secretion swab numbers should NOT be used unless there are multiple DNA contributors from the same case on the same sample type, and samples need to be distinguished from one another:

Dried secretions swabs described as **DS**
Oral swabs or smears described as **OS**
Vaginal swabs or smears described as **VS**
Vulvar swabs or smears described as **VU**
Cervical swabs or smears described as **CS**
Anal swabs or smears described as **AS**
Perianal swabs or smears described as PA
Penile swabs or smears described as PS
Underwear described as **UW**
Sperm fraction described as SF
Epithelial fraction described as EF
Substrate/swab remains fraction described as SR

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

- Case number followed by a dash.
- For vouchered items, add last three digits of the voucher followed by a dash.
- 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

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**

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.

Unidentified Human Remains: utilize "**PM**" and item number followed by a dash or item number depending on where the item is submitted from

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 worked on weekend overtime grant money
$ - for cases worked with grant-funded supplies

Case type indicator: the last notation is a pair of letters indicating the case type.

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	use for any case type not covered above

4.1.2 Examples

Example 1: case no: FB07-00022, voucher N123456, item #1: purple shirt, stain 1B; assault. Specimen ID number will be: *07-00022-456-PS1B-AS*

Example 2: case no: FB00-1257, post mortem kit item PM 2F, vaginal swab, sperm cell fraction, homicide. Specimen ID number will be: *00-1257-PM2F-VSSF-HO*

Example 3: case no: FB08-01034, voucher P124589, item #1B: glove, scrapings, burglary, examined on a weekend. Specimen ID number will be: *08-01034-589-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 1A1, sperm cell fraction, sexual assault. Specimen ID number will be: *CD01-0001-123-UW1A1SF-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 number will be: *04-1234-456-0110-S1-R-MP* and *04-1234-456-S2-R-MP*

There is a maximum limit of 24 characters for the specimen identification number in CODIS. The above specimen identification system should not be deviated from unless it is necessary to distinguish two samples, or under unusual case situations.

4.1.3 **Suspect profiles entered into LDIS will have specimen ID's of the form XXX-10-S0000.** This radically different format is intended to prevent the CODIS team and others from placing the suspect in the wrong index where it might be accidentally uploaded.

4.2 General Guidelines for Entering STR Profiles into CODIS (see also table at the end of this section)

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 LINKAGE and/or CODIS, as well as ensuring that appropriate exemplars and/or elimination samples have been requested at least once.

4.2.3 All 13 core STR loci 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 a. A minimum of 6 core loci are necessary for entry into CODIS in order to be uploaded to SDIS. A minimum of 10 core loci are necessary in order to be uploaded to NDIS.

b. For Missing Persons and Unidentified Human Remains cases, the following minimum core loci plus Amelogenin are necessary for upload into CODIS and Next Generation CODIS:

Unidentified Human Remains: 6 for SDIS, 8 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 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 4.3.6b. This convention may not be used for Missing Persons, Relatives of Missing Persons, and Unidentified Human Remains cases. This convention may not be used for suspect samples.

4.2.7 Forensic mixture DNA profiles shall have up to 4 alleles at a maximum of 4 core loci (the “4 x 4 rule”). Any of the remaining core loci shall have no more than 2 alleles at each locus. NOTE: this means that a 2-allele mixture identified by peak imbalance *does not* count against the rule and is not considered a mixture by the CODIS software. Non-core loci (e.g. Powerplex Pentas or Identifiler D2S1338 and D19S433) *do* count for this rule.
This convention may not be used for Missing Persons, Relatives of Missing Persons, and Unidentified Human Remains cases.

4.2.8 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*.

4.2.9 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.

4.2.9.1 When a profile is removed from CODIS for any reason, a statement in the report must indicate that the profile was previously searched but has been removed. Depending on the timing of the removal, the statement may be in the initial report or in an additional report.

4.2.10 Currently, profiles developed using Low Copy Number amplification techniques are not eligible for entry into NDIS. They can, however, be uploaded to NY-SDIS for searching, via the Low Copy Number Index. Samples in this SDIS Index are unmarked for any further upload (i.e. to NDIS).

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

4.3.2 A minimum of six fully-deduced loci must be present in a mixture sample for the mixture profile to be eligible for entry into NDIS. As many loci and alleles as possible should be included in the profile submitted to the database.

4.3.3 When a locus can be only partially deduced, use of the obligate allele designator, a "+" aids in stringency searches by preventing some of the spurious moderate matches possible at mixed loci.

4.3.4 A locus may be designated inconclusive ("INC") on the DNA Profile Evaluation form at the discretion of the interpreting analyst and their supervisor if an ambiguity exists at that locus (see section for Type II mixtures below). This locus, however, should still be used in the confirmation process once a candidate match is made.

4.3.5 **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 LINKAGE and LDIS.

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 LINKAGE and LDIS.

4.3.6 **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 alleles at all deduced loci. Any loci that cannot be deduced can be entered as a mixture with the obligate allele indicated on the DNA Profile Evaluation Form with a "+". Because of possible allele sharing, all alleles at these loci must be listed on the DB Profile documentation (even if you know they belong to the victim).

The mixture loci cannot be entered into LINKAGE but will be entered into LDIS. 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 expected to be seen in 1 in more than a trillion people.

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 LCN 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 9 loci to meet the minimum amount (10 loci) needed in order to be searched at NDIS instead of being stopped at SDIS. Certain criteria must be met and documented for the CODIS group in order to justify using this method:

- Maximum 2 loci enhanced by this method.
- A statistical significance of the profile (or deduced loci) being approximately 1 in greater than 500,000,000. A copy of the population statistics printout must be provided to the CODIS group with a DNA profile of this type.
- This is the one and only instance on a DB Profile documentation when a single allele is entered in the box for that locus. The "+" must also be present.
- The interpreting analyst and/or supervisor submitting such a profile may be called upon to evaluate all candidate matches found when the profile is searched.

NOTE: Since DNA profiles developed using Low Copy Number techniques are not eligible for entry into NDIS, and are searched only at LDIS and SDIS, as indicated by the first criterion listed above, can be waived.

4.4 Entering STR Profiles into LINKAGE

4.4.1 DNA profiles will be entered into LINKAGE by Criminalist IIIs, Criminalist IVs, or management only. DNA profiles may be entered into LINKAGE without technical review; however, at the time the case file receives technical review the previously entered DNA profiles must be checked for eligibility and accuracy.

4.4.2 LINKAGE will be maintained separately from the CODIS software in the LINKAGE database on the Forensic Biology network.

4.4.3 LINKAGE contains STR loci from STR systems on- (or previously on-) line in the Forensic Biology laboratory. LINKAGE does requires a minimum number of 6 loci to be entered, but requires non-mixture (or fully-deduced) loci only be entered.

4.4.4 Profiles matching the victim or elimination samples (for example, a family member or a consensual sex partner) unambiguously will not be entered into LINKAGE. 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*.

NOTE: DNA profiles are eligible for LINKAGE and/or LDIS only if a crime has been committed. If a case has been deemed to be unfounded by the NYPD, no DNA profile generated in that case is eligible for entry.

4.4.5 Local suspect profiles will be entered into LINKAGE and/or LDIS (Suspect, Known Index), unless:

4.4.5.1 A properly executed court order dictates otherwise concerning a specific sample. When any court order or similar paperwork is received, the OCME Legal Department must be consulted and provided a copy of the paperwork.

4.4.5.2 The exemplar was submitted subsequent to a partial match notification and does not match the case for which it was submitted.

4.4.6 Non-victim DNA profiles derived from evidence that are not eligible for CODIS entry will be entered into LINKAGE (for example, a profile obtained from the clothing of a suspect).

4.5 Entering STR Profiles into LDIS

4.5.1 CODIS eligible profiles will be entered into LDIS by CODIS software-trained staff only. The profiles entered into LDIS must fall into one of the following CODIS categories: Forensic Unknown; Forensic Mixture; Required Alleles; Low Copy Number; Suspect, Known; Missing Persons Index; the Relatives of Missing Persons Index or the Unidentified Human (Remains) Index) or Other (see section 1.0 - CODIS Terms and Abbreviations for definitions; for procedural guidelines on how to enter a profile into LDIS, see the *FBI CODIS Training Manual*). For a list of NDIS-approved STR PCR kits, consult the current version of *NDIS Procedures*.

4.5.2 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.*

4.5.3 Profiles that are clearly unrelated to a case or crime will not be entered into CODIS. For example, a semen 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 appropriate Assistant Director and the CODIS Program Manager. The determination can be aided using the CODIS *Guide to Determining What is Allowable for Entry into the Forensic Index at NDIS*.

4.5.4 Local suspect profiles reside in the LINKAGE system and/or LDIS. ***They are not eligible for upload to higher levels of CODIS.***

4.5.5 Entry of a profile into LDIS will be documented on the DB Profile documentation. The DB Profile documentation report will be put in the file and the original will be filed in binders in the CODIS area.

4.5.6 Upload of a profile to SDIS will be documented by including a printout of the CODIS Specimen Detail Report in the case file. While secondary and later profiles in a pattern are not uploaded to SDIS, the Specimen Detail Report should still be generated, as it indicates the specimen's entry into the Pattern/Other index at LDIS.

4.5.7 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 can be found on the CODIS website.

4.5.8 Off ladder alleles should be entered as determined by the analysis software (e.g. an allele called as 9.1 should be entered as 9.1, not 9.x).

4.5.9 If a discrepancy exists on theDB Profile documentation (for example, , reviewer's initials are missing, the specimen ID appears incorrect or is too long) the Interpreting Analyst (IA) or the reviewing Criminalist IV or Assistant Director for that sheet must resolve the discrepancy **before** the data from that sheet is entered. Specimen ID problems may be corrected by a member of the CODIS support staff. Interpretation issues should be discussed with the appropriate Assistant Director.

4.6 Modifying or Deleting an STR Profile from CODIS

4.6.1 Modification of data already entered into CODIS may be due to several reasons:

- Additional testing has been completed on the sample.
- An interpretation error was discovered regarding the profile.
- The profile could be improved by the addition of the obligate allele designator "+".

Once it has been determined that a profile must be modified in CODIS, a Profile Modification form (see Appendix 9.2) 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 and a copy will be placed in the case file.

4.6.2 Any modification to a DNA profile previously uploaded to SDIS will be documented in the profile modification log (see Appendix 9.3).

4.6.3 Reasons for administrative removal/expungement might include:

- A profile entered is later determined to be an elimination sample.
- Documentation is provided for legal expungement.
- 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.
- Profiles from missing persons and/or relatives of missing persons are removed once a person is identified. Profiles from unidentified human remains will be removed only if the body recovered is intact.

Once it has been determined that a profile must be deleted from CODIS, a CODIS deletion form (see Appendix 9.4) must be filled out and submitted to the CODIS staff for processing. Unless there are time restraints surrounding the deletion [(for example, in response to a court order requiring it before the next local upload; if so, an Expungement Request letter will be sent to the SDIS custodian (see Appendix 9.5)], the deletion will be processed with the next upload to SDIS.

The original form will be maintained in the Case Deletion/Expungement form binder and a copy will be placed in the case file. The deletion will also be recorded in the Upload Deletion/Expungement log (see Appendix 9.6) 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.

4.7 Routine Searches of LINKAGE and LDIS

4.7.1 Interpreting analysts and their supervisors will routinely compare appropriate preliminary DNA profiles to those in LINKAGE and LDIS.

4.7.2 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.

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

4.7.4 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”).

4.7.5 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 matching files to the IA and supervisor who submitted the specimen, and delegate the match notifications to them.

4.8 Uploading Profiles to SDIS/NDIS and Search Policies

4.8.1 All appropriate LDIS profiles will be uploaded into SDIS by the CODIS staff. Currently New York State local DNA laboratories upload to SDIS biweekly, with the SDIS search performed shortly thereafter. Forensic STR Index, Unidentified Human (Remains) Index and Missing Person Index profiles containing 10 or more loci are searched at both high and moderate stringency. Profiles with 6-9 loci are searched at high stringency only unless placed in the “Required Alleles” index.

4.8.2 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.**

4.8.3 Only one (1) putative perpetrator profile per Forensic Biology DNA pattern will be uploaded to SDIS. Additional profiles from patterns will be placed in the Pattern/Other Index in LDIS, and will be unmarked for upload.

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

4.9 Other Searches

4.9.1 Only DNA profiles developed by the Department of Forensic Biology may be compared to and entered into LINKAGE. Requests to compare other DNA profiles to LINKAGE will not be approved and are not allowed.

4.9.2 Keyboard searches of LDIS, SDIS, and NDIS are only allowed of DNA profiles derived from evidence. Keyboard searches of DNA profiles from known individuals is not allowed.

4.9.3 Keyboard search requests of SDIS/NDIS are addressed to the Databank coordinator. This search is requested through the DCJS Databank coordinator and is executed at the discretion of the SDIS custodian.

Keyboard search requests of LDIS are addressed to the CODIS custodian, CODIS Program Manager, or the laboratory director.

4.9.4 There are assorted reasons a keyboard search would be requested by a laboratory. All requests must be accompanied by a Justification for Keyboard Search Request form (see Appendix 9.7).

Reason #1: The requesting laboratory wants to search a profile that does not meet the minimum loci requirements for SDIS or NDIS entry or would not be searched based upon SDIS or NDIS current search policy. Keyboard searches for this reason must be, accompanied with a documented scientific reason justifying the search (for example, apparent presence of mixtures, sample degradation or limited sample availability). Scientific justification must include but is not limited to a statistical significance of the profile (or deduced loci) being approximately 1 in greater than 500,000,000. A copy of the population statistics printout must be provided to the CODIS group with a justification of this type.

Reason #2: - The requesting agency wants to search a profile before the next search in a situation where a known convicted offender is a suspect in a particular case and there is an urgency for an expedited search. The initial request from a Bureau Chief from one of the District Attorney's Offices must be submitted in written form, **must be accompanied with a valid justification for the urgency,** and **it must be confirmed that the suspect in question is, in fact, in the databank. This confirmation is the responsibility of the requesting agency.** There must also be a documented conversation with an Assistant Director and appropriate case information. **Case information from the DAO must include:** the suspect's full name, NYSID number, social security #, and any known aliases.

The following reasons are considered valid urgency justifications by the Department of Forensic Biology to request a keyboard search to expedite a CODIS search at SDIS or NDIS:

- A suspect has been arrested for a particular case and will be released without the search. Additionally, there is no other evidence (eyewitness, fingerprints, etc.) to hold the suspect and attempts to obtain a DNA sample from the suspect have been exhausted.

- A strong investigative lead has developed a suspect in a particular case and the search will lead to an arrest. Additionally, there is no other evidence (eyewitness, prints, etc.) to arrest the suspect and attempts to obtain a DNA sample from the suspect have been exhausted.

<u>NOTE</u>: **Even if the DAO or NYPD can confirm a potential suspect has qualified for entry in the convicted offender databank this does not insure the sample has been collected, processed, or entered into the offender databank. Expedition of a convicted offender sample by DCJS does not have to be in response to a keyboard request. If the suspect is based on a strong investigative lead and the investigator wants to insure the corresponding convicted offender sample is in the offender databank before the next routine search they should be referred to DCJS. Investigators should always be advised to attempt to obtain a DNA sample from the suspect and submit it <u>directly</u> to Forensic Biology.**

<u>Reason #3</u>: - The requesting agency and/or the Department of Forensic Biology wants to search a profile before the next search in a situation where there is an urgency for an expedited search to attempt to identify an offender in a serious or serial crime.

<u>Reason #4</u>: The requesting laboratory is not CODIS ready. This type of search method is performed for criminal justice agencies that do not have access to CODIS. **All requests for keyboard searches from agencies that do not have CODIS should be referred to the NYS DCJS Databank coordinator.** This will enable the requesting agency to benefit from a statewide search and avoid duplicate local searches.

4.9.5 Both the CODIS Custodian/Supervisor and the CODIS Program Manager must approve keyboard search requests. Disagreements between the CODIS Program Manager and the analyst, supervisor, or manager requesting a keyboard search will be resolved by the laboratory director.

Once a keyboard search request has been approved, the interpreting analyst will fill out a Forensic Biology Keyboard Search Request form (see Appendix 9.8) and forward it to the CODIS staff for processing. All keyboard search requests will be processed by the CODIS staff. If the keyboard search request is for SDIS, the CODIS supervisor will discuss the request and case information with the DCJS Databank coordinator via telephone and fax the request form accordingly. The original request form and search results will be kept in the case folder. Keyboard search requests from outside laboratories are kept in the Keyboard Search requests binder. **The interpreting analyst requesting the keyboard search will be responsible for evaluating all candidate match results from the search *within 15 days* of receiving the results from the CODIS staff.**

NOTE: Prior to faxing a Keyboard Search Request form to SDIS, the CODIS staff will first perform an autosearch to identify any local candidate matches.

4.9.6 A forensic profile may be searched at a non-CODIS databank (for example, via Interpol). See the NDIS Procedures for further information.

4.9.7 A non-US 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.

Table – DNA Profile Evaluation Form entries for STR profiles derived from mixed samples

STR result	Interpretation	DNA Profile Evaluation Form	Will match
7, 8, 9	deduced contributor is 9, 9	9, 9	9, 9 (high stringency)
7, 8, 9	deduced contributor is 8, 9	8, 9	8, 9 (high stringency)
7, 8, 9	deduced contributor is 9, Z (where Z is either a 7 or 8 or 9)	7, 8, 9+	7, 9 or 8, 9 or 9, 9 (moderate stringency)
7, 8, 9**	deduced contributor is 9, Z (other non-called allele, possible drop-out, or LCN possible false homozygote)	INC or 9+	n/a 9 plus any other allele (moderate stringency)

4.1 CODIS Identification Number (Specimen ID Number)

4.1.1 Each profile entered into CODIS will have a unique identifier. Only letters and numbers will be used in the body of the description. Do not use any other spaces or any other characters, except a dash (-) or grant-tracking special characters (# or $) when indicated below. The standardized format for entering specimen information into CODIS is as follows:

The first eight to ten characters will encompass the Forensic Biology laboratory number (last two digits of the year, followed by a dash, preceding a four or five digit case number) followed by a dash. If the specimen is from a contract laboratory the year will be preceded by a laboratory abbreviation (Bode Technologies (BT or BTB), Cellmark Diagnostics (CD) or Genescreen (GS)).

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

Post mortem items: add PM followed by the item number followed by a dash.

The final set of characters will be reserved for sample type and identification:

Stained items (sheets, clothing, etc.): add a few (2 to 6) letters that describe the item, the item number, and the stain designation followed by a dash. 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 need not contain the item or stain number. This segment may need to be shortened to help the Specimen ID comply with the 24-character upper limit.

For stains with differential extractions the designations below will apply to the fractions.

Sexual assault kit items: the abbreviated descriptions for source and differential extraction fraction (if appropriate) below will be used. Stain designations or the dried secretion swab numbers should NOT be used unless there are multiple DNA contributors from the same case on the same sample type, and samples need to be distinguished from one another:

Dried secretions swabs described as **DS**
Oral swabs or smears described as **OS**
Vaginal swabs or smears described as **VS**
Vulvar swabs or smears described as **VU**
Cervical swabs or smears described as **CS**
Anal swabs or smears described as **AS**
Perianal swabs or smears described as PA
Penile swabs or smears described as PS
Underwear described as **UW**
Sperm fraction described as SF
Epithelial fraction described as EF
Substrate/swab remains fraction described as SR

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

- Case number followed by a dash.
- For vouchered items, add last three digits of the voucher followed by a dash.
- 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

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**

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.

Unidentified Human Remains: utilize "**PM**" and item number followed by a dash or item number depending on where the item is submitted from

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 worked on weekend overtime grant money
$ - for cases worked with grant-funded supplies

Case type indicator: the last notation is a pair of letters indicating the case type.

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	use for any case type not covered above

4.1.2 Examples

Example 1: case no: FB07-00022, voucher N123456, item #1: purple shirt, stain 1B; assault. Specimen ID number will be: *07-00022-456-PS1B-AS*

Example 2: case no: FB00-1257, post mortem kit item PM 2F, vaginal swab, sperm cell fraction, homicide. Specimen ID number will be: *00-1257-PM2F-VSSF-HO*

Example 3: case no: FB08-01034, voucher P124589, item #1B: glove, scrapings, burglary, examined on a weekend. Specimen ID number will be: *08-01034-589-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 1A1, sperm cell fraction, sexual assault. Specimen ID number will be: *CD01-0001-123-UW1A1SF-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 number will be: *04-1234-456-0110-S1-R-MP* and *04-1234-456-S2-R-MP*

There is a maximum limit of 24 characters for the specimen identification number in CODIS. The above specimen identification system should not be deviated from unless it is necessary to distinguish two samples, or under unusual case situations.

4.1.3 Suspect profiles entered into LDIS will have specimen ID's of the form XXX-10-S0000. This radically different format is intended to prevent the CODIS team and others from placing the suspect in the wrong index where it might be accidentally uploaded.

4.2 General Guidelines for Entering STR Profiles into CODIS (see also table at the end of this section)

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 LINKAGE and/or CODIS, as well as ensuring that appropriate exemplars and/or elimination samples have been requested at least once.

4.2.3 All 13 core STR loci 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 a. A minimum of 6 core loci are necessary for entry into CODIS in order to be uploaded to SDIS. A minimum of 10 core loci are necessary in order to be uploaded to NDIS.

b. For Missing Persons and Unidentified Human Remains cases, the following minimum core loci plus Amelogenin are necessary for upload into CODIS and Next Generation CODIS:

Unidentified Human Remains: 6 for SDIS, 8 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 DNA Profile Evaluation Form 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 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 4.3.6b. This convention may not be used for Missing Persons, Relatives of Missing Persons, and Unidentified Human Remains cases. This convention may not be used for suspect samples.

4.2.7 Forensic mixture DNA profiles shall have up to 4 alleles at a maximum of 4 core loci (the "4 x 4 rule"). Any of the remaining core loci shall have no more than 2 alleles at each locus. NOTE: this means that a 2-allele mixture identified by peak imbalance *does not* count against the rule and is not considered a mixture by the CODIS software. Non-core loci (e.g. Powerplex Pentas or Identifiler D2S1338 and D19S433) *do* count for this rule.
This convention may not be used for Missing Persons, Relatives of Missing Persons, and Unidentified Human Remains cases.

4.2.8 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*.

4.2.9 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.

4.2.9.1 When a profile is removed from CODIS for any reason, a statement in the report must indicate that the profile was previously searched but has been removed. Depending on the timing of the removal, the statement may be in the initial report or in an additional report.

4.2.10 Currently, profiles developed using Low Copy Number amplification techniques are not eligible for entry into NDIS. They can, however, be uploaded to NY-SDIS for searching, via the Low Copy Number Index. Samples in this SDIS Index are unmarked for any further upload (i.e. to NDIS).

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

4.3.2 A minimum of six fully-deduced loci must be present in a mixture sample for the mixture profile to be eligible for entry into NDIS. As many loci and alleles as possible should be included in the profile submitted to the database.

4.3.3 When a locus can be only partially deduced, use of the obligate allele designator, a "+" aids in stringency searches by preventing some of the spurious moderate matches possible at mixed loci.

4.3.4 A locus may be designated inconclusive ("INC") on the DNA Profile Evaluation form at the discretion of the interpreting analyst and their supervisor if an ambiguity exists at that locus (see section for Type II mixtures below). This locus, however, should still be used in the confirmation process once a candidate match is made.

4.3.5 **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 LINKAGE and LDIS.

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 LINKAGE and LDIS.

4.3.6 **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 alleles at all deduced loci. Any loci that cannot be deduced can be entered as a mixture with the obligate allele indicated on the DNA Profile Evaluation Form with a "+". Because of possible allele sharing, all alleles at these loci must be listed on the DNA Profile Evaluation Form (even if you know they belong to the victim).

The mixture loci cannot be entered into LINKAGE but will be entered into LDIS. 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 expected to be seen in 1 in more than a trillion people.

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 LCN 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 9 loci to meet the minimum amount (10 loci) needed in order to be searched at NDIS instead of being stopped at SDIS. Certain criteria must be met and documented for the CODIS group in order to justify using this method:

- Maximum 2 loci enhanced by this method.
- A statistical significance of the profile (or deduced loci) being approximately 1 in greater than 500,000,000. A copy of the population statistics printout must be provided to the CODIS group with a DNA profile of this type.
- This is the one and only instance on a DNA Profile Evaluation Form when a single allele is entered in the box for that locus. The "+" must also be present.
- The interpreting analyst and/or supervisor submitting such a profile may be called upon to evaluate all candidate matches found when the profile is searched.

NOTE: Since DNA profiles developed using Low Copy Number techniques are not eligible for entry into NDIS, and are searched only at LDIS and SDIS, as indicated by the first criterion listed above, can be waived.

4.4 Entering STR Profiles into LINKAGE

4.4.1 DNA profiles will be entered into LINKAGE by Criminalist IIIs, Criminalist IVs, or management only. DNA profiles may be entered into LINKAGE without technical review; however, at the time the case file receives technical review the previously entered DNA profiles must be checked for eligibility and accuracy.

4.4.2 LINKAGE will be maintained separately from the CODIS software in the LINKAGE database on the Forensic Biology network.

4.4.3 LINKAGE contains STR loci from STR systems on- (or previously on-) line in the Forensic Biology laboratory. LINKAGE does requires a minimum number of 6 loci to be entered, but requires non-mixture (or fully-deduced) loci only be entered.

4.4.4 Profiles matching the victim or elimination samples (for example, a family member or a consensual sex partner) unambiguously will not be entered into LINKAGE. 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*.

NOTE: DNA profiles are eligible for LINKAGE and/or LDIS only if a crime has been committed. If a case has been deemed to be unfounded by the NYPD, no DNA profile generated in that case is eligible for entry.

4.4.5 Local suspect profiles will be entered into LINKAGE and/or LDIS (Suspect, Known Index), unless:

4.4.5.1 A properly executed court order dictates otherwise concerning a specific sample. When any court order or similar paperwork is received, the OCME Legal Department must be consulted and provided a copy of the paperwork.

4.4.5.2 The exemplar was submitted subsequent to a partial match notification and does not match the case for which it was submitted.

4.4.6 Non-victim DNA profiles derived from evidence that are not eligible for CODIS entry will be entered into LINKAGE (for example, a profile obtained from the clothing of a suspect).

4.5 Entering STR Profiles into LDIS

4.5.1 CODIS eligible profiles will be entered into LDIS by CODIS software-trained staff only. The profiles entered into LDIS must fall into one of the following CODIS categories: Forensic Unknown; Forensic Mixture; Required Alleles; Low Copy Number; Suspect, Known; Missing Persons Index; the Relatives of Missing Persons Index or the Unidentified Human (Remains) Index) or Other (see section 1.0 - CODIS Terms and Abbreviations for definitions; for procedural guidelines on how to enter a profile into LDIS, see the *FBI CODIS Training Manual*). For a list of NDIS-approved STR PCR kits, consult the current version of *NDIS Procedures*.

4.5.2 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.*

4.5.3 Profiles that are clearly unrelated to a case or crime will not be entered into CODIS. For example, a semen 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 appropriate Assistant Director and the CODIS Program Manager. The determination can be aided using the CODIS *Guide to Determining What is Allowable for Entry into the Forensic Index at NDIS*.

4.5.4 Local suspect profiles reside in the LINKAGE system and/or LDIS. ***They are not eligible for upload to higher levels of CODIS.***

4.5.5 Entry of a profile into LDIS will be documented on the DNA Profile Evaluation Form. A copy of the DNA Profile Evaluation Form will be put in the file and the original will be filed in binders in the CODIS area.

4.5.6 Upload of a profile to SDIS will be documented by including a printout of the CODIS Specimen Detail Report in the case file. While secondary and later profiles in a pattern are not uploaded to SDIS, the Specimen Detail Report should still be generated, as it indicates the specimen's entry into the Pattern/Other index at LDIS.

4.5.7 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 can be found on the CODIS website.

4.5.8 Off ladder alleles should be entered as determined by the analysis software (e.g. an allele called as 9.1 should be entered as 9.1, not 9.x).

4.5.9 If a discrepancy exists on a DNA Profile Evaluation Form (for example, writing is not legible, reviewer's initials are missing, the specimen ID appears incorrect or is too long) the Interpreting Analyst (IA) or the reviewing Criminalist IV or Assistant Director for that sheet must resolve the discrepancy **before** the data from that sheet is entered. Specimen ID problems may be corrected by a member of the CODIS support staff. Interpretation issues should be discussed with the appropriate Assistant Director.

4.6 Modifying or Deleting an STR Profile from CODIS

4.6.1 Modification of data already entered into CODIS may be due to several reasons:

- Additional testing has been completed on the sample.
- An interpretation error was discovered regarding the profile.
- The profile could be improved by the addition of the obligate allele designator "+".

Once it has been determined that a profile must be modified in CODIS, a Profile Modification form (see Appendix 9.2) 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 and a copy will be placed in the case file.

4.6.2 Any modification to a DNA profile previously uploaded to SDIS will be documented in the profile modification log (see Appendix 9.3).

4.6.3 Reasons for administrative removal/expungement might include:

- A profile entered is later determined to be an elimination sample.
- Documentation is provided for legal expungement.
- 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.
- Profiles from missing persons and/or relatives of missing persons are removed once a person is identified. Profiles from unidentified human remains will be removed only if the body recovered is intact.

Once it has been determined that a profile must be deleted from CODIS, a CODIS deletion form (see Appendix 9.4) must be filled out and submitted to the CODIS staff for processing. Unless there are time restraints surrounding the deletion [(for example, in response to a court order requiring it before the next local upload; if so, an Expungement Request letter will be sent to the SDIS custodian (see Appendix 9.5)], the deletion will be processed with the next upload to SDIS.

The original form will be maintained in the Case Deletion/Expungement form binder and a copy will be placed in the case file. The deletion will also be recorded in the Upload Deletion/Expungement log (see Appendix 9.6) 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.

4.7 Routine Searches of LINKAGE and LDIS

4.7.1 Interpreting analysts and their supervisors will routinely compare appropriate preliminary DNA profiles to those in LINKAGE and LDIS.

4.7.2 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.

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

4.7.4 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").

4.7.5 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 matching files to the IA and supervisor who submitted the specimen, and delegate the match notifications to them.

4.8 Uploading Profiles to SDIS/NDIS and Search Policies

4.8.1 All appropriate LDIS profiles will be uploaded into SDIS by the CODIS staff. Currently New York State local DNA laboratories upload to SDIS biweekly, with the SDIS search performed shortly thereafter. Forensic STR Index, Unidentified Human (Remains) Index and Missing Person Index profiles containing 10 or more loci are searched at both high and moderate stringency. Profiles with 6-9 loci are searched at high stringency only unless placed in the "Required Alleles" index.

4.8.2 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.**

4.8.3 Only one (1) putative perpetrator profile per Forensic Biology DNA pattern will be uploaded to SDIS. Additional profiles from patterns will be placed in the Pattern/Other Index in LDIS, and will be unmarked for upload.

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

4.9 Other Searches

4.9.1 Only DNA profiles developed by the Department of Forensic Biology may be compared to and entered into LINKAGE. Requests to compare other DNA profiles to LINKAGE will not be approved and are not allowed.

4.9.2 Keyboard searches of LDIS, SDIS, and NDIS are only allowed of DNA profiles derived from evidence. Keyboard searches of DNA profiles from known individuals is not allowed.

4.9.3 Keyboard search requests of SDIS/NDIS are addressed to the Databank coordinator. This search is requested through the DCJS Databank coordinator and is executed at the discretion of the SDIS custodian.

Keyboard search requests of LDIS are addressed to the CODIS custodian, CODIS Program Manager, or the laboratory director.

4.9.4 There are assorted reasons a keyboard search would be requested by a laboratory. All requests must be accompanied by a Justification for Keyboard Search Request form (see Appendix 9.7).

<u>Reason #1</u>: The requesting laboratory wants to search a profile that does not meet the minimum loci requirements for SDIS or NDIS entry or would not be searched based upon SDIS or NDIS current search policy. Keyboard searches for this reason must be, accompanied with a documented scientific reason justifying the search (for example, apparent presence of mixtures, sample degradation or limited sample availability). Scientific justification must include but is not limited to a statistical significance of the profile (or deduced loci) being approximately 1 in greater than 500,000,000. A copy of the population statistics printout must be provided to the CODIS group with a justification of this type.

<u>Reason #2</u>: - The requesting agency wants to search a profile before the next search in a situation where a known convicted offender is a suspect in a particular case and there is an urgency for an expedited search. The initial request from a Bureau Chief from one of the District Attorney's Offices must be submitted in written form, **must be accompanied with a valid justification for the urgency,** and **it must be confirmed that the suspect in question is, in fact, in the databank. <u>This confirmation is the responsibility of the requesting agency.</u>** There must also be a documented conversation with an Assistant Director and appropriate case information. **Case information from the DAO must include:** the suspect's full name, NYSID number, social security #, and any known aliases.

The following reasons are considered valid urgency justifications by the Department of Forensic Biology to request a keyboard search to expedite a CODIS search at SDIS or NDIS:

- A suspect has been arrested for a particular case and will be released without the search. Additionally, there is no other evidence (eyewitness, fingerprints, etc.) to hold the suspect and attempts to obtain a DNA sample from the suspect have been exhausted.

- A strong investigative lead has developed a suspect in a particular case and the search will lead to an arrest. Additionally, there is no other evidence (eyewitness, prints, etc.) to arrest the suspect and attempts to obtain a DNA sample from the suspect have been exhausted.

<u>NOTE</u>: **Even if the DAO or NYPD can confirm a potential suspect has qualified for entry in the convicted offender databank this does not insure the sample has been collected, processed, or entered into the offender databank. Expedition of a convicted offender sample by DCJS does not have to be in response to a keyboard request. If the suspect is based on a strong investigative lead and the investigator wants to insure the corresponding convicted offender sample is in the offender databank before the next routine search they should be referred to DCJS. Investigators should always be advised to attempt to obtain a DNA sample from the suspect and submit it directly to Forensic Biology.**

Reason #3: - The requesting agency and/or the Department of Forensic Biology wants to search a profile before the next search in a situation where there is an urgency for an expedited search to attempt to identify an offender in a serious or serial crime.

Reason #4: The requesting laboratory is not CODIS ready. This type of search method is performed for criminal justice agencies that do not have access to CODIS. **All requests for keyboard searches from agencies that do not have CODIS should be referred to the NYS DCJS Databank coordinator.** This will enable the requesting agency to benefit from a statewide search and avoid duplicate local searches.

4.9.5 Both the CODIS Custodian/Supervisor and the CODIS Program Manager must approve keyboard search requests. Disagreements between the CODIS Program Manager and the analyst, supervisor, or manager requesting a keyboard search will be resolved by the laboratory director.

Once a keyboard search request has been approved, the interpreting analyst will fill out a Forensic Biology Keyboard Search Request form (see Appendix 9.8) and forward it to the CODIS staff for processing. All keyboard search requests will be processed by the CODIS staff. If the keyboard search request is for SDIS, the CODIS supervisor will discuss the request and case information with the DCJS Databank coordinator via telephone and fax the request form accordingly. The original request form and search results will be kept in the case folder. Keyboard search requests from outside laboratories are kept in the Keyboard Search requests binder. **The interpreting analyst requesting the keyboard search will be responsible for evaluating all candidate match results from the search *within 15 days* of receiving the results from the CODIS staff.**

NOTE: Prior to faxing a Keyboard Search Request form to SDIS, the CODIS staff will first perform an autosearch to identify any local candidate matches.

4.9.6 A forensic profile may be searched at a non-CODIS databank (for example, via Interpol). See the NDIS Procedures for further information.

4.9.7 A non-US 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.

Table – DNA Profile Evaluation Form entries for STR profiles derived from mixed samples

STR result	Interpretation	DNA Profile Evaluation Form	Will match
7, 8, 9	deduced contributor is 9, 9	9, 9	9, 9 (high stringency)
7, 8, 9	deduced contributor is 8, 9	8, 9	8, 9 (high stringency)
7, 8, 9	deduced contributor is 9, Z (where Z is either a 7 or 8 or 9)	7, 8, 9+	7, 9 or 8, 9 or 9, 9 (moderate stringency)
7, 8, 9**	deduced contributor is 9, Z (other non-called allele, possible drop-out, or LCN possible false homozygote)	INC or 9+	n/a 9 plus any other allele (moderate stringency)

5.1 General principles

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.

Local exact matches between cases may result in the creation (or extension) of a DNA pattern. To consolidate the handling of related pattern cases, and to streamline any subsequent court testimony, a single analyst (wherever possible) should be assigned all cases in a pattern. Therefore, 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 for additional information.

Partial matches are inadvertent “indirect matches” that suggest that the source of an evidentiary profile is potentially:

- A relative of a suspect (suspect file)
- A relative of another evidentiary profile (within a case or between two cases)
- A relative of some other comparison sample (victim or elimination sample)
- A relative of an offender (state or national)

This is determined by comparing the number of shared alleles and/or loci, then calculating the full sibling likelihood ratios and/or the parent-offspring likelihood ratios using the CODIS Popstats application (see specific procedures below). The use of partial matches at the state level has been approved by the New York State Commission on Forensic Science. 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.

Matches at the local level may occur at any time. Matches at the state level follow a two-week cycle set by the state. Matches at the national level follow a one-week cycle.

For Missing and Unidentified Persons cases, discovering and confirming “exact matches” and “associations” are also among the highest priority tasks done in the Department of Forensic Biology.

Associations are “indirect matches” that suggest that the reference profiles (i.e. profiles from relatives of Missing Persons in a pedigree tree) are potentially related to profiles from a Missing Person or Unidentified Human Remains. These associations are ranked in NG CODIS according to a joint pedigree likelihood ratio.

Matches in NGCODIS may occur at any time at the local level. At the state and national level, matches follow a one month cycle set by NY State and/or the FBI. Additional searches such as those with mitochondrial DNA only are done as scheduled by NY State and the FBI.

5.2 DNA HITS application

The majority of DNA exact match and partial match notifications are made using the web-based DNA HITS application. This application allows for quick e-mail 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, make notifications using a Notification Letter; follow up with DNA HITS notification when it becomes available.

DNA HITS is not used for Missing and Unidentified Persons Cases. A notification letter is sent via email to notify all involved parties of the match. For matches with unidentified remains from NYC OCME, the assigned Medical Examiner, Identification Unit, and NYPD Missing Persons are always notified. Matches involving outside jurisdictions will be sent to that jurisdiction’s designee(s).

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 ADA’s directly* - they will be notified by their superiors.

Members of lab management have privileges in DNA HITS to add or delete authorized users. Case analysts have varying levels of privileges within the program. All interpreting analysts plus certain clerical and CODIS staff members have login privileges and can enter match information. Supervisors, management and certain CODIS staff members have approval privileges for matches. The program will not make a notification until it has been approved.

5.3 Method of notification

The existence of an exact match or partial match is disseminated via the Department of Forensic Biology report, via DNA HITS, or both. The method depends on the type of the match ("cold" vs. "warm"), the level (local, state, national), or the type of comparison (exact vs. partial). "Cold hit" means no one thought the cases (or suspect) were linked previously. "Warm hits" are the opposite: the cases were previously thought to have been linked, and DNA is simply confirming this.

In general, match notifications made via DNA HITS are applicable only to cases that have a clean, informative forensic autosomal DNA profile (single-source or deduced) attributable to a putative perpetrator. In addition, partial match notifications are limited to such profiles with ≥10 CODIS core loci with no Z's, INC's, or other indications of a mixture.

Associations solely to non-deconvoluted mixtures or solely to Y STR results are described in the reports, not via DNA HITS.

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

<u>Local matches:</u>
Cold hits between cases
Partial matches between cases
Cold hits between a case and a suspect (exemplar or pseudo-exemplar)
Warm hits between a case and a suspect (exemplar or pseudo-exemplar)
Partial matches between a case and a named suspect or arrestee (exemplar or pseudo-exemplar)

<u>State or national matches:</u>
Matches between a case and an offender
Partial matches between a case and an offender
Matches between a case and a case in another laboratory

Notification via DNA HITS is **not** necessary for the following types of matches:

Warm hits between cases
Partial matches within a case

The report (evidence report or suspect report) will contain information on all local exact matches and/or partial matches.

DNA HITS is not used for Missing and Unidentified Persons cases. Match notifications are made via a Forensic Biology Report and Notification Letter.

5.4 Verifying and reporting exact matches

5.4.1 Local exact matches discovered via LINKAGE or LDIS

5.4.1.1 Confirm the exact match

In the event an analyst suspects there is a cold hit between his/her “new” case and a previous case or pattern, or between his/her “new” case and a suspect file, his/her supervisor should be notified **immediately**.

Expedite additional testing (including exemplars if needed) 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.

5.4.1.2 Review the matching cases

The analyst of the “new” case has to request the “previous” case(s). For a case-to-case match, compare the information available in the files: precinct, location of occurrence, description of assailant, details of the assault, etc. If any 61 forms are missing, have a supervisor arrange to get a copy. (This step is not required for NYPD project cases. If any of the information in the 61 forms seems inconsistent, discuss with your supervisor.)

For case-to-case matches, 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 and Assistant Director immediately.

For case-to-case matches between similar case types (ex. Property Crime to Property Crime) or disparate case types (Homicide to Property Crime), it is a possibility that a member of law enforcement is the source of the DNA. Therefore, the following should also be determined based on paperwork in the file:

- Was the evidence in both cases collected by the same Crime Scene Unit or Evidence Collection Team member?
- Was the evidence in both cases processed by the same NYPD laboratory Criminalist?

If so, see your supervisor and Assistant Director immediately.

5.4.1.3 Determine if the "new" case should be transferred

Use common sense when deciding on the transfer of a "new" case. Consider the nature of the crimes; the nature of the evidence items within the cases; the time frame of the crimes; and whether any appear to be previously solved via arrest, typing of a suspect, or an offender database match. Transfers should only take place when a logical pattern is created or added to.

Examples of situations where transfer makes sense might include:

- A 2012 sexual assault case matching a 2010 sexual assault case.
- A 2012 burglary case matching a 2011 robbery case.
- A 2012 robbery matching a 2011 sexual assault (where case facts are similar)

If there is no logical pattern or relationship between the cases, no transfer of the "new" case is necessary. Examples might include:

- A 2012 burglary case matching a solved 1996 homicide case.
- A 2012 sexual assault case matching a 2011 auto theft case.
- A 2012 robbery matching a 2011 sexual assault (where case facts are different)

A transfer is NOT necessary if a "new" case is solely matching a previous suspect file. The analyst of the "new" case retains that case and will have the previous suspect file transferred to him/her. The analyst of the "new" case is responsible for making the DNA HITS notification of the case-to-suspect match and for reporting of the newly discovered match in a suspect report.

5.4.1.4 Transfer the "new" case

- Transfer the newly linked case to the analyst for the previous case(s).
- Have a supervisor update records to reflect the new case assignment.
- There is no requirement to complete testing in the entire case, start or complete a draft report, prepare tables, or prepare DNA Profile Evaluation Form. However, such things may be done as a courtesy.

5.4.1.5 Make the match notification(s)

- The analyst who owns the case is the one responsible for making the match notification.

Enter the match(es) into DNA HITS using the procedure in section 5.6.

5.4.2 Verifying and reporting SDIS exact matches

With DNA matches identified at SDIS, 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 sample and certain identity searches performed and scheduled by NYS.

Responses to all candidate matches must be immediate. The final disposition of the candidate match to the SDIS custodian must be reported no later than 30 business days after receiving the match report.

5.4.2.1 General Process

The CODIS staff will print out the Candidate Match Detail Reports from the CODIS system along with a Match Inventory list (a summary list of all the cases involved in the candidate matches) and retrieve the corresponding files.

Each candidate match report and corresponding file must be reviewed to confirm whether or not the two profiles indeed match. The analyst reviewing the file must fill out a Candidate Match Confirmation Checklist if the match is found to be real.

If any modifications to the DNA profile are needed, a Profile Modification Form must be filled out by the Interpreting Analyst or the analyst reviewing the data (see section 4.6), and submitted to the CODIS group. It is not necessary to wait for the profile to be modified to continue in the confirmation process.

5.4.2.2Verifying and reporting SDIS offender exact matches

If the profiles are an exact match, complete a NYS DNA Databank Candidate Match Confirmation Form. This form communicates to DCJS and the Databank coordinator the case information, and that the candidate match is, in fact, a true match. Therefore, **one** NYS DNA Databank Candidate Match Confirmation Form for **every** confirmed candidate match listed on the Match Inventory must be completed. The NYS DNA Databank Candidate Match Confirmation Form is then transmitted to DCJS by fax or other electronic means.

Upon receipt of the NYS DNA Databank Candidate Match Confirmation Forms from our laboratory, and upon receipt of confirmation of the offender sample from the NYS DNA Databank coordinator, DCJS will release the offender's name, via fax followed by USPS, in the form of a DCJS Match Letter (see the current version of the *New York State COmbined DNA Index System Procedures)*. This letter will contain the name of the offender, any aliases, the NYSID number and offender's current location.

Enter the match(es) into DNA HITS using the procedure in section 5.6.

If the confirmed match has linked an offender to an unsolved case, the investigating agency must obtain an exemplar from the offender and submit to the laboratory for retesting prior to proceeding to trial. This requirement is located on the DCJS Match Letter that is available to the District Attorneys' offices upon request.

The DCJS Match Letter should be used by the DAO to obtain the court order authorizing the collection of the exemplar. The Department of Forensic Biology will perform testing on the exemplar to replicate the DNA match of the offender to the forensic sample(s) and to testify in court to the match. Questions from the DAO regarding offender information, offender blood draws, etc. should be directed to DCJS. Analysis of the exemplar by Forensic Biology is generally not necessary for grand jury proceedings. This analysis, however, is necessary before trial.

5.4.2.3 Verifying and reporting SDIS forensic exact matches

After the data is reviewed, the other laboratory involved in the match must then be notified via telephone, fax or email and the match verified. Both laboratory's case numbers and ORI numbers are on the Match Detail Report and on the Match Inventory list. The contact information for all CODIS laboratories can be found on the CJIS-WAN. Standard case contact protocol should be followed to document any correspondence or conversations.

If it is determined the candidate match is a non-match, the process stops here. All case contacts should be documented on the checklist accordingly.

If it is verified to be a true match, information regarding the cases must be exchanged. The CODIS DNA Match Data Request and Response Form is transmitted to the other laboratory by fax or other electronic means. This form facilitates the exchange of information. Information on this form, if available, should include:

- Contact information for the submitting police agency.
- Contact information for the laboratory.
- Laboratory and police identification numbers (Forensic Biology and complaint numbers).
- Whether the case is solved (i.e. by DNA).
- Suspect information (for example, name, NYSID number, has he/she been tested at our lab, etc.).

- General case information (for example, date of occurrence, type of crime, etc.)
- If the case with the match at SDIS is one of a local pattern, information regarding both/all should be provided to the other laboratory.

Upon receipt of the response from the other laboratory, the match is confirmed. This form documents that the candidate match between the two laboratories was acknowledged, each laboratory has finished their review process, both laboratories are confirming the match and that case information has been exchanged.

Enter the match(es) into DNA HITS using the procedure in section 5.6

5.4.3 Verifying and reporting NDIS exact matches

With DNA matches identified at NDIS, both laboratories involved in the match have confirmation responsibilities. All NDIS matches will be resolved by the CODIS staff.

Responses to all candidate matches must be timely. The final disposition of the candidate match to the NDIS custodian must be reported no later than 30 business days after receiving the match report.

5.4.3.1 General Process

The CODIS staff will print out the Candidate Match Detail Reports from the CODIS system along with a Match Inventory list (a summary list of all the cases involved in the candidate matches) and retrieve the corresponding files.

Each candidate match report and corresponding file must be reviewed to confirm whether or not the two profiles indeed match. The analyst reviewing the file must fill out a Candidate Match Confirmation Checklist.

If any modifications to the DNA profile are needed, a Profile Modification Form must be filled out by the Interpreting Analyst or the analyst reviewing the data (see section 4.6), and submitted to the CODIS group. It is not necessary to wait for the profile to be modified to continue in the confirmation process.

If a profile has a national offender candidate match and a state offender candidate match at or near the same time, allow the state confirmation process to proceed first. If a profile has two (or more) national offender candidate matches at or near the same time, select one of the candidate matches to proceed first (see the CODIS supervisor for guidance on selection). Once one of the candidate matches has been verified and the name of the offender obtained, process the remaining candidate matches as conviction matches.

5.4.3.2 Verifying and reporting NDIS offender exact matches

After the data is reviewed, the other laboratory involved in the match must then be notified via telephone, fax or email and the match verified. Both laboratory's case numbers and ORI numbers are on the Match Inventory list. The contact information for all CODIS laboratories can be found on the CJIS-WAN. Standard case contact protocol should be followed to document any correspondence or conversations.

If it is determined the candidate match is a non-match, the process stops here. All case contacts should be documented on the checklist accordingly.

If it is verified to be a true match, information regarding the cases must be exchanged. The CODIS DNA Match Data Request and Response Form is transmitted to the offender laboratory by fax or other electronic means. This form facilitates the exchange of information. Information on this form, if available, should include:

- Contact information for the submitting police agency.
- Contact information for the laboratory.
- Laboratory and police identification numbers (for example, case number, complaint number, etc.).
- Whether the case is solved (i.e. by DNA).
- Suspect information (for example, name, NYSID number, has he/she been tested at our lab, etc.).
- General case information (for example, date of occurrence, type of crime, etc.).
- If the case with the match at NDIS is one of a local pattern, information regarding both/all should be provided to the other laboratory.
- When available, include any known aliases of the offender/suspect if the case is solved, because the offender/suspect may be in the other database under a different name.

Upon receipt of the CODIS DNA Match Data Request and Response Form from our laboratory, and upon the offender laboratory's confirmation of the offender sample, the match is confirmed. The offender laboratory will release the convicted offender's name, via fax, in the form of a match letter. This letter will contain the name of the offender, any aliases, the State ID #, current location, and usually their SS#.

Enter the match(es) into DNA HITS using the procedure in section 5.6

If the confirmed match has linked an offender to an unsolved case, the investigating agency must obtain an exemplar from the offender and submit to the laboratory for retesting prior to proceeding to trial. This requirement is located on the match letter that is forwarded to the District Attorney's office upon request. The match letter should be used by the DAO to obtain the court order authorizing the collection of the exemplar.

The Department of Forensic Biology will perform testing on the exemplar to replicate the DNA match of the offender to the forensic sample(s) and to testify in court to the match. Questions from the DAO regarding offender information, offender blood draws, etc. should be directed to the agency contact information given on the CODIS DNA Match Data Request and Response form. Analysis of the exemplar by the Department of Forensic Biology is generally not necessary for grand jury proceedings. This analysis, however, is necessary before trial.

5.4.3.3 Verifying and reporting NDIS forensic exact matches

The CODIS staff will print out the Candidate Match Reports from the CODIS system along with a Match Inventory list (a summary list of all the cases involved in the candidate matches) and retrieve the corresponding files.

Each candidate match report and corresponding file must be reviewed to confirm the profile data sent to NDIS is accurate. The analyst reviewing the file must fill out a Candidate Match Confirmation checklist.

If any modifications to the DNA profile are needed, a Profile Modification Form must be filled out by the analyst reviewing the data (see section 4.6), and submitted to the CODIS group. It is not necessary to wait for the profile to be modified to continue in the confirmation process.

After the data is reviewed, the other laboratory involved in the match must then be notified via telephone, fax or email and the match verified. Both laboratory’s case numbers and ORI numbers are on the Match Inventory list. The contact information for all CODIS laboratories can be found on the CJIS-WAN. Standard case contact protocol should be followed to document any correspondence or conversations.

If it is determined the candidate match is a non-match, the process stops here. All case contacts should be documented on the checklist accordingly.

If it is verified to be a true match, information regarding the cases must be exchanged. The CODIS DNA Match Data Request and Response Form is transmitted to the other laboratory by fax or other electronic means. This form facilitates the exchange of information. Information on this form, if available, should include:

- Contact information for the submitting police agency.
- Contact information for the laboratory.
- Laboratory and police identification numbers (for example, FB number, complaint number, etc.).
- Whether the case is solved (i.e. by DNA).
- Suspect information (for example, name, NYSID number, has he/she been tested at our laboratory, etc.).
- General case information (for example, date of occurrence, type of crime, etc.).
- If the case with the match at SDIS is one of a local pattern, information regarding both/all should be provided to the other laboratory.

Upon receipt of the response from the other laboratory, the match is confirmed. This form documents that the candidate match between the two laboratories was acknowledged, each laboratory has finished their review process, both laboratories are confirming the match and that case information has been exchanged.

Enter the match(es) into DNA HITS using the procedure in section 5.6

5.5 Evaluating, verifying, and reporting partial matches

5.5.1 General guidelines

Partial match procedures are applicable only to cases that have a clean, informative forensic autosomal DNA profile (single-source or deduced) attributable to a putative perpetrator. Such profiles must have $\geq$10 CODIS core loci, with no Z's, INC's, or other indications of a mixture.

Partial matches will be evaluated by a combination of observing whether there is sharing at each locus (indicating a potential parent-offspring relationship) and/or counting of shared alleles across all loci (indicating a potential full-sibling relationship), followed by a statistical calculation (likelihood ratio). Thresholds for allele sharing and the likelihood ratio have been established and are described on the Partial Match Evaluation Form.

At the local level, only partial matches between evidence samples (within a case or between cases) or partial matches between evidence samples and a named suspect or arrestee for that 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.*

At the state and national level, only partial matches to offenders will be evaluated.

Pull the previous case(s), if applicable.

5.5.2 Local partial matches

Partial matches may exist within a case, between two cases, or between a case and a suspect file.

5.5.2.1 Partial matches within a case

All eligible DNA profiles within a case should be reviewed for potential partial matches. For example, compare a victim or elimination sample to Male Donor A or compare Male Donor A, B, and C to each other.

In the event an analyst believes there is an eligible partial match, the first step is to evaluate the profiles. Using the Partial Match Evaluation Form and following the local flow chart below, determine if the two profiles meet laboratory requirements. If so, expedite any additional testing needed to satisfy the concordance and duplication policies.

If possible and appropriate, further testing using Y STRs should be done. If a partial match is still a possibility, continue the process.

The existence of a partial match within a case is disseminated via the report, using wording that describes that a similarity was noted, states the likelihood ratios for full siblings and/or parent-offspring, and requests additional exemplars.

5.5.2.2 Partial matches between two cases

In the event an analyst believes there is an eligible partial match between two cases (found in LINKAGE or an LDIS search), the first step is to evaluate the profiles. Using the Partial Match Evaluation Form and following the local flow chart below, determine if the two profiles meet laboratory requirements. If so, expedite any additional testing needed to satisfy the concordance and duplication policies.

If possible and appropriate, further testing using Y STRs should be done. If a partial match is still a possibility, continue the process.

The analyst and supervisor must then meet with the local CODIS administrator and/or CODIS manager to discuss the potential partial match. If appropriate, efforts will be made to determine the status of each case (solved vs. unsolved, arrests, etc.) or gain additional case information.

The existence of a partial match between cases is disseminated via DNA HITS. **Enter the match(es) into DNA HITS using the procedure in section 5.6**

5.5.2.3 Partial matches between a case and a suspect (exemplar or pseudo-exemplar)

Partial matches involving the DNA profile of a suspect is limited to the case for which the person is a named suspect or arrestee.

In the event an analyst believes there is an eligible partial match, the first step is to evaluate the profiles. Using the Partial Match Evaluation Form and following the local flow chart below, determine if the two profiles meet laboratory requirements. If so, expedite any additional testing needed to satisfy the concordance and duplication policies.

If possible and appropriate, further testing using Y STRs should be done. If a partial match is still a possibility, continue the process.

The existence of a partial match between a case and a suspect is disseminated via DNA HITS. **Enter the match(es) into DNA HITS using the procedure in section 5.6**

5.5.3 Evaluating, verifying, and reporting state offender partial matches

If a candidate match to an offender is NOT an exact match, the next step is to evaluate it as a potential “partial match”. Partial matches are inadvertent “indirect matches” that suggest that the source of an evidentiary profile is potentially a relative of an offender.

This is determined by comparing the number of shared alleles and/or loci, then calculating the full sibling likelihood ratios and/or the parent-offspring likelihood ratios using the CODIS Popstats application. Using the Partial Match Evaluation Form and following the SDIS flow chart, determine if the two profiles meet laboratory requirements.

If not, attach the Partial Match Evaluation Form to the Candidate Match Detail Report and note “no match”. The information is added to the case record. The CODIS groups will disposition the candidate match in the CODIS system as “No Match” and send NYS DCJS that information.

If the profiles meet the laboratory requirements for a partial match, then do the following:

Confirm that the profile has been searched in LDIS (see the CODIS group)
Using the Partial Match Inquiry Worksheet, contact the NYPD and the appropriate District Attorney’s office(s)

In order for the partial match process to continue, certain requirements have been set by the state. The NYPD and District Attorney’s office(s) are asked:

- Are they committed to pursuing further investigation?
- Will they provide follow-up information?

Once the completed worksheet is returned from both the NYPD and District Attorney’s office(s), and both agree to pursue the case, continue the process. Complete the DCJS Partial Match Evaluation Request and the CODIS group will transmit it to DCJS by fax or other electronic means.

Upon receipt of the DCJS Partial Match Evaluation Request from our laboratory, DCJS will notify the NYS DNA Databank that a confirmation of an offender DNA profile is being requested based on an “indirect” CODIS match.

After the offender DNA profile has been confirmed, a NYS CODIS Administrator or Supervisor will perform their partial match evaluation using specialized software. This software will calculate the Expected Kinship Ratio (EKR) and Expected Match Ratio (EMR) for the full sibling and parent-offspring relationships. If the EKR and EMR meet the thresholds defined by the state policy, DCJS will release the offender information and EKR/EMR statistics to us.

Enter the match(es) into DNA HITS using the procedure in section 5.6. It is imperative to enter a partial match using “Forensic to Potential Relative (SDIS)” as the match type.

5.5.4 Evaluating, verifying, and reporting national offender partial matches

NDIS has instituted a policy covering partial matches at the national level.

If a candidate match to an offender is NOT an exact match, the next step is to evaluate it as a potential “partial match”. Partial matches are inadvertent “indirect matches” that suggest that the source of an evidentiary profile is potentially a relative of an offender

This is determined by comparing the number of shared alleles and/or loci, then calculating the full sibling likelihood ratios and/or the parent-offspring likelihood ratios using the CODIS Popstats application. Using the Partial Match Evaluation Form and following the NDIS flow chart, determine if the two profiles meet laboratory requirements.

If not, attach the Partial Match Evaluation Form to the Candidate Match Detail Report and note “no match”. The information is added to the case record. The CODIS Group will disposition the candidate match in the CODIS system as “No Match”.

If the profiles meet the laboratory requirements for a partial match, then do the following:

Complete the Request for Release of Offender’s Identifying Information letter. The local CODIS administrator and/or CODIS manager will review the form and forward to the FBI.

If the request is approved by the FBI, the FBI will notify the state with the offender information about our request. **The decision to release the name of the convicted offender is done according to applicable state law and policies.** The NDIS Custodian then either:

- Notifies us that the state determines that the information cannot be released, or
- Provides us with the identifying offender information.

If the information is released, **enter the match(es) into DNA HITS using the procedure in section 5.6. It is imperative to enter a partial match using "Forensic to Potential Relative (NDIS)" as the match type.**

5.6 Making notifications using DNA HITS

NOTE: If a new match (case-to-case, case-to-suspect, case-to-known suspect or arrestee, or case-to-offender) is identified to a pattern that pre-dated DNA HITS, the *previous matches* must be entered into DNA HITS *prior* to the new match. In the Notes section, make reference to the previous match letters, including match letter number as well as the date of the original notification.

Step 1: Using the internet, go to the DNA HITS program. Change the drop-down menu to "OCME", then login using your OCME user name and password.

Step 2: Click on "Create New Local Hit" tab in the upper right hand corner.

Step 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" to known suspects/arrestees, and for most partial matches.

Step 4: Enter the case numbers for the new match and click on "Search".

NOTE: For notifications on a new case in an existing pattern, the two cases entered here should be the new case and the **first case** of the pattern. The first case is generally the one whose DNA profile is represented in CODIS; see a supervisor or a member of the CODIS group if unsure which case is the first case.

Step 5: Using the drop-down menu, select the appropriate search type (LINKAGE or LDIS for local matches). If this is not done, all the information will be lost and will have to be reentered.

"Warm hits" between a case and a suspect are reported using the "Case to Known Suspect or Arrestee" function within DNA HITS.

If one of the cases was involved in a previous DNA HITS notification, information for that case will be populated automatically. If both cases are new to DNA HITS, all fields marked in yellow are required to be entered. In addition, when available, the date of occurrence, 61 number and the voucher number **must** be entered. The exceptions are FM 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).

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.

Step 6: For the 'Criminalist' section, if the analyst assigned (the IA for the cases) is not on the drop-down list, deselect 'Select' and manually type in the analyst's last and first names; use normal capitalization. If the analyst assigned to a case is no longer at the lab, list the Criminalist IV or Assistant Director who reviewed it, in that order of preference. Should neither of them be available, consult CODIS staff or a supervisor regarding analyst assignment.

Step 7: Click on "Get Approval". If any red error messages appear, fix the problem and click on "Get Approval" again. 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.

Step 8: Have the cases reviewed by a Criminalist IV and/or Assistant Director.

Step 9: Have a Criminalist IV or Assistant Director approve the match in DNA HITS. Once approved, the Criminalist IV or Assistant Director will receive a DNA HITS confirmatory email from DNAHITS@cityhall.org.

Step 10: Forward the email to the assigned Criminalist to notify them of the match.

Step 11: Print out the DNA HITS email confirmation and place in each file.

Step 12: Forward the DNA Profile Evaluation Form(s) to the CODIS group in-box.

5.7 Verifying and Reporting Missing and Unidentified Person Matches

General Search Guidelines:
There are varied searches done in CODIS 5.7.4 and Next Generation (NG) CODIS to accommodate Missing and Unidentified Person cases. “Exact matches” are the result of an identity search. An identity search is done amongst the following indices:
Unidentified Human Remains to Unidentified Human Remains
Unidentified Human Remains to Missing Persons

Profiles of Unidentified Human Remains and Missing Persons are also entered into CODIS 5.7.4 for the purposes of performing additional searches against Convicted Offenders and Forensic Unknowns. Searches are performed against the following indices:
Unidentified Human Remains to Convicted Offenders
Unidentified Human Remains to Forensic Unknowns
Missing Persons to Convicted Offenders
Missing Persons to Forensic Unknowns

Ranks or associations to relatives of Missing Persons in a pedigree tree are the result of a pedigree search. A pedigree search is done amongst the following:
Pedigree Tree to Unidentified Human Remains
Biological Mother, Father, and Child to Unidentified Human Remains

Refer to the NYS CODIS Procedures-Search Parameters and NDIS CODIS v 6.0 Missing Person DNA Searches (Operational Procedures) from the FBI for search parameters.

5.7.1 Exact Matches in Next Generation (NG) CODIS (CODIS 6.1)

Exact matches in NG CODIS occur between profiles from Unidentified Human Remains searched against profiles of Unidentified Human Remains and Missing Persons.

5.7.1.1 Local Level Exact Matches (LDIS):

Unidentified Human Remains to Unidentified Human Remains
Unidentified Human Remains to Missing Persons

1. Request and pull the case files.
2. Confirm that the profiles match by reviewing the data.
3. Compare the information available in the files. Some questions to consider are:
    a. When was the body recovered in relation to when the person was reported missing?
    b. Are physical descriptions such as age, race, stature, hair color, eye color, tattoos, scars, etc. indistinguishable?
    c. 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.

4. Determine if the samples were tested in concordance with the duplication guidelines.
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 and Assistant Director immediately.

6. Determine if additional technologies such as Y-STR's or mtDNA are needed to confirm or refute the match.

7. Transfer the newly linked case/or cases to the interpreting analyst from the previous case or to the analyst that has the lowest FB case number. Have your supervisor update records to reflect the new case assignment. (This step can be done after notifications, if desired.)

8. Once all is confirmed, notifications can be made via telephone and/or email.

9. An additional report is written linking the two cases together. Random match probability statistics are performed on the unidentified human remains and included in the report in accordance with Forensic Biology protocol.

10. A notification letter and a copy of the additional report are sent via email to notify all involved parties of the match. For matches with unidentified remains from NYC OCME, the assigned Medical Examiner, Identification Unit, and NYPD Missing Persons are always notified. Matches involving outside jurisdictions will be sent to that jurisdiction's designee(s). The notification letter may be sent by emailing a scanned .pdf copy of the original signed letter and/or facsimile.

5.7.1.2 State Level Exact Matches (SDIS)

Matches will not occur at the state level in NG CODIS since the New York State Police does not conduct searches within NG CODIS. NYC OCME is the only lab in New York State that currently has and utilizes NG CODIS. NYS has the NG CODIS server but it is only used by the State CODIS Administrator to upload the profiles our lab sends monthly to NDIS.

5.7.1.3 National Level Exact Matches (NDIS):

Unidentified Human Remains to Unidentified Human Remains
Unidentified Human Remains to Missing Persons

With DNA matches identified at NDIS, both laboratories involved in the match have confirmation responsibilities.

Responses to all candidate matches must be immediate. The final disposition of the candidate match to the NDIS custodian must be reported no later than 30 business days after receiving the match report.

1. The CODIS staff will print out the Candidate Match Detail Reports from the CODIS system along with a Match Inventory list (a summary list of all the cases involved in the candidate matches) and retrieve the corresponding files.

2. Each candidate match report and corresponding file must be reviewed to confirm whether or not the two profiles indeed match. The analyst reviewing the file must fill out a Candidate Match Confirmation Checklist.

3. If any modifications to the DNA profile are needed, a Profile Modification Form must be filled out by the Interpreting Analyst or the analyst reviewing the data (see section 4.6), and submitted to the CODIS group. It is not necessary to wait for the profile to be modified to continue the confirmation process.

4. Compare the information available in the files. Some questions to consider are:

    a. When was the body recovered in relation to when the person was reported missing?
    b. Are physical descriptions such as age, race, stature, hair color, eye color, tattoos, scars, etc. indistinguishable?
    c. 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.

5. Determine if the sample(s) were tested in concordance with the duplication policy.

6. 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 and Assistant Director immediately.

7. Determine if additional technologies such as Y-STR's or mtDNA are needed to confirm or refute the match.

8. Once all is confirmed, notifications can be made via telephone and/or email.

9. An additional report is written. Random match probability statistics are performed on the unidentified human remains or the missing person profile and included in the report in accordance with Forensic Biology protocol. If the remains are intact or living person is found, then the profile should be removed from CODIS and noted in the additional report. Refer to Section 4.6.

10. A notification letter and a copy of the report are sent via email to notify all involved parties of the match. For matches with unidentified remains from NYC OCME, the assigned Medical Examiner, Identification Unit, and NYPD Missing Persons are always notified. Matches involving outside jurisdictions will be sent to that jurisdiction's designee(s). The notification letter may be sent by emailing a scanned .pdf copy of the original signed letter and/or facsimile.

5.7.2 Exact Matches in CODIS 5.7.4

5.7.2.1 Unidentified Human Remains to SDIS offender exact matches

If the profiles are an exact match, complete a NYS DNA Databank Candidate Match Confirmation Form. This form communicates to DCJS and the Databank coordinator the case information, and that the candidate match is, in fact, a true match. Therefore, **one** NYS DNA Databank Candidate Match Confirmation Form for **every** confirmed candidate match listed on the Match Inventory must be completed. The NYS DNA Databank Candidate Match Confirmation Form is then transmitted to DCJS by fax or other electronic means.

Upon receipt of the NYS DNA Databank Candidate Match Confirmation Forms from our laboratory, and upon receipt of confirmation of the offender sample from the NYS DNA Databank coordinator, DCJS will release the offender's name, via fax followed by USPS, in the form of a DCJS Match Letter (see the current version of the *New York State COmbined DNA Index System Procedures*). This letter will contain the name of the offender, any aliases, the NYSID number and offender's current location.

1. Request and pull the case file.

2. Confirm that the profiles match by reviewing the data.

3. Determine if the sample was tested in concordance with the duplication guidelines.

4. Once all is confirmed, notifications can be made via telephone and/or email to the OCME Identification Unit and to the Medical Examiner.

5. An additional report is written. Random match probability statistics are performed on the unidentified human remains and included in the report in accordance with Forensic Biology protocol.

6. A notification letter and a copy of the additional report are sent via email to notify all involved parties of the match. For matches with unidentified remains from NYC OCME, the assigned Medical Examiner, Identification Unit, and NYPD Missing Persons are always notified. The notification letter may be sent by emailing a scanned .pdf copy of the original signed letter and/or facsimile.

5.7.2.2 Unidentified Human Remains to NDIS offender exact matches

After the data is reviewed, the other laboratory involved in the match must then be notified via telephone, fax or email and the match verified. Both laboratory's case numbers and ORI numbers are on the Match Inventory list. The contact information for all CODIS laboratories can be found on the CJIS-WAN. Standard case contact protocol should be followed to document any correspondence or conversations.

If it is determined the candidate match is a non-match, the process stops here. All case contacts should be documented on the checklist accordingly.

If it is verified to be a true match, information regarding the cases must be exchanged. The CODIS DNA Match Data Request and Response Form is transmitted to the offender laboratory by fax or other electronic means. This form facilitates the exchange of information. Information on this form, if available, should include:

- Contact information for the submitting police agency.
- Contact information for the laboratory.
- Laboratory and police identification numbers (for example, case number, complaint number, etc.).
- Whether the case is solved (i.e. by DNA).
- Suspect information (for example, name, NYSID number, has he/she been tested at our lab, etc.).
- General case information (for example, date of occurrence, type of crime, etc.).
- If the case with the match at NDIS is one of a local pattern, information regarding both/all should be provided to the other laboratory.
- When available, include any known aliases of the offender/suspect if the case is solved, because the offender/suspect may be in the other database under a different name.

Upon receipt of the CODIS DNA Match Data Request and Response Form from our laboratory, and upon the offender laboratory's confirmation of the offender sample, the match is confirmed. The offender laboratory will release the convicted offender's name, via fax, in the form of a match letter. This letter will contain the name of the offender, any aliases, the State ID #, current location, and usually their SS#.

1. Request and pull the case file.
2. Confirm that the profiles match by reviewing the data.
3. Determine if the sample was tested in concordance with the duplication guidelines.
4. Once all is confirmed, notifications can be made via telephone and/or email to the OCME Identification Unit and to the Medical Examiner.
5. An additional report is written. Random match probability statistics are performed on the unidentified human remains and included in the report in accordance with Forensic Biology protocol.
6. A notification letter and a copy of the additional report are sent via email to notify all involved parties of the match. For matches with unidentified remains from NYC OCME, the assigned Medical Examiner, Identification Unit, and NYPD Missing Persons are always notified. The notification letter may be sent by emailing a scanned .pdf copy of the original signed letter and/or facsimile.

5.7.3 Ranks in NG CODIS (CODIS 6.1)
Pedigree Tree to Unidentified Human Remains (UHR)
Pedigree Tree to Missing Person (MP)
Biological Father, Mother, Sibling (with additional technology) to UHR or MP

Profile(s) from a pedigree tree associated to unidentified human remains or a missing person are ranked according to a joint pedigree likelihood ratio (JPLR) in Rank Manager. Any JPLR above 1 will constitute a rank.

The CODIS staff will print out the Specimen Detail Reports for the associated ranks to the pedigree tree or single relative.

1. Fill out the Rank Manager Sample Inquiries Form.

2. Locate the files and determine if the JPLR constitutes a true association.

3. Some questions to help in the disposition:
   a. Does the gender of the Missing Person correlate to the UHR?
   b. When was the body recovered in relation to when the person was reported missing?

4. If further investigation is still needed, then review the STR data and perform kinship analysis.

5. If an additional technology such as mtDNA has been performed, utilize that in the assistance of the disposition of the case.

6. Determine if additional technologies such as YSTR's or mtDNA need to be performed.

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 (i.e. strengthening the likelihood ratio or assisting in confirming an association via a direct match with a reference sample from the missing person).

8. If the association does not pan out, note it as "No Match" and initial and date the Specimen Detail Report and make comments on the Rank Manager Sample Inquiries Form.

9. For true associations, notifications can be made via telephone and/or email.

10. An additional report is written. Kinship analysis is performed between the relatives of the Missing Person and the unidentified human remains or the missing person profile and included in the report in accordance with Forensic Biology protocol. The profiles of the relatives of the Missing Person must be removed from CODIS 6.1 and noted in the additional report. Refer to Section 4.6.

11. A notification letter and a copy of the report are sent via email to notify all involved parties of the match. For associations to unidentified remains from NYC OCME, the assigned Medical Examiner, Identification Unit, and NYPD Missing Persons are always notified. Associations involving outside jurisdictions will be sent to that jurisdiction's designee(s). The notification letter may be sent by emailing a scanned .pdf copy of the original signed letter and/or facsimile.

5.7.4 Low stringency searches in CODIS 5.7.4

NY State performs a low stringency search every quarter against the remaining Relatives of Missing Person samples in the state database against the Unidentified Human Remains index in 5.7.4.

For verifying and reporting these possible matches, follow the same steps above in 5.7.3.

5.8 Organization of CODIS Paperwork in Files

Left side of file: if all paperwork was properly completed and photocopied, the left side of the file should contain:

- Forensic Biology, Cellmark, Bode or Genescreen report
- DNA Profile Evaluation Form - copy
- Specimen Detail Report - printout from computer
- Candidate Match Detail Report - printout from computer
- Candidate Match Confirmation Checklist - original
- Candidate Match Confirmation Form - copy
- DCJS Match Letter – copy faxed by DCJS (or comparable form from another state)
- DNA HITS confirmation email – printout from email (CODIS staff does not need a copy

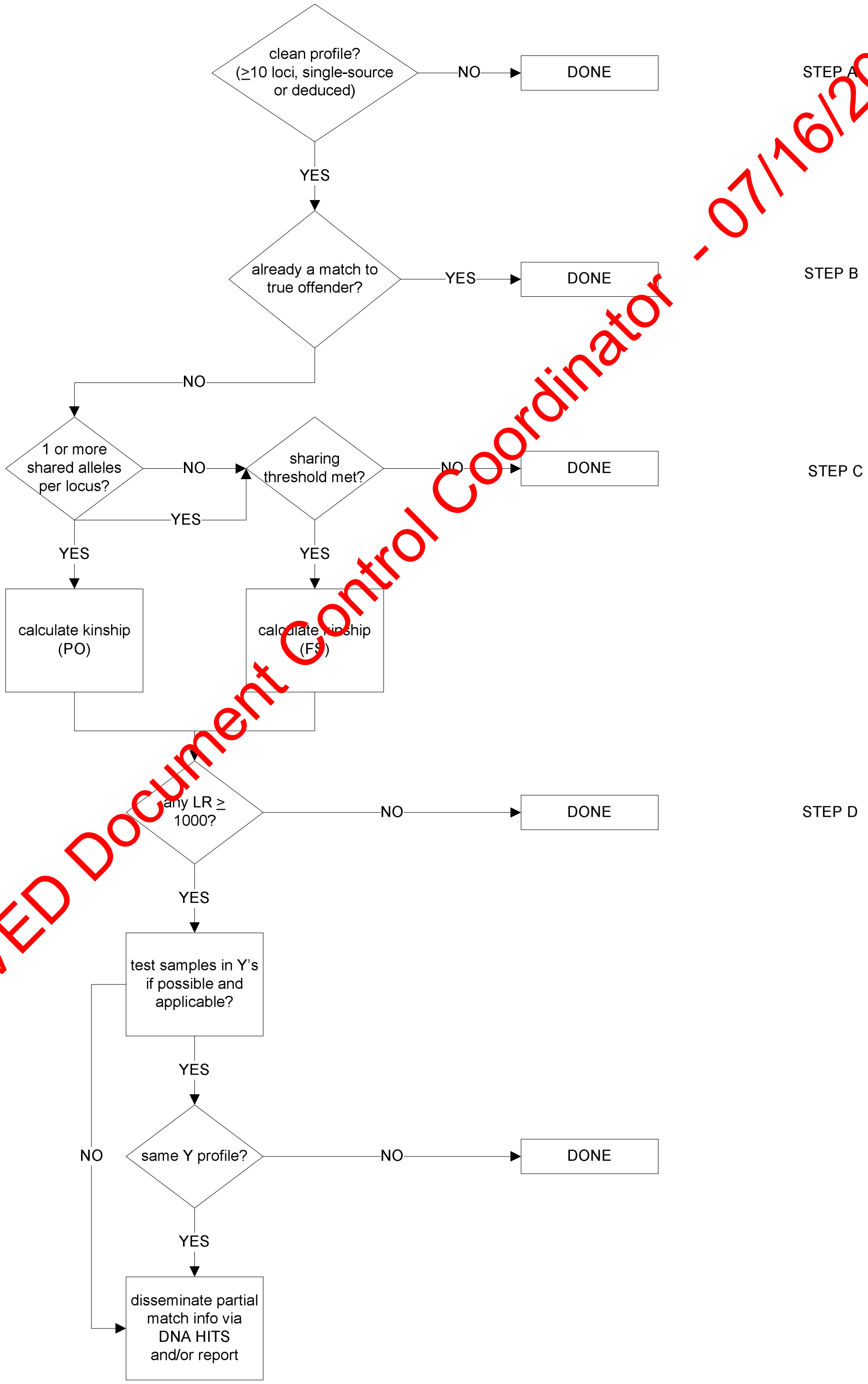
For Missing Persons cases, left side of file depending on the type of match may have some or all of the following:

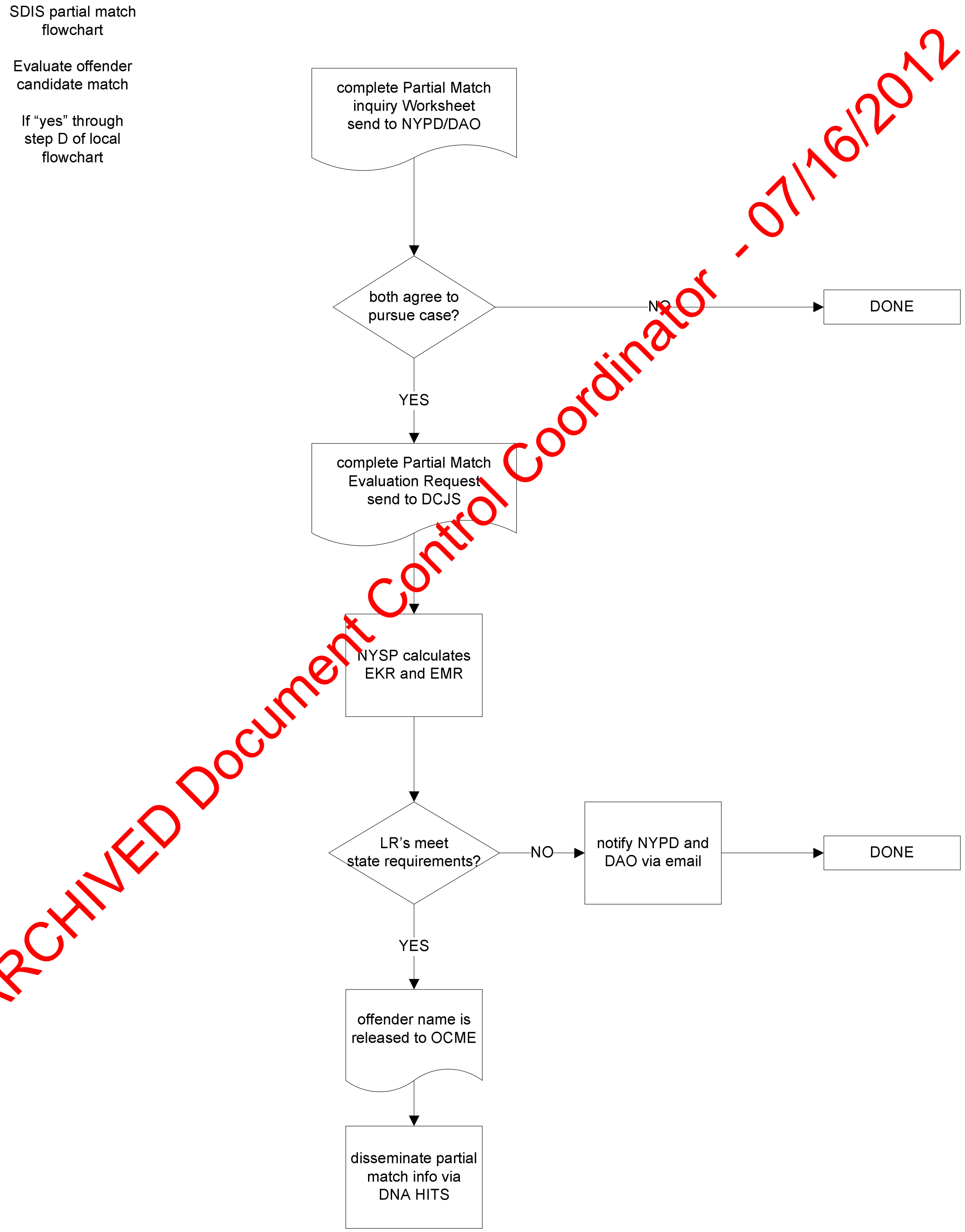
- Forensic Biology report(s)
- DNA Profile Evaluation Form-copy
- Specimen Detail Report - printout from computer
- Candidate Match Detail Report - printout from computer
- Candidate Match Confirmation Checklist – original
- Hit Notification Letter-original or copy, PDF of original saved in CODIS folder under "HITNOT' in "MISP"

Depending on the type of match and at what level it may have occurred, the following may also be on the left side of the file:

- Candidate Match Confirmation Form-copy
- DCJS Match Letter-faxed copy
- Supporting paperwork such as copies of dental records, anthropology reports and scene reports from within OCME or from the outside jurisdiction.

Local partial match flowchart

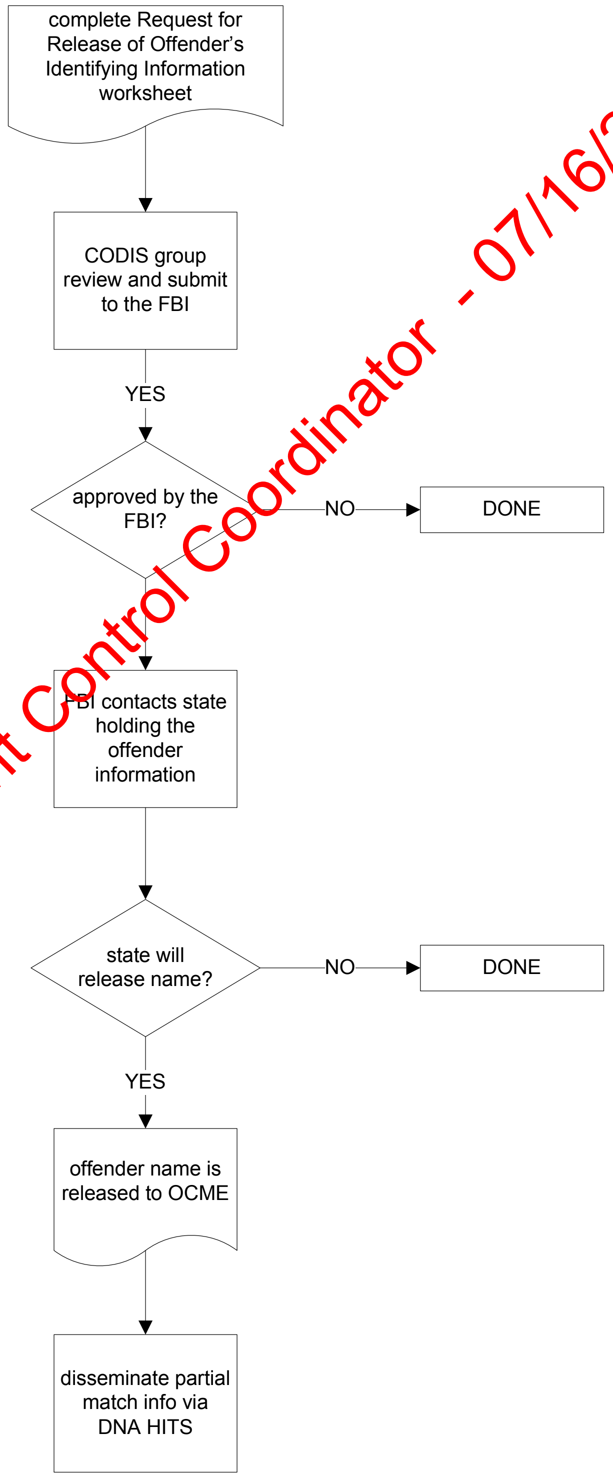



SDIS partial match flowchart
Evaluate offender candidate match
If "yes" through step D of local flowchart
complete Partial Match inquiry Worksheet send to NYPD/DAO
both agree to pursue case?
NO
DONE
YES
complete Partial Match Evaluation Request send to DCJS
NYSP calculates EKR and EMR
LR's meet state requirements?
NO
notify NYPD and DAO via email
DONE
YES
offender name is released to OCME
disseminate partial match info via DNA HITS

NDIS partial match
flowchart

Evaluate offender
candidate match

If “yes” through
step D of local
flowchart



5.1 General principles

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.

Local exact matches between cases may result in the creation (or extension) of a DNA pattern. To consolidate the handling of related pattern cases, and to streamline any subsequent court testimony, a single analyst (wherever possible) should be assigned all cases in a pattern. Therefore, 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 for additional information.

Partial matches are inadvertent “indirect matches” that suggest that the source of an evidentiary profile is potentially:

- A relative of a suspect (suspect file)
- A relative of another evidentiary profile (within a case or between two cases)
- A relative of some other comparison sample (victim or elimination sample)
- A relative of an offender (state or national)

This is determined by comparing the number of shared alleles and/or loci, then calculating the full sibling likelihood ratios and/or the parent-offspring likelihood ratios using the CODIS Popstats application (see specific procedures below). The use of partial matches at the state level has been approved by the New York State Commission on Forensic Science. 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.

Matches at the local level may occur at any time. Matches at the state level follow a two-week cycle set by the state. Matches at the national level follow a one-week cycle.

For Missing and Unidentified Persons cases, discovering and confirming “exact matches” and “associations” are also among the highest priority tasks done in the Department of Forensic Biology.

Associations are “indirect matches” that suggest that the reference profiles (i.e. profiles from relatives of Missing Persons in a pedigree tree) are potentially related to profiles from a Missing Person or Unidentified Human Remains. These associations are ranked in NG CODIS according to a joint pedigree likelihood ratio.

Matches in NGCODIS may occur at any time at the local level. At the state and national level, matches follow a one month cycle set by NY State and/or the FBI. Additional searches such as those with mitochondrial DNA only are done as scheduled by NY State and the FBI.

5.2 DNA HITS application

The majority of DNA exact match and partial match notifications are made using the web-based DNA HITS application. This application allows for quick e-mail 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, make notifications using a Notification Letter; follow up with DNA HITS notification when it becomes available.

DNA HITS is not used for Missing and Unidentified Persons Cases. A notification letter is sent via email to notify all involved parties of the match. For matches with unidentified remains from NYC OCME, the assigned Medical Examiner, Identification Unit, and NYPD Missing Persons are always notified. Matches involving outside jurisdictions will be sent to that jurisdiction’s designee(s).

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 ADA’s directly* - they will be notified by their superiors.

Members of lab management have privileges in DNA HITS to add or delete authorized users. Case analysts have varying levels of privileges within the program. All interpreting analysts plus certain clerical and CODIS staff members have login privileges and can enter match information. Supervisors, management and certain CODIS staff members have approval privileges for matches. The program will not make a notification until it has been approved.

5.3 Method of notification

The existence of an exact match or partial match is disseminated via the Department of Forensic Biology report, via DNA HITS, or both. The method depends on the type of the match ("cold" vs. "warm"), the level (local, state, national), or the type of comparison (exact vs. partial). "Cold hit" means no one thought the cases (or suspect) were linked previously. "Warm hits" are the opposite: the cases were previously thought to have been linked, and DNA is simply confirming this.

In general, match notifications made via DNA HITS are applicable only to cases that have a clean, informative forensic autosomal DNA profile (single-source or deduced) attributable to a putative perpetrator. In addition, partial match notifications are limited to such profiles with ≥10 CODIS core loci with no Z's, INC's, or other indications of a mixture.

Associations solely to non-deconvoluted mixtures or solely to Y STR results are described in the reports, not via DNA HITS.

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

Local matches:
Cold hits between cases
Partial matches between cases
Cold hits between a case and a suspect (exemplar or pseudo-exemplar)
Warm hits between a case and a suspect (exemplar or pseudo-exemplar)
Partial matches between a case and a named suspect or arrestee (exemplar or pseudo-exemplar)

State or national matches:
Matches between a case and an offender
Partial matches between a case and an offender
Matches between a case and a case in another laboratory

Notification via DNA HITS is **not** necessary for the following types of matches:

Warm hits between cases
Partial matches within a case

The report (evidence report or suspect report) will contain information on all local exact matches and/or partial matches.

DNA HITS is not used for Missing and Unidentified Persons cases. Match notifications are made via a Forensic Biology Report and Notification Letter.

5.4 Verifying and reporting exact matches

5.4.1 Local exact matches discovered via LINKAGE or LDIS

5.4.1.1 Confirm the exact match

In the event an analyst suspects there is a cold hit between his/her “new” case and a previous case or pattern, or between his/her “new” case and a suspect file, his/her supervisor should be notified **immediately**.

Expedite additional testing (including exemplars if needed) 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.

5.4.1.2 Review the matching cases

The analyst of the “new” case has to request the “previous” case(s). For a case-to-case match, compare the information available in the files: precinct, location of occurrence, description of assailant, details of the assault, etc. If any 61 forms are missing, have a supervisor arrange to get a copy. (This step is not required for NYPD project cases. If any of the information in the 61 forms seems inconsistent, discuss with your supervisor.)

For case-to-case matches, 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 and Assistant Director immediately.

For case-to-case matches between similar case types (ex. Property Crime to Property Crime) or disparate case types (Homicide to Property Crime), it is a possibility that a member of law enforcement is the source of the DNA. Therefore, the following should also be determined based on paperwork in the file:

- Was the evidence in both cases collected by the same Crime Scene Unit or Evidence Collection Team member?
- Was the evidence in both cases processed by the same NYPD laboratory Criminalist?

If so, see your supervisor and Assistant Director immediately.

5.4.1.3 Determine if the "new" case should be transferred

Use common sense when deciding on the transfer of a "new" case. Consider the nature of the crimes; the nature of the evidence items within the cases; the time frame of the crimes; and whether any appear to be previously solved via arrest, typing of a suspect, or an offender database match. Transfers should only take place when a logical pattern is created or added to.

Examples of situations where transfer makes sense might include:

- A 2012 sexual assault case matching a 2010 sexual assault case.
- A 2012 burglary case matching a 2011 robbery case.
- A 2012 robbery matching a 2011 sexual assault (where case facts are similar)

If there is no logical pattern or relationship between the cases, no transfer of the "new" case is necessary. Examples might include:

- A 2012 burglary case matching a solved 1996 homicide case.
- A 2012 sexual assault case matching a 2011 auto theft case.
- A 2012 robbery matching a 2011 sexual assault (where case facts are different)

A transfer is NOT necessary if a "new" case is solely matching a previous suspect file. The analyst of the "new" case retains that case and will have the previous suspect file transferred to him/her. The analyst of the "new" case is responsible for making the DNA HITS notification of the case-to-suspect match and for reporting of the newly discovered match in a suspect report.

5.4.1.4 Transfer the "new" case

- Transfer the newly linked case to the analyst for the previous case(s).
- Have a supervisor update records to reflect the new case assignment.
- There is no requirement to complete testing in the entire case, start or complete a draft report, prepare tables, or prepare the DB Profile documentation. However, such things may be done as a courtesy.

5.4.1.5 Make the match notification(s)

- The analyst who owns the case is the one responsible for making the match notification.

Enter the match(es) into DNA HITS using the procedure in section 5.6.

5.4.2 Verifying and reporting SDIS exact matches

With DNA matches identified at SDIS, 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 sample and certain identity searches performed and scheduled by NYS.

Responses to all candidate matches must be immediate. The final disposition of the candidate match to the SDIS custodian must be reported no later than 30 business days after receiving the match report.

5.4.2.1 General Process

The CODIS staff will print out the Candidate Match Detail Reports from the CODIS system along with a Match Inventory list (a summary list of all the cases involved in the candidate matches) and retrieve the corresponding files.

Each candidate match report and corresponding file must be reviewed to confirm whether or not the two profiles indeed match. The analyst reviewing the file must fill out a Candidate Match Confirmation Checklist if the match is found to be real.

If any modifications to the DNA profile are needed, a Profile Modification Form must be filled out by the Interpreting Analyst or the analyst reviewing the data (see section 4.6), and submitted to the CODIS group. It is not necessary to wait for the profile to be modified to continue in the confirmation process.

5.4.2.2Verifying and reporting SDIS offender exact matches

If the profiles are an exact match, complete a NYS DNA Databank Candidate Match Confirmation Form. This form communicates to DCJS and the Databank coordinator the case information, and that the candidate match is, in fact, a true match. Therefore, **one** NYS DNA Databank Candidate Match Confirmation Form for **every** confirmed candidate match listed on the Match Inventory must be completed. The NYS DNA Databank Candidate Match Confirmation Form is then transmitted to DCJS by fax or other electronic means.

Upon receipt of the NYS DNA Databank Candidate Match Confirmation Forms from our laboratory, and upon receipt of confirmation of the offender sample from the NYS DNA Databank coordinator, DCJS will release the offender's name, via fax followed by USPS, in the form of a DCJS Match Letter (see the current version of the *New York State COmbined DNA Index System Procedures).* This letter will contain the name of the offender, any aliases, the NYSID number and offender's current location.

Enter the match(es) into DNA HITS using the procedure in section 5.6.

If the confirmed match has linked an offender to an unsolved case, the investigating agency must obtain an exemplar from the offender and submit to the laboratory for retesting prior to proceeding to trial. This requirement is located on the DCJS Match Letter that is available to the District Attorneys' offices upon request.

The DCJS Match Letter should be used by the DAO to obtain the court order authorizing the collection of the exemplar. The Department of Forensic Biology will perform testing on the exemplar to replicate the DNA match of the offender to the forensic sample(s) and to testify in court to the match. Questions from the DAO regarding offender information, offender blood draws, etc. should be directed to DCJS. Analysis of the exemplar by Forensic Biology is generally not necessary for grand jury proceedings. This analysis, however, is necessary before trial.

5.4.2.3 Verifying and reporting SDIS forensic exact matches

After the data is reviewed, the other laboratory involved in the match must then be notified via telephone, fax or email and the match verified. Both laboratory's case numbers and ORI numbers are on the Match Detail Report and on the Match Inventory list. The contact information for all CODIS laboratories can be found on the CJIS-WAN. Standard case contact protocol should be followed to document any correspondence or conversations.

If it is determined the candidate match is a non-match, the process stops here. All case contacts should be documented on the checklist accordingly.

If it is verified to be a true match, information regarding the cases must be exchanged. The CODIS DNA Match Data Request and Response Form is transmitted to the other laboratory by fax or other electronic means. This form facilitates the exchange of information. Information on this form, if available, should include:

- Contact information for the submitting police agency.
- Contact information for the laboratory.
- Laboratory and police identification numbers (Forensic Biology and complaint numbers).
- Whether the case is solved (i.e. by DNA).
- Suspect information (for example, name, NYSID number, has he/she been tested at our lab, etc.).

- General case information (for example, date of occurrence, type of crime, etc.)
- If the case with the match at SDIS is one of a local pattern, information regarding both/all should be provided to the other laboratory.

Upon receipt of the response from the other laboratory, the match is confirmed. This form documents that the candidate match between the two laboratories was acknowledged, each laboratory has finished their review process, both laboratories are confirming the match and that case information has been exchanged.

Enter the match(es) into DNA HITS using the procedure in section 5.6

5.4.3 Verifying and reporting NDIS exact matches

With DNA matches identified at NDIS, both laboratories involved in the match have confirmation responsibilities. All NDIS matches will be resolved by the CODIS staff.

Responses to all candidate matches must be timely. The final disposition of the candidate match to the NDIS custodian must be reported no later than 30 business days after receiving the match report.

5.4.3.1 General Process

The CODIS staff will print out the Candidate Match Detail Reports from the CODIS system along with a Match Inventory list (a summary list of all the cases involved in the candidate matches) and retrieve the corresponding files.

Each candidate match report and corresponding file must be reviewed to confirm whether or not the two profiles indeed match. The analyst reviewing the file must fill out a Candidate Match Confirmation Checklist.

If any modifications to the DNA profile are needed, a Profile Modification Form must be filled out by the Interpreting Analyst or the analyst reviewing the data (see section 4.6), and submitted to the CODIS group. It is not necessary to wait for the profile to be modified to continue in the confirmation process.

If a profile has a national offender candidate match and a state offender candidate match at or near the same time, allow the state confirmation process to proceed first. If a profile has two (or more) national offender candidate matches at or near the same time, select one of the candidate matches to proceed first (see the CODIS supervisor for guidance on selection). Once one of the candidate matches has been verified and the name of the offender obtained, process the remaining candidate matches as conviction matches.

5.4.3.2 Verifying and reporting NDIS offender exact matches

After the data is reviewed, the other laboratory involved in the match must then be notified via telephone, fax or email and the match verified. Both laboratory's case numbers and ORI numbers are on the Match Inventory list. The contact information for all CODIS laboratories can be found on the CJIS-WAN. Standard case contact protocol should be followed to document any correspondence or conversations.

If it is determined the candidate match is a non-match, the process stops here. All case contacts should be documented on the checklist accordingly.

If it is verified to be a true match, information regarding the cases must be exchanged. The CODIS DNA Match Data Request and Response Form is transmitted to the offender laboratory by fax or other electronic means. This form facilitates the exchange of information. Information on this form, if available, should include:

- Contact information for the submitting police agency.
- Contact information for the laboratory.
- Laboratory and police identification numbers (for example, case number, complaint number, etc.).
- Whether the case is solved (i.e. by DNA).
- Suspect information (for example, name, NYSID number, has he/she been tested at our lab, etc.).
- General case information (for example, date of occurrence, type of crime, etc.).
- If the case with the match at NDIS is one of a local pattern, information regarding both/all should be provided to the other laboratory.
- When available, include any known aliases of the offender/suspect if the case is solved, because the offender/suspect may be in the other database under a different name.

Upon receipt of the CODIS DNA Match Data Request and Response Form from our laboratory, and upon the offender laboratory's confirmation of the offender sample, the match is confirmed. The offender laboratory will release the convicted offender's name, via fax, in the form of a match letter. This letter will contain the name of the offender, any aliases, the State ID #, current location, and usually their SS#.

Enter the match(es) into DNA HITS using the procedure in section 5.6

If the confirmed match has linked an offender to an unsolved case, the investigating agency must obtain an exemplar from the offender and submit to the laboratory for retesting prior to proceeding to trial. This requirement is located on the match letter that is forwarded to the District Attorney's office upon request. The match letter should be used by the DAO to obtain the court order authorizing the collection of the exemplar.

The Department of Forensic Biology will perform testing on the exemplar to replicate the DNA match of the offender to the forensic sample(s) and to testify in court to the match. Questions from the DAO regarding offender information, offender blood draws, etc. should be directed to the agency contact information given on the CODIS DNA Match Data Request and Response form. Analysis of the exemplar by the Department of Forensic Biology is generally not necessary for grand jury proceedings. This analysis, however, is necessary before trial.

5.4.3.3 Verifying and reporting NDIS forensic exact matches

The CODIS staff will print out the Candidate Match Reports from the CODIS system along with a Match Inventory list (a summary list of all the cases involved in the candidate matches) and retrieve the corresponding files.

Each candidate match report and corresponding file must be reviewed to confirm the profile data sent to NDIS is accurate. The analyst reviewing the file must fill out a Candidate Match Confirmation checklist.

If any modifications to the DNA profile are needed, a Profile Modification Form must be filled out by the analyst reviewing the data (see section 4.6), and submitted to the CODIS group. It is not necessary to wait for the profile to be modified to continue in the confirmation process.

After the data is reviewed, the other laboratory involved in the match must then be notified via telephone, fax or email and the match verified. Both laboratory's case numbers and ORI numbers are on the Match Inventory list. The contact information for all CODIS laboratories can be found on the CJIS-WAN. Standard case contact protocol should be followed to document any correspondence or conversations.

If it is determined the candidate match is a non-match, the process stops here. All case contacts should be documented on the checklist accordingly.

If it is verified to be a true match, information regarding the cases must be exchanged. The CODIS DNA Match Data Request and Response Form is transmitted to the other laboratory by fax or other electronic means. This form facilitates the exchange of information. Information on this form, if available, should include:

- Contact information for the submitting police agency.
- Contact information for the laboratory.
- Laboratory and police identification numbers (for example, FB number, complaint number, etc.).
- Whether the case is solved (i.e. by DNA).
- Suspect information (for example, name, NYSID number, has he/she been tested at our laboratory, etc.).
- General case information (for example, date of occurrence, type of crime, etc.).
- If the case with the match at SDIS is one of a local pattern, information regarding both/all should be provided to the other laboratory.

Upon receipt of the response from the other laboratory, the match is confirmed. This form documents that the candidate match between the two laboratories was acknowledged, each laboratory has finished their review process, both laboratories are confirming the match and that case information has been exchanged.

Enter the match(es) into DNA HITS using the procedure in section 5.6

5.5 Evaluating, verifying, and reporting partial matches

5.5.1 General guidelines

Partial match procedures are applicable only to cases that have a clean, informative forensic autosomal DNA profile (single-source or deduced) attributable to a putative perpetrator. Such profiles must have $\geq$10 CODIS core loci, with no Z's, INC's, or other indications of a mixture.

Partial matches will be evaluated by a combination of observing whether there is sharing at each locus (indicating a potential parent-offspring relationship) and/or counting of shared alleles across all loci (indicating a potential full-sibling relationship), followed by a statistical calculation (likelihood ratio). Thresholds for allele sharing and the likelihood ratio have been established and are described on the Partial Match Evaluation Form.

At the local level, only partial matches between evidence samples (within a case or between cases) or partial matches between evidence samples and a named suspect or arrestee for that 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.*

At the state and national level, only partial matches to offenders will be evaluated.

Pull the previous case(s), if applicable.

5.5.2 Local partial matches

Partial matches may exist within a case, between two cases, or between a case and a suspect file.

5.5.2.1 Partial matches within a case

All eligible DNA profiles within a case should be reviewed for potential partial matches. For example, compare a victim or elimination sample to Male Donor A or compare Male Donor A, B, and C to each other.

In the event an analyst believes there is an eligible partial match, the first step is to evaluate the profiles. Using the Partial Match Evaluation Form and following the local flow chart below, determine if the two profiles meet laboratory requirements. If so, expedite any additional testing needed to satisfy the concordance and duplication policies.

If possible and appropriate, further testing using Y STRs should be done. If a partial match is still a possibility, continue the process.

The existence of a partial match within a case is disseminated via the report, using wording that describes that a similarity was noted, states the likelihood ratios for full siblings and/or parent-offspring, and requests additional exemplars.

5.5.2.2 Partial matches between two cases

In the event an analyst believes there is an eligible partial match between two cases (found in LINKAGE or an LDIS search), the first step is to evaluate the profiles. Using the Partial Match Evaluation Form and following the local flow chart below, determine if the two profiles meet laboratory requirements. If so, expedite any additional testing needed to satisfy the concordance and duplication policies.

If possible and appropriate, further testing using Y STRs should be done. If a partial match is still a possibility, continue the process.

The analyst and supervisor must then meet with the local CODIS administrator and/or CODIS manager to discuss the potential partial match. If appropriate, efforts will be made to determine the status of each case (solved vs. unsolved, arrests, etc.) or gain additional case information.

The existence of a partial match between cases is disseminated via DNA HITS. **Enter the match(es) into DNA HITS using the procedure in section 5.6**

5.5.2.3 Partial matches between a case and a suspect (exemplar or pseudo-exemplar)

Partial matches involving the DNA profile of a suspect is limited to the case for which the person is a named suspect or arrestee.

In the event an analyst believes there is an eligible partial match, the first step is to evaluate the profiles. Using the Partial Match Evaluation Form and following the local flow chart below, determine if the two profiles meet laboratory requirements. If so, expedite any additional testing needed to satisfy the concordance and duplication policies.

If possible and appropriate, further testing using Y STRs should be done. If a partial match is still a possibility, continue the process.

The existence of a partial match between a case and a suspect is disseminated via DNA HITS. **Enter the match(es) into DNA HITS using the procedure in section 5.6**

5.5.3 Evaluating, verifying, and reporting state offender partial matches

If a candidate match to an offender is NOT an exact match, the next step is to evaluate it as a potential "partial match". Partial matches are inadvertent "indirect matches" that suggest that the source of an evidentiary profile is potentially a relative of an offender.

This is determined by comparing the number of shared alleles and/or loci, then calculating the full sibling likelihood ratios and/or the parent-offspring likelihood ratios using the CODIS Popstats application. Using the Partial Match Evaluation Form and following the SDIS flow chart, determine if the two profiles meet laboratory requirements.

If not, attach the Partial Match Evaluation Form to the Candidate Match Detail Report and note "no match". The information is added to the case record. The CODIS groups will disposition the candidate match in the CODIS system as "No Match" and send NYS DCJS that information.

If the profiles meet the laboratory requirements for a partial match, then do the following:

Confirm that the profile has been searched in LDIS (see the CODIS group)
Using the Partial Match Inquiry Worksheet, contact the NYPD and the appropriate District Attorney's office(s)

In order for the partial match process to continue, certain requirements have been set by the state. The NYPD and District Attorney's office(s) are asked:

- Are they committed to pursuing further investigation?
- Will they provide follow-up information?

Once the completed worksheet is returned from both the NYPD and District Attorney's office(s), and both agree to pursue the case, continue the process. Complete the DCJS Partial Match Evaluation Request and the CODIS group will transmit it to DCJS by fax or other electronic means.

Upon receipt of the DCJS Partial Match Evaluation Request from our laboratory, DCJS will notify the NYS DNA Databank that a confirmation of an offender DNA profile is being requested based on an "indirect" CODIS match.

After the offender DNA profile has been confirmed, a NYS CODIS Administrator or Supervisor will perform their partial match evaluation using specialized software. This software will calculate the Expected Kinship Ratio (EKR) and Expected Match Ratio (EMR) for the full sibling and parent-offspring relationships. If the EKR and EMR meet the thresholds defined by the state policy, DCJS will release the offender information and EKR/EMR statistics to us.

Enter the match(es) into DNA HITS using the procedure in section 5.6. It is imperative to enter a partial match using "Forensic to Potential Relative (SDIS)" as the match type.

5.5.4 Evaluating, verifying, and reporting national offender partial matches

NDIS has instituted a policy covering partial matches at the national level.

If a candidate match to an offender is NOT an exact match, the next step is to evaluate it as a potential "partial match". Partial matches are inadvertent "indirect matches" that suggest that the source of an evidentiary profile is potentially a relative of an offender

This is determined by comparing the number of shared alleles and/or loci, then calculating the full sibling likelihood ratios and/or the parent-offspring likelihood ratios using the CODIS Popstats application. Using the Partial Match Evaluation Form and following the NDIS flow chart, determine if the two profiles meet laboratory requirements.

If not, attach the Partial Match Evaluation Form to the Candidate Match Detail Report and note "no match". The information is added to the case record. The CODIS Group will disposition the candidate match in the CODIS system as "No Match".

If the profiles meet the laboratory requirements for a partial match, then do the following:

Complete the Request for Release of Offender's Identifying Information letter. The local CODIS administrator and/or CODIS manager will review the form and forward to the FBI.

If the request is approved by the FBI, the FBI will notify the state with the offender information about our request. **The decision to release the name of the convicted offender is done according to applicable state law and policies.** The NDIS Custodian then either:

- Notifies us that the state determines that the information cannot be released, or
- Provides us with the identifying offender information.

If the information is released, **enter the match(es) into DNA HITS using the procedure in section 5.6. It is imperative to enter a partial match using "Forensic to Potential Relative (NDIS)" as the match type.**

5.6 Making notifications using DNA HITS

NOTE: If a new match (case-to-case, case-to-suspect, case-to-known suspect or arrestee, or case-to-offender) is identified to a pattern that pre-dated DNA HITS, the *previous matches* must be entered into DNA HITS *prior* to the new match. In the Notes section, make reference to the previous match letters, including match letter number as well as the date of the original notification.

Step 1: Using the internet, go to the DNA HITS program. Change the drop-down menu to "OCME", then login using your OCME user name and password.

Step 2: Click on "Create New Local Hit" tab in the upper right hand corner.

Step 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" to known suspects/arrestees, and for most partial matches.

Step 4: Enter the case numbers for the new match and click on "Search".

NOTE: For notifications on a new case in an existing pattern, the two cases entered here should be the new case and the **first case** of the pattern. The first case is generally the one whose DNA profile is represented in CODIS; see a supervisor or a member of the CODIS group if unsure which case is the first case.

Step 5: Using the drop-down menu, select the appropriate search type (LINKAGE or LDIS for local matches). If this is not done, all the information will be lost and will have to be reentered.

"Warm hits" between a case and a suspect are reported using the "Case to Known Suspect or Arrestee" function within DNA HITS.

If one of the cases was involved in a previous DNA HITS notification, information for that case will be populated automatically. If both cases are new to DNA HITS, all fields marked in yellow are required to be entered. In addition, when available, the date of occurrence, 61 number and the voucher number **must** be entered. The exceptions are 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).

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.

Step 6: For the 'Criminalist' section, if the analyst assigned (the IA for the cases) is not on the drop-down list, deselect 'Select' and manually type in the analyst's last and first names; use normal capitalization. If the analyst assigned to a case is no longer at the lab, list the Criminalist IV or Assistant Director who reviewed it, in that order of preference. Should neither of them be available, consult CODIS staff or a supervisor regarding analyst assignment.

Step 7: Click on "Get Approval". If any red error messages appear, fix the problem and click on "Get Approval" again. 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.

Step 8: Have the cases reviewed by a Criminalist IV and/or Assistant Director.

Step 9: Have a Criminalist IV or Assistant Director approve the match in DNA HITS. Once approved, the Criminalist IV or Assistant Director will receive a DNA HITS confirmatory email from DNAHITS@cityhall.org.

Step 10: Forward the email to the assigned Criminalist to notify them of the match.

Step 11: Print out the DNA HITS email confirmation and place in each file.

Step 12: Forward the DNA Profile Evaluation Form(s) to the CODIS group in-box.

5.7 Verifying and Reporting Missing and Unidentified Person Matches

General Search Guidelines:
There are varied searches done in CODIS 5.7.4 and Next Generation (NG) CODIS to accommodate Missing and Unidentified Person cases. "Exact matches" are the result of an identity search. An identity search is done amongst the following indices:
Unidentified Human Remains to Unidentified Human Remains
Unidentified Human Remains to Missing Persons

Profiles of Unidentified Human Remains and Missing Persons are also entered into CODIS 5.7.4 for the purposes of performing additional searches against Convicted Offenders and Forensic Unknowns. Searches are performed against the following indices:
Unidentified Human Remains to Convicted Offenders
Unidentified Human Remains to Forensic Unknowns
Missing Persons to Convicted Offenders
Missing Persons to Forensic Unknowns

Ranks or associations to relatives of Missing Persons in a pedigree tree are the result of a pedigree search. A pedigree search is done amongst the following:
Pedigree Tree to Unidentified Human Remains
Biological Mother, Father, and Child to Unidentified Human Remains

Refer to the NYS CODIS Procedures-Search Parameters and NDIS CODIS v 6.0 Missing Person DNA Searches (Operational Procedures) from the FBI for search parameters.

5.7.1 Exact Matches in Next Generation (NG) CODIS (CODIS 6.1)

Exact matches in NG CODIS occur between profiles from Unidentified Human Remains searched against profiles of Unidentified Human Remains and Missing Persons.

5.7.1.1 Local Level Exact Matches (LDIS):

Unidentified Human Remains to Unidentified Human Remains
Unidentified Human Remains to Missing Persons

1. Request and pull the case files.
2. Confirm that the profiles match by reviewing the data.
3. Compare the information available in the files. Some questions to consider are:
    a. When was the body recovered in relation to when the person was reported missing?
    b. Are physical descriptions such as age, race, stature, hair color, eye color, tattoos, scars, etc. indistinguishable?
    c. 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.

4. Determine if the samples were tested in concordance with the duplication guidelines.
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 and Assistant Director immediately.

6. Determine if additional technologies such as Y-STR's or mtDNA are needed to confirm or refute the match.

7. Transfer the newly linked case/or cases to the interpreting analyst from the previous case or to the analyst that has the lowest FB case number. Have your supervisor update records to reflect the new case assignment. (This step can be done after notifications, if desired.)

8. Once all is confirmed, notifications can be made via telephone and/or email.

9. An additional report is written linking the two cases together. Random match probability statistics are performed on the unidentified human remains and included in the report in accordance with Forensic Biology protocol.

10. A notification letter and a copy of the additional report are sent via email to notify all involved parties of the match. For matches with unidentified remains from NYC OCME, the assigned Medical Examiner, Identification Unit, and NYPD Missing Persons are always notified. Matches involving outside jurisdictions will be sent to that jurisdiction’s designee(s). The notification letter may be sent by emailing a scanned .pdf copy of the original signed letter and/or facsimile.

5.7.1.2 State Level Exact Matches (SDIS)

Matches will not occur at the state level in NG CODIS since the New York State Police does not conduct searches within NG CODIS. NYC OCME is the only lab in New York State that currently has and utilizes NG CODIS. NYS has the NG CODIS server but it is only used by the State CODIS Administrator to upload the profiles our lab sends monthly to NDIS.

5.7.1.3 National Level Exact Matches (NDIS):

Unidentified Human Remains to Unidentified Human Remains
Unidentified Human Remains to Missing Persons

With DNA matches identified at NDIS, both laboratories involved in the match have confirmation responsibilities.

Responses to all candidate matches must be immediate. The final disposition of the candidate match to the NDIS custodian must be reported no later than 30 business days after receiving the match report.

1. The CODIS staff will print out the Candidate Match Detail Reports from the CODIS system along with a Match Inventory list (a summary list of all the cases involved in the candidate matches) and retrieve the corresponding files.

2. Each candidate match report and corresponding file must be reviewed to confirm whether or not the two profiles indeed match. The analyst reviewing the file must fill out a Candidate Match Confirmation Checklist.

3. If any modifications to the DNA profile are needed, a Profile Modification Form must be filled out by the Interpreting Analyst or the analyst reviewing the data (see section 4.6), and submitted to the CODIS group. It is not necessary to wait for the profile to be modified to continue the confirmation process.

4. Compare the information available in the files. Some questions to consider are:

    a. When was the body recovered in relation to when the person was reported missing?
    b. Are physical descriptions such as age, race, stature, hair color, eye color, tattoos, scars, etc. indistinguishable?
    c. 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.

5. Determine if the sample(s) were tested in concordance with the duplication policy.

6. 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 and Assistant Director immediately.

7. Determine if additional technologies such as Y-STR's or mtDNA are needed to confirm or refute the match.

8. Once all is confirmed, notifications can be made via telephone and/or email.

9. An additional report is written. Random match probability statistics are performed on the unidentified human remains or the missing person profile and included in the report in accordance with Forensic Biology protocol. If the remains are intact or living person is found, then the profile should be removed from CODIS and noted in the additional report. Refer to Section 4.6.

10. A notification letter and a copy of the report are sent via email to notify all involved parties of the match. For matches with unidentified remains from NYC OCME, the assigned Medical Examiner, Identification Unit, and NYPD Missing Persons are always notified. Matches involving outside jurisdictions will be sent to that jurisdiction's designee(s). The notification letter may be sent by emailing a scanned .pdf copy of the original signed letter and/or facsimile.

5.7.2 Exact Matches in CODIS 5.7.4

5.7.2.1 Unidentified Human Remains to SDIS offender exact matches

If the profiles are an exact match, complete a NYS DNA Databank Candidate Match Confirmation Form. This form communicates to DCJS and the Databank coordinator the case information, and that the candidate match is, in fact, a true match. Therefore, **one** NYS DNA Databank Candidate Match Confirmation Form for **every** confirmed candidate match listed on the Match Inventory must be completed. The NYS DNA Databank Candidate Match Confirmation Form is then transmitted to DCJS by fax or other electronic means.

Upon receipt of the NYS DNA Databank Candidate Match Confirmation Forms from our laboratory, and upon receipt of confirmation of the offender sample from the NYS DNA Databank coordinator, DCJS will release the offender's name, via fax followed by USPS, in the form of a DCJS Match Letter (see the current version of the *New York State COmbined DNA Index System Procedures*). This letter will contain the name of the offender, any aliases, the NYSID number and offender's current location.

1. Request and pull the case file.
2. Confirm that the profiles match by reviewing the data.
3. Determine if the sample was tested in concordance with the duplication guidelines.
4. Once all is confirmed, notifications can be made via telephone and/or email to the OCME Identification Unit and to the Medical Examiner.
5. An additional report is written. Random match probability statistics are performed on the unidentified human remains and included in the report in accordance with Forensic Biology protocol.
6. A notification letter and a copy of the additional report are sent via email to notify all involved parties of the match. For matches with unidentified remains from NYC OCME, the assigned Medical Examiner, Identification Unit, and NYPD Missing Persons are always notified. The notification letter may be sent by emailing a scanned .pdf copy of the original signed letter and/or facsimile.

5.7.2.2 Unidentified Human Remains to NDIS offender exact matches

After the data is reviewed, the other laboratory involved in the match must then be notified via telephone, fax or email and the match verified. Both laboratory's case numbers and ORI numbers are on the Match Inventory list. The contact information for all CODIS laboratories can be found on the CJIS-WAN. Standard case contact protocol should be followed to document any correspondence or conversations.

If it is determined the candidate match is a non-match, the process stops here. All case contacts should be documented on the checklist accordingly.

If it is verified to be a true match, information regarding the cases must be exchanged. The CODIS DNA Match Data Request and Response Form is transmitted to the offender laboratory by fax or other electronic means. This form facilitates the exchange of information. Information on this form, if available, should include:

- Contact information for the submitting police agency.
- Contact information for the laboratory.
- Laboratory and police identification numbers (for example, case number, complaint number, etc.).
- Whether the case is solved (i.e. by DNA).
- Suspect information (for example, name, NYSID number, has he/she been tested at our lab, etc.).
- General case information (for example, date of occurrence, type of crime, etc.).
- If the case with the match at NDIS is one of a local pattern, information regarding both/all should be provided to the other laboratory.
- When available, include any known aliases of the offender/suspect if the case is solved, because the offender/suspect may be in the other database under a different name.

Upon receipt of the CODIS DNA Match Data Request and Response Form from our laboratory, and upon the offender laboratory's confirmation of the offender sample, the match is confirmed. The offender laboratory will release the convicted offender's name, via fax, in the form of a match letter. This letter will contain the name of the offender, any aliases, the State ID #, current location, and usually their SS#.

1. Request and pull the case file.

2. Confirm that the profiles match by reviewing the data.

3. Determine if the sample was tested in concordance with the duplication guidelines.

4. Once all is confirmed, notifications can be made via telephone and/or email to the OCME Identification Unit and to the Medical Examiner.

5. An additional report is written. Random match probability statistics are performed on the unidentified human remains and included in the report in accordance with Forensic Biology protocol.

6.A notification letter and a copy of the additional report are sent via email to notify all involved parties of the match. For matches with unidentified remains from NYC OCME, the assigned Medical Examiner, Identification Unit, and NYPD Missing Persons are always notified. The notification letter may be sent by emailing a scanned .pdf copy of the original signed letter and/or facsimile.

5.7.3 Ranks in NG CODIS (CODIS 6.1)
Pedigree Tree to Unidentified Human Remains (UHR)
Pedigree Tree to Missing Person (MP)
Biological Father, Mother, Sibling (with additional technology) to UHR or MP

Profile(s) from a pedigree tree associated to unidentified human remains or a missing person are ranked according to a joint pedigree likelihood ratio (JPLR) in Rank Manager. Any JPLR above 1 will constitute a rank.

The CODIS staff will print out the Specimen Detail Reports for the associated ranks to the pedigree tree or single relative.

1. Fill out the Rank Manager Sample Inquiries Form.

2. Locate the files and determine if the JPLR constitutes a true association.

3. Some questions to help in the disposition:
   a. Does the gender of the Missing Person correlate to the UHR?
   b. When was the body recovered in relation to when the person was reported missing?

4. If further investigation is still needed, then review the STR data and perform kinship analysis.

5. If an additional technology such as mtDNA has been performed, utilize that in the assistance of the disposition of the case.

6. Determine if additional technologies such as YSTR’s or mtDNA need to be performed.

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 (i.e. strengthening the likelihood ratio or assisting in confirming an association via a direct match with a reference sample from the missing person).

8. If the association does not pan out, note it as “No Match” and initial and date the Specimen Detail Report and make comments on the Rank Manager Sample Inquiries Form.

9. For true associations, notifications can be made via telephone and/or email.

10. An additional report is written. Kinship analysis is performed between the relatives of the Missing Person and the unidentified human remains or the missing person profile and included in the report in accordance with Forensic Biology protocol. The profiles of the relatives of the Missing Person must be removed from CODIS 6.1 and noted in the additional report. Refer to Section 4.6.

11. A notification letter and a copy of the report are sent via email to notify all involved parties of the match. For associations to unidentified remains from NYC OCME, the assigned Medical Examiner, Identification Unit, and NYPD Missing Persons are always notified. Associations involving outside jurisdictions will be sent to that jurisdiction's designee(s). The notification letter may be sent by emailing a scanned .pdf copy of the original signed letter and/or facsimile.

5.7.4 Low stringency searches in CODIS 5.7.4

NY State performs a low stringency search every quarter against the remaining Relatives of Missing Person samples in the state database against the Unidentified Human Remains index in 5.7.4.

For verifying and reporting these possible matches, follow the same steps above in 5.7.3.

5.8 Organization of CODIS Paperwork in Files

Left side of file: if all paperwork was properly completed and photocopied, the left side of the file should contain:

- Forensic Biology, Cellmark, Bode or Genescreen report
- DB Profile documentation report
- Specimen Detail Report - printout from computer
- Candidate Match Detail Report - printout from computer
- Candidate Match Confirmation Checklist - original
- Candidate Match Confirmation Form - copy
- DCJS Match Letter – copy faxed by DCJS (or comparable form from another state)
- DNA HITS confirmation email – printout from email (CODIS staff does not need a copy

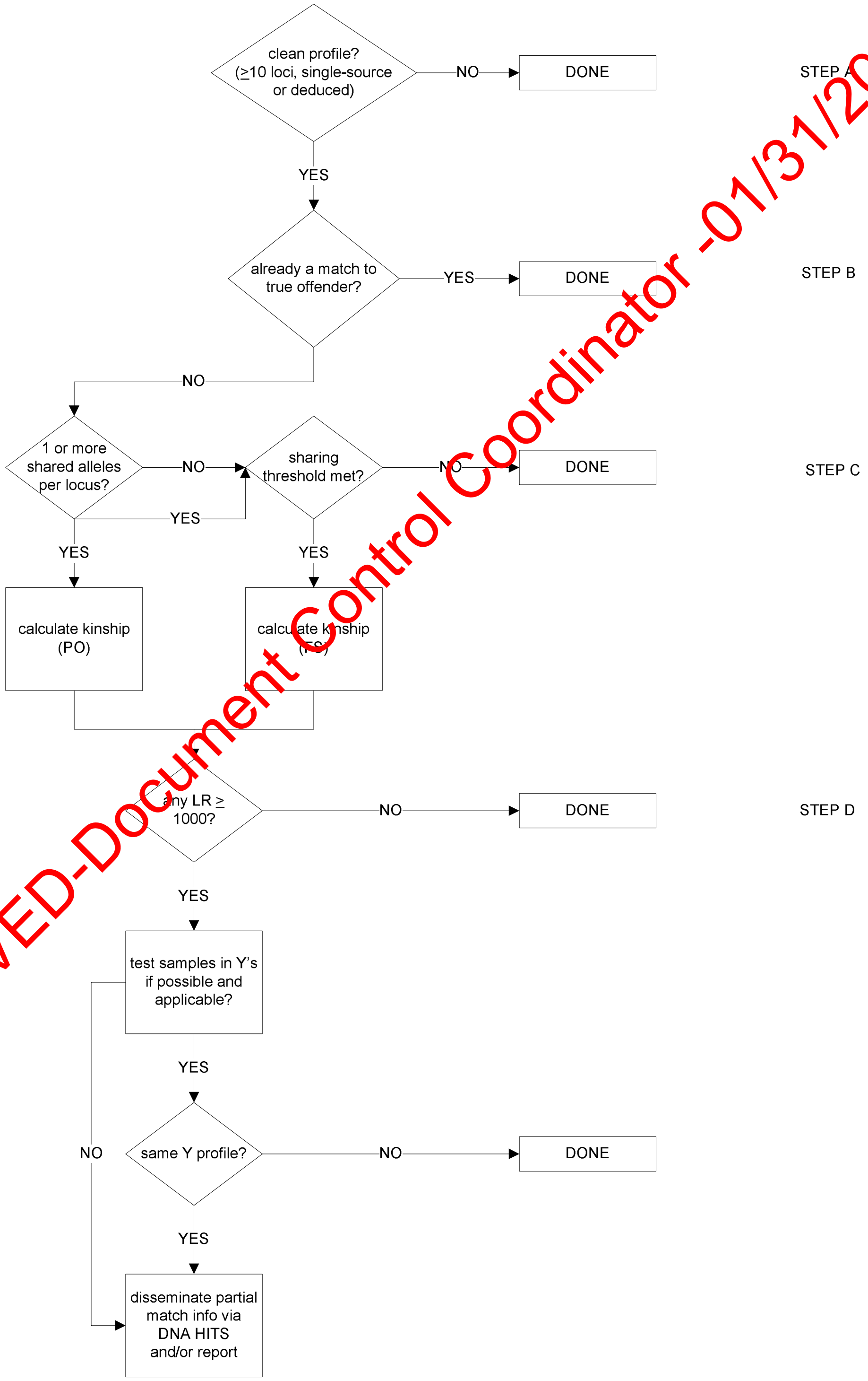
For Missing Persons cases, left side of file depending on the type of match may have some or all of the following:

- Forensic Biology report(s)
- DB Profile documentation report
- Specimen Detail Report - printout from computer
- Candidate Match Detail Report - printout from computer
- Candidate Match Confirmation Checklist – original
- Hit Notification Letter-original or copy, PDF of original saved in CODIS folder under “HITNOT’ in “MISP”

Depending on the type of match and at what level it may have occurred, the following may also be on the left side of the file:

- Candidate Match Confirmation Form-copy
- DCJS Match Letter-faxed copy
- Supporting paperwork such as copies of dental records, anthropology reports and scene reports from within OCME or from the outside jurisdiction.

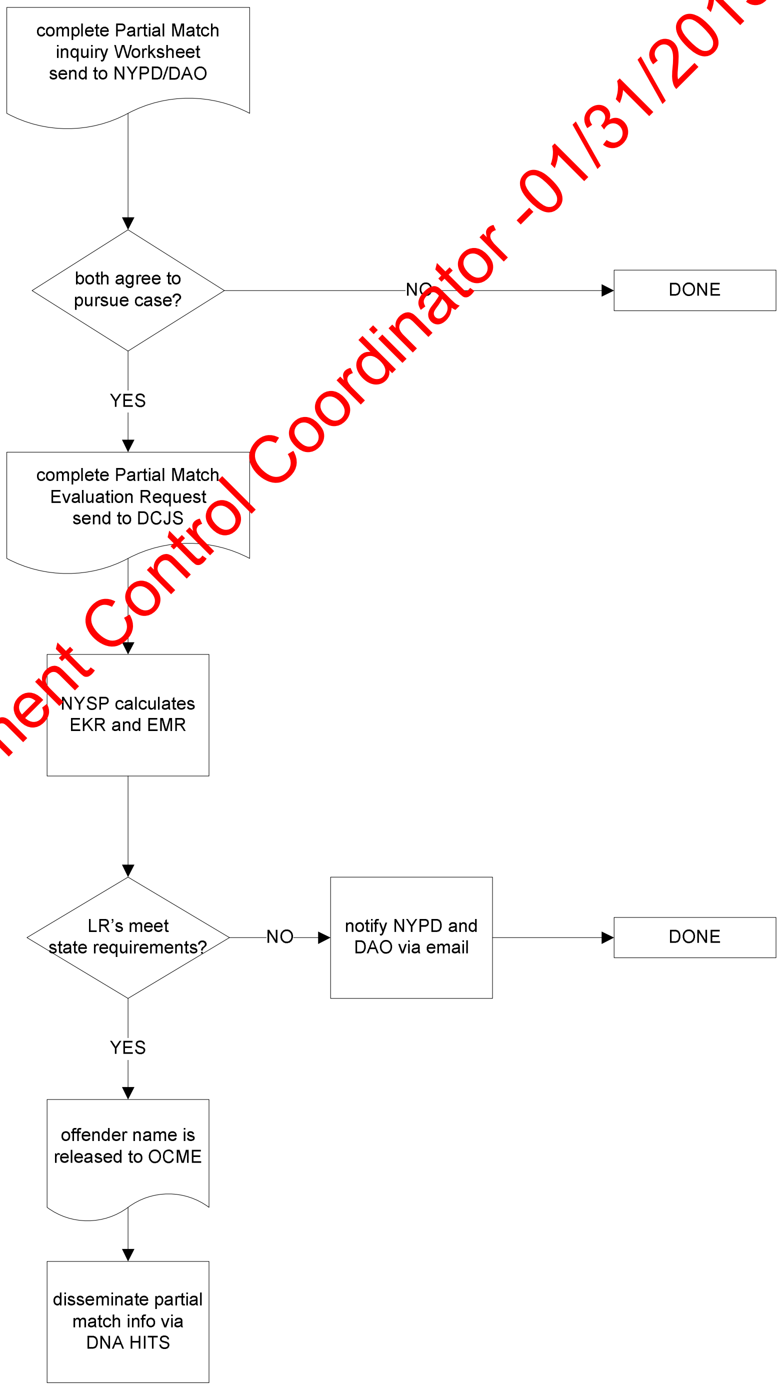
Local partial match flowchart



SDIS partial match
flowchart

Evaluate offender
candidate match

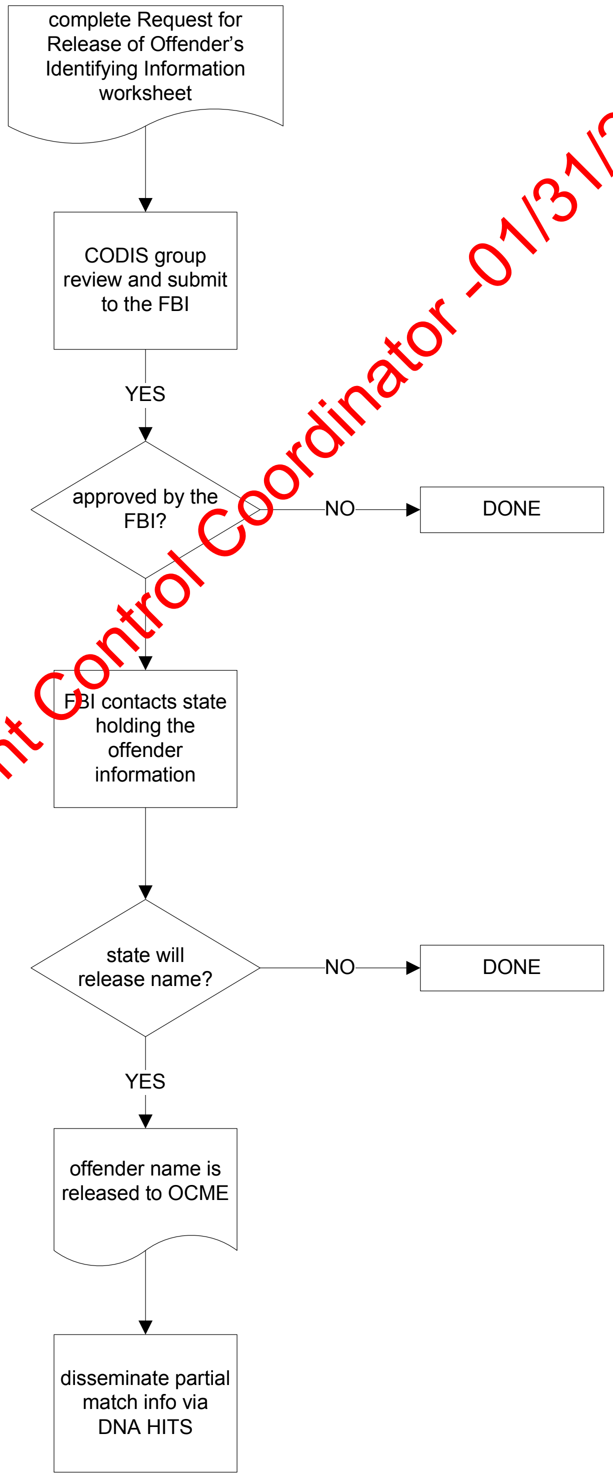
If “yes” through
step D of local
flowchart



NDIS partial match
flowchart

Evaluate offender
candidate match

If "yes" through
step D of local
flowchart



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, 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 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 Relative (see section 1.0 CODIS Terms and Abbreviations for definitions).

6.1.5 Refer to flowcharts provided by the FBI (NDIS Procedures section 4d, CODIS Hit Disposition Reporting) 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)
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)

Note: Once all US labs are online with CODIS 7.0, dispositions for Detainee and Arrestee hits will be added to this list.

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 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).

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.

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:

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

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: 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 "Offender 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".

<u>Rule #3</u>: 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).

<u>Rule #4</u>: 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.

<u>Rule #5</u>: 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.

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

<u>Rule #7</u>: 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.

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.

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 from a solved case (Nassau County). The NYPD reports that the match aids their investigation.

Disposition: Forensic hit (FH_S).

Scorecard: OCME reports one investigation aided. Nassau County reports one forensic hit (FH_S) because their forensic sample resided in the database 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, at 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 (OH_S)

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

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 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:
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 can set 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). It matches a profile from an arrestee sample (Virginia SDIS). The NYPD reports that the match aided the investigation.

Disposition: Arrestee Hit (report as Offender Hit until all US CODIS labs have CODIS 7.0)

Scorecard: OCME reports one investigation aided and Virginia reports one arrestee (or, temporarily, offender) hit.

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

Action: OCME sets Source ID to "Yes." The evidence and arrestee profiles remain in CODIS and the evidence profile may be uploaded to NDIS (assuming it meets completeness and eligibility requirements). Arrestee profiles are allowed at NDIS provided the submitting state has an applicable law allowing 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: Suspect hit (for the second case).

Scorecard: OCME reports one suspect hit and one investigation aided. (Suspect hits are reported as offender hits until all CODIS labs have CODIS 7.0).

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 ID can 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 LDIS 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.

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 neither the plea has been arranged nor the prosecution begun and these activities may hinge on the presence of DNA results.

Action: OCME can set 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 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 can set 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, at 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 who the source of that DNA sample was.

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.

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. The profile *must* be removed from CODIS, 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 #14:
OCME analyzes a suspected pattern of 4 unsolved burglaries, 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. 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 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 previously both have 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 no suspect is ever identified; or if one is, 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. One is chosen to represent the pattern at SDIS and NDIS; the remaining 3 are placed in LDIS’ Pattern category.

Example #17:
One month after Example #16, there is a hit to a newly-entered offender at SDIS to this pattern.

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.

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: Offender hit.

Scorecard: OCME reports one offender 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 could go on to SDIS/NDIS assuming it meets completeness and eligibility requirements, if the pattern is not yet represented at higher levels of CODIS.

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.

NOTE: OCME and NY-SDIS procedures would have found this pattern of 4 before uploading them all to SDIS/NDIS; only one representative profile per OCME pattern is uploaded to SDIS/NDIS. This scenario then becomes Example 14.

Example #20:
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 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 (between the two labs—agreement must be reached upon who reports this up to SDIS) and zero investigations aided (since they have already been aided). Now suppose that a month later, an offender is loaded into SDIS and matches 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 (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.

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 analyses 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 OCME correctly dispositions the new match as one offender hit and one investigation aided (see also Example #18).

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. Were the sample to be uploaded to state and generate a hit, no hits or investigations would be awarded (they occurred at the local level).

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			0				1		
Example #3					1		1		
Example #4	0								
Example #5	1					1			
Example #6	0								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**

6.2.5 Hit counting statistics in the form of a CODIS Hit Counting Scorecard (see Appendix 9.12) are to be submitted to the SDIS custodian and DCJS 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 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 and DCJS. 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.

This section draws heavily from the NDIS procedures.

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 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 is notified 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 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.

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 three: Forensic Hit, Offender Hit, Investigative Information 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 or No Match (see section 1.0 CODIS Terms and Abbreviations for definitions).

6.1.4 In Next Generation (NG) CODIS additional dispositions that may be used are: ID confirmed, ID pending, Waiting for More Data, Maternal Relative (see section 1.0 CODIS Terms and Abbreviations for definitions).

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 all want to claim hits - a total of three hits - when only one hit occurred).

There is currently no hit counting required by NDIS for matches occurring within NG CODIS.

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).

Investigations Aided: The primary metric is the number of investigations aided. The number of investigations aided is a better measure of CODIS program performance than the number of hits since the effectiveness of CODIS is ultimately measured by the crime it helps solve.

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:

Rule #1: The level in the CODIS hierarchy (GDIS, SDIS, NDIS) at which the hit occurs gets credit for the hit.

Rule #2: *A single hit may aid more than one investigation.* A hit linking five separate crimes is still only one hit. However, for each case assisted, the laboratory gets credited one “investigation aided” (IA)

Rule #3: An investigation may be aided only once - Offender hits take priority over Forensic hits.

6.2.4 Scenario examples and Corresponding Scorecard:

Scenario 1: On Day #1, OCME uses CODIS to discover a match between two previously unlinked cases.
Scorecard: 1 forensic hit (FH), 2 investigations aided (IA)

On Day #2, a new case is submitted to OCME and CODIS matches it to the two cases linked on Day #1.
Scorecard: 1 forensic hit, 1 investigation aided

Scenario 2: On Day #3, SDIS at Albany links a case from Westchester to a case at the OCME (neither case has been previously aided).
Scorecard: 1 forensic hit for Albany (FH), 1 investigation aided for Westchester, 1 investigation aided for OCME, 1 investigation aided in another laboratory for Westchester (IA_S), 1 investigation aided in another laboratory for OCME, 1 forensic hit at SDIS for Westchester (FH_S) and 1 forensic hit at SDIS for OCME

Scenario 3:	On Day #4, a new case from OCME matches a convicted offender from NJSP (hit occurred at NDIS).
Scorecard:	1 offender hit for NDIS, 1 offender hit at NDIS for NJSP (OH$_n$), 1 offender hit at NDIS for OCME, 1 investigation aided for OCME
Scenario 4:	On Day #5, a new case from OCME matches a new case at NJSP (hit occurred at NDIS).
Scorecard:	1 forensic hit for NDIS, 1 investigation aided for OCME, 1 investigation aided for NJSP, 1 forensic hit at NDIS for OCME (FH$_n$), 1 forensic hit at NDIS for NJSP, 1 investigation aided in another state for OCME (IA$_n$) and 1 investigation aided in another state for NJSP
Scenario 5:	On Day #6, one of the three OCME cases linked on Days 1 and 2 match a convicted offender at SDIS (Albany), all three cases are now solved.
Scorecard:	1 offender hit for Albany, 1 offender hit at SDIS for OCME, no investigations aided

Example scorecard for OCME for above 5 scenarios:

Match Date	**FH**	**IA**	**FHs**	**FHn**	**OHs**	**OHn**	**IAs**	**IAn**	**OHl**
Day #1	1	2							
Day #2	1	1							
Day #3		1	1				1		
Day #4		1				1			
Day #5		1		1				1	
Day #6		0			1				
Total	2	6	1	1	1	1	1	1	0

6.2.5 Hit counting statistics in the form of a CODIS Hit Counting Scorecard (see Appendix 9.12) are to be submitted to the SDIS custodian and DCJS no later than the 7th day of each month. The SDIS custodian forwards state information to the NDIS custodian. In addition to tracking CODIS hits, the number of non-suspect cases that enter the Department of Forensic Biology each month are also tracked and reported to the SDIS custodian and DCJS. NYPD Backlog cases are treated as non-suspect cases and reported in addition to the number of non-suspect Forensic Biology cases.

7.1 Users

7.1.1 Users are defined as personnel who have login access to the CODIS system and/or qualified DNA analysts who are responsible for producing the DNA profiles stored in NDIS. Categories include CODIS Analyst, Non-Host User, and CODIS IT User.

7.1.2 The Designated State Official is responsible for collecting all information from participating laboratories within the state, maintaining copies and forwarding required documentation to the FBI.

7.1.3 In the Department of Forensic Biology a Qualified DNA Analyst is defined as an Interpreting Analyst who is a Criminalist II or higher title meeting the FBI Director's Quality Assurance Standards. The Department of Forensic Biology will add and remove users using the guidelines established by the FBI in the *NDIS Operational Procedures Manual* and forward the required documentation to the Designated State Official.

7.1.4 Users are required to complete the Annual Review of DNA Records Acceptable at NDIS. This computer-based training serves to define and clarify the types of DNA records that are acceptable at NDIS. This is a Federal requirement for participation in the CODIS program. In the Department of Forensic Biology, a CODIS Administrator will ensure that each user completes the training and quiz annually. The certificate from the quiz is printed to confirm that each user has received the annual reminder and understands and will abide by what DNA data is accepted at NDIS. These completed annual reminders will be maintained by the CODIS staff in binders and available for inspection upon request. These certificates are forwarded to the New York State CODIS Administrator. Failure to comply with this requirement may result in suspension of the Department of Forensic Biology's CODIS rights.

7.1.5 All paper records regarding CODIS users are maintained by the CODIS staff in binders and are available upon request.

7.2 Adding a User to NDIS

7.2.1 To add a user to NDIS, the Designated State Official will send a letter to the NDIS custodian requesting the addition. The Department of Forensic Biology is responsible for forwarding to the Designated State Official the following documentation for each user being added:

- FD-484: Privacy Act explanation.
- FD-258: Fingerprint (10 print) card; two copies.
- FD-816: Background Data Information form.
- CODIS User Information form (see Appendix 9.13).
- External Proficiency Testing Document for each Qualified DNA Analyst (see Appendix 9.14).

7.2.2 The start date for each new user is upon notification by the SDIS custodian of each new user approval.

7.3 Removing a User From NDIS

7.3.1 There are two ways to remove a user from NDIS:

A Stop Date is set for the user: this allows previous data from the user to remain in the system, but no further data will be accepted - this is the method the Department of Forensic Biology currently uses

User identification is deleted: this will delete some or all data associated with the user, including any profiles entered or modified by that user.

7.3.2 The Designated State Official will request the removal of a user if any of the following conditions occur:

- The user may leave employment at a participating laboratory or a change of duties makes it inappropriate to continue access to NDIS
- An NDIS user may fail a periodic security check and the FBI's rejection of the security check would require the State to remove the user
- There may be a problem with the data associated with the user, either because the user has received unsatisfactory ratings in external proficiency tests or because data was falsified. Removal of the user may be initiated by either the State or the FBI.

7.3.3 The stop date should be set to within 20 working days of when/if any of the above situations occur.

7.3.4 Request to remove a user should be submitted to the Designated State Official in written form stating a recommendation regarding all data associated with the user (see Appendix 9.15).

7.0 USER MANAGEMENT

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7.1 Users

7.1.1 Users are defined as personnel who have login access to the CODIS system and/or qualified DNA analysts who are responsible for producing the DNA profiles stored in NDIS. Categories include CODIS Analyst, Non-Host User, and CODIS IT User.

7.1.2 The Designated State Official is responsible for collecting all information from participating laboratories within the state, maintaining copies and forwarding required documentation to the FBI.

7.1.3 In the Department of Forensic Biology a Qualified DNA Analyst is defined as an Interpreting Analyst who is a Criminalist II or higher title meeting the FBI Director's Quality Assurance Standards. The Department of Forensic Biology will add and remove users using the guidelines established by the FBI in the *NDIS Operational Procedures Manual* and forward the required documentation to the Designated State Official.

7.1.4 Users are required to complete the Annual Review of DNA Records Acceptable at NDIS. This computer-based training serves to define and clarify the types of DNA records that are acceptable at NDIS. This is a Federal requirement for participation in the CODIS program. In the Department of Forensic Biology, a CODIS Administrator will ensure that each user completes the training and quiz annually. The certificate from the quiz is printed to confirm that each user has received the annual reminder and understands and will abide by what DNA data is accepted at NDIS. These completed annual reminders will be maintained by the CODIS staff in binders and available for inspection upon request. These certificates are forwarded to the New York State CODIS Administrator. Failure to comply with this requirement may result in suspension of the Department of Forensic Biology's CODIS rights.

7.1.5 All paper records regarding CODIS users are maintained by the CODIS staff in binders and are available upon request.

7.2 Adding a User to NDIS

7.2.1 To add a user to NDIS, the Designated State Official will send a letter to the NDIS custodian requesting the addition. The Department of Forensic Biology is responsible for forwarding to the Designated State Official the following documentation for each user being added:

- FD-484: Privacy Act explanation.
- FD-258: Fingerprint (10 print) card; two copies.
- FD-816: Background Data Information form.
- CODIS User Information form (see Appendix 9.13)
- External Proficiency Testing Document for each Qualified DNA Analyst (see Appendix 9.14).

7.2.2 The start date for each new user is upon notification by the SDIS custodian of each new user approval.

7.3 Removing a User From NDIS

7.3.1 There are two ways to remove a user from NDIS:

<u>A Stop Date is set for the user</u>: this allows previous data from the user to remain in the system, but no further data will be accepted - this is the method the Department of Forensic Biology currently uses

<u>User identification is deleted</u>: this will delete some or all data associated with the user, including any profiles entered or modified by that user.

7.3.2 The Designated State Official will request the removal of a user if any of the following conditions occur:

- The user may leave employment at a participating laboratory or a change of duties makes it inappropriate to continue access to NDIS
- An NDIS user may fail a periodic security check and the FBI’s rejection of the security check would require the State to remove the user
- There may be a problem with the data associated with the user, either because the user has received unsatisfactory ratings in external proficiency tests or because data was falsified. Removal of the user may be initiated by either the State or the FBI.

7.3.3 The stop date should be set to within 20 working days of when/if any of the above situations occur.

7.3.4 Request to remove a user should be submitted to the Designated State Official in written form stating a recommendation regarding all data associated with the user (see Appendix 9.15).

Revision History:

March 24, 2010 – Initial version of section

8.1 Proficiency Testing

8.1.1 Proficiency testing will be conducted as detailed in the *Department of Forensic Biology's Administrative Manual*.

8.1.2 Proficiency test documentation will be maintained and provided annually to NDIS as required by the *NDIS Operational Procedures Manual*. A Qualified DNA Analyst External Proficiency Testing form is saved electronically for each analyst in the CODIS directory of the network. These forms are filled out annually and forwarded to the SDIS Custodian no later than the date designated by the NYS SDIS Administrator. Failure to comply with this requirement may result in suspension of Forensic Biology's CODIS rights.

8.1.3 Problems related to proficiency testing will be addressed as detailed in the *Department of Forensic Biology's Administrative Manual*.

8.2 Audits

8.2.1 Audits of the laboratory will be conducted as detailed in the *Department of Forensic Biology's Administrative Manual*.

8.2.2 Audits test documentation will be maintained and provided annually to NDIS as required by the *NDIS Operational Procedures Manual*. Audit documentation will be provided yearly to the SDIS custodian for submission to the NDIS custodian in the form of a Laboratory Audit Certification accompanied with a letter signed by the Laboratory Director (see Appendix 9.16).

8.2.3 The Department of Forensic Biology and its CODIS program will be audited as required by "*The Quality Assurance Standards for DNA Testing Laboratories and Convicted Offender DNA Databasing Laboratories*," the national standards issued by the Director of the FBI.

8.3 9947A And Other Positive and Negative Control Monitoring

8.3.1 9947A and other applicable positive control STR profiles will be compared to the appropriate positive control profile(s) at the time the data is analyzed.

8.3.2 Negative controls will be examined at the time the data is analyzed.

8.3.3 A Positive Control Certification letter (see Appendix 9.17) will be sent to the SDIS custodian annually as required by the *New York State Combined DNA Index System Procedures*.

8.4 Monthly database QA/QC checks

Each month, a series of checks are performed as a quality measure. The checks are designed to ensure that the profiles in LDIS are allowable and proper, and include the use of queries ("views" in CODIS language). The list of checks includes the following and documentation will be maintained in the CODIS area.

Profiles that need fixes may be referred to the interpreting analyst or supervisor, or may be dealt with by the CODIS group.

8.4.1 Specimen Manager views covering the entire database

Run the following views, evaluate the results, and take appropriate actions:

- Marked Specimens with Unmarked Uploadable Loci (should not have any; mark any affected loci)
- Microvariant (.x) Alleles present (fix if any are found)
- New NDIS ladders check (fix any off-ladder alleles such that they comply with official allelic ladder)
- Specimens assigned to no indexes (should not have any; investigate and fix)
- Specimens Violating 4x4 Rule (there are a handful which have been granted exceptions, as noted in comment boxes; investigate and fix any others)
- Specimens Unmarked for Upload (disregarding suspects and patterns; investigate and fix any others)

8.4.2 Match Manager views covering the entire database:

Run the following views, evaluate the results, and take appropriate actions:

- Matches with Disposition Discrepancies
- Overdue Dispositions

8.4.3 Spot check of profiles entered during a month:

To do this, create a view in specimen manager for all samples "assigned" in desired time frame (e.g. 8/1/11 to 8/31/11). It is preferable to wait 2-3 months for ease of obtaining the case file.

- Highlight non-suspect profiles. These will be the pool to examine.
- Scroll through and select every 16th specimen ID; pull these files. The goal is to have a minimum of a 5% review rate.
- Examine all selected CODIS profiles in a case for eligibility, correctness, and 4x4 compliance; complete the worksheet designed for this process.
- Fix problems found, as needed.
- A CODIS supervisor will put a note into the comment box of all specimens examined that the profile was inspected during a database QA/QC check on (date) and that the profile is eligible for the database at this time; and sign off on the form. The form remains in the case file.

9.0 ENTERING PROFILES INTO LINKAGE

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The alleles in LINKAGE are organized in Cofiler and Profiler Plus order. Therefore, there are two separate methods to enter profiles into LINKAGE, depending on the allele order.

9.1 To enter DNA profiles into LINKAGE organized in Cofiler and Profiler Plus order:

A. Open the LINKAGE database
B. Hit “F9” to enter edit mode
C. While at the top of the database, hit “insert” to get a blank line
D. In the appropriate fields, type in the
    1) Case number – either FB case number or NYPD project case number
    2) V# - “1” unless part of a pattern; otherwise “2” for the second victim, etc. Use “S” for a matching suspect, “1” for a non-matching suspect.
    3) DNA alleles (no commas, see 9.3 below)
    4) Pattern designation, if applicable
    5) “E” for evidence, “S” for suspect’s exemplar, “P” for suspect’s pseudo-exemplar
    6) Victim name – first and last names if a person, or name of business if not
    7) Suspect name, if known
    8) Date of incident – from complaint form, lab request, or the date the rape kit was collected
    9) Precinct – number if known, otherwise “M,” “K,” “Bx,” “Q,” or “R” based on the storage number for NYPD projects
    10) If an evidence profile matches a suspect, enter “True” here
    11) The date is automatically entered
    12) Leave the LDIS field blank
E. Using the Tab or arrows, leave the record – this causes your newly-entered DNA profile to be added to LINKAGE; if desired, hit “F9” again to lock the database

9.2 To enter DNA profiles typed in Identifiler into LINKAGE:

A. Open the form **LINKAGE ID data entry** either by double-clicking on it (found in the same directory as LINKAGE) or by using File/Open/Form within Paradox and navigating to that directory.
B. Hit “F9” to enter edit mode

C. While at the top of the form, hit “insert” to get a new blank form

D. In the appropriate fields, type in the

   1) Case number – either FB case number or NYPD project case number
   2) V# - “1” unless part of a pattern; otherwise “2” for the second victim etc. Use “S” for a matching suspect, “1” for a non-matching suspect.
   3) DNA alleles (no commas, see 9.3 below)
   4) “E” for evidence, “S” for suspect’s exemplar, “P” for suspect’s pseudo-exemplar
   5) Pattern designation, if applicable
   6) Victim name – first and last names if a person, or name of business if not
   7) Suspect name, if known
   8) Date of incident – from 61 form, lab request, or the date the rape kit was collected
   9) Precinct – number if known, otherwise “M,” “K,” “Bx,” “Q,” or “R” based on the storage number for NYPD projects
   10) If an evidence profile matches a suspect, enter “True” here
   11) The date is automatically entered
   12) Leave the LDIS field blank

E. Use Insert again to create a new blank form – this causes your newly-entered DNA profile to be added to LINKAGE; if desired, hit “F9” again to lock the database

9.3 Allele Entry

Alleles must be entered properly!

9.3.1 For autosomal loci, enter one allele for homozygotes; “allele 1,” space, “allele 2” for heterozygotes (no commas, no extra spaces). Amelogenin is entered either as XX or XY.

9.3.2 For “new” alleles, use “12.x” etc. for off-ladder alleles, use “<6” and “>30” etc. for alleles larger or smaller than the allelic ladder.

9.3.3 If you do not have both alleles (i.e., in a deduced partial profile) leave blank. Do not type in “**”, “inc”, “NEG”, “+”, or a single allele if you think the true profile may be heterozygous.

9.4 Completion

9.4.1 Once the DNA profile has been entered, the database will automatically sort itself the profile into the proper location. If the profile does not sort, and the words “key violation” appear on the top or the bottom of the screen, a duplicate profile may exist. Move your cursor over to the V# field and type in “x” instead.

9.4.2 Use “Ctrl-Z” to zoom to the case number you just entered and check the accuracy of your entry. If necessary, change the “x” in the V# field to the next victim number. Use “Ctrl-A” to move to the next instance of that number, if necessary.

9.4.3 On the LDIS/LINKAGE Case Evaluation Form, date and initial that the DNA profile was entered into LINKAGE.

9.4.4 Sorting is based on the Cofiler-Profiler Plus loci. If the DNA profile is incomplete, the sorting may not find matches. A query may be used to locate any potential matches. For DNA profiles that are also destined for LDIS, matches missed in LINKAGE will be found during the LDIS autosearch performed by the CODIS group prior to each upload.