



# Forensic Biology Section

## CODIS Entering Uploading and Searching Offender DNA Profiles

### 1. Scope

To provide guidelines and instructions for entering, uploading, and searching convicted offender DNA profiles in the State-level DNA Index System (SDIS) and National-level DNA Index System (NDIS), collectively known as the Combined DNA Index System (CODIS).

### 2. Requirements

- 2.1. All individuals involved in reading or entering data in CODIS must be entered as a “User” in the CODIS local and state systems and approved by the FBI as qualifying for CODIS access. The FBI must be notified in writing about the addition or deletion of any users. Refer to the FBI’s NDIS Operational Procedures Manual for appropriate forms and fingerprint cards.
- 2.2. All NDIS Users must successfully complete the ‘Annual Review of DNA Data Accepted at NDIS’ online training (provided by FBI) and biannual proficiency tests.
- 2.3. If the CODIS Administrator position is unoccupied and there is no backup CODIS Admin, profiles cannot be uploaded to NDIS.
- 2.4. Convicted offenders entered into SDIS must be appropriate as designated by Maine DNA Databank and Databasing law (see current **Maine Law Title 25, Chapter 194: DNA Data Base and Data Bank Act**). The prerequisite for samples to qualify for upload to NDIS is that they qualify under the submitting State’s law.

### 3. Quality Assurance

#### **In-house samples:**

- 3.1. CODIS samples processed in-house will have a case folder created to document all of the processing and interpretation performed. Samples may be processed one at a time or in batches. Case files will be organized in the same manner as casework files.
- 3.2. Each profile or batch of profiles will be Technically Reviewed by a second qualified DNA Analyst before being entered into the database to ensure correct interpretation and transcription of alleles.
- 3.3. The technically reviewed profiles may be manually keyed into SDIS or imported as a CMF file for entry into SDIS.
- 3.4. If manually entered, a printout of each profile will be generated from SDIS (in Specimen Manger) and Administratively Reviewed by a qualified DNA Analyst to check for typographical errors. Alternatively, two qualified DNA Analysts may work in unison to double-check the data entry of each profile as it is typed.
- 3.5. At least 5% of the samples uploaded must be reanalyzed (either Direct Amp or manually extracted/quantified/amplified) after uploading several projects to NDIS. The comparison of the reanalyzed samples to the database profiles should be documented.



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### **Outsourced samples:**

- 3.6. All of the offender profiles and controls must be technically reviewed by a qualified DNA Analyst before searching the profiles in SDIS or uploading them to NDIS. This 100% review verifies the allele calls at every locus for samples and positive controls, as well as check for appropriate results in ladders, reagent blanks, negative controls and internal size standards.
- 3.7. At least 5% of the samples sent to the vendor lab must be independently extracted and DNA profiled in-house before uploading vendor data to NDIS. The samples may be analyzed before sending to the vendor lab (as Quality Control samples) or after reviewing data from the vendor (as Reanalysis samples). The comparison of QC and Reanalysis samples to DNA profiles generated by the vendor should be documented.
- 3.8. External DNA audits of the vendor lab by independent bodies such as the National Forensic Science Technology Center (NFSTC) ensure compliance of the vendor laboratory with the FBI National Quality Assurance Standards for Convicted Offender DNA Databasing Laboratories.
- 3.9. On-site visits of the vendor lab should be performed at the start of the contract and annually thereafter as an additional measure of quality assurance and compliance with the FBI National Quality Assurance Standards.

## **4. Entering Profiles**

### CMF data entry:

- 4.1. Upon receipt of a “batch” of data, examine the binder for information such as number of samples reported, unusual alleles detected, or samples that failed.
- 4.2. The accompanying invoice should be signed and returned to the appropriate entity (see contract).
- 4.3. 100% of data must be reviewed in GeneMapper-ID as follows:
  - 4.3.1. Log in using your authorized CODIS Username (or edit in the CMF afterwards).
  - 4.3.2. Reanalyze the vendor lab’s electronic data.
  - 4.3.3. Inspect all extraction and amplification controls, ladders, and size standards.
  - 4.3.4. Artifacts CAN be deleted (pull-up, high stutter, spikes, 2<sup>nd</sup> peak BDL, poor morphology or migration) and allele calls CAN be edited (OLA).
  - 4.3.5. Choose “View” and select “Allele Changes” (Alt-V-A) to make edits visible.
  - 4.3.6. Change the Specimen Category from “no export” to “convicted offender” for samples to be exported in the CMF file.
  - 4.3.7. Problematic samples may be re-extracted and profiled in-house to obtain or verify DNA profiles.



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- 4.3.8. Any data that is questionable will be discussed with technical staff at the vendor lab to resolve any quality or interpretation issues. Documentation of these exchanges should be maintained in the contract binder.
- 4.4. Create a CMF of acceptable, technically reviewed data as follows:
  - 4.4.1. Choose 'File' and then 'Export Table for CODIS'.
  - 4.4.2. Select 'CMF 3.0' for the 'Export File As' format, verify that the "Source Lab ID" and the "Destination Lab ID" are set to "MEMSP0000", and save to the H-drive or desktop computer. (If MEMSP0000 is not in the Lab ID drop down lists, it can be added under 'Tools' – 'CODIS Export Manager').
- 4.5. Importing CMF into CODIS:
  - 4.5.1. Transfer the CMF created above to the CODIS server (e.g. on disc or USB drive).
  - 4.5.2. Open Analyst Workbench, select Specimen Manager, click Import, choose the relevant CMF, and click 'Open'. This will forward the information contained in the CMF file to the Message Center.
  - 4.5.3. Validate the import file in Message Center. Review the validation report. If any samples are labeled as "problem", they will not import and need to be rectified.
  - 4.5.4. Execute the import file in Message Center.
  - 4.5.5. Review the import reconciliation report. If any samples are labeled as "problem", they did not import and need to be addressed.
  - 4.5.6. Open Specimen Manager to ensure the samples have been added to the database.
- 4.6. Comparing data interpretation between the vendor lab and in-house:
  - 4.6.1. If profiles from the vendor lab do not concur with the in-house profile, they will be rejected at import (preferences in CODIS ADMIN – must be set to "reject", not "overwrite").
  - 4.6.2. If a profile is NOT rejected, it is verified as matching between the two separate analyses.
  - 4.6.3. Any profiles that ARE rejected need to be noted and addressed as to why the profiles are different, determine which is the correct profile, and see if this can be addressed in future analyses.

### Non-CMF data entry:

- 4.7. Open Specimen Manager and click "STR Data Entry" icon.
- 4.8. Enter the sample number for the Specimen ID, including the ME prefix and preceding zeros.
- 4.9. Select "Convicted Offender" from the pull-down list for Specimen Category.



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- 4.10. The alleles for each locus must be entered under “Reading #1” and under “Reading #2”. This can be done by one qualified DNA Analyst (which will need to be verified) or by a qualified DNA Analyst and a second scientist supervised by the qualified DNA Analyst sitting together and verifying the alleles as they are entered.
- 4.11. Verify the alleles were keyed correctly under “Final Reading”. Address any errors.
- 4.12. Click Save and Close if done; or click Save and Clear to enter more profiles.
- 4.13. When done entering, scroll through the Specimen Manager, right-click on the sample(s) just entered, select “Print Report” and “Inventory Report with Readings” to print the samples entered. These should be stored in the folder.
- 4.14. Important: if two DNA Analysts were not working together during data entry, the alleles need to be verified by printing out the profiles from Specimen Manager and comparing them to the DNA Profile Summary sheets in the folder.

### **5. Uploading Convicted Offender Profiles to NDIS**

- 5.1. In-house DNA profiles may be marked for upload to NDIS as soon as they are entered.
- 5.2. DNA profiles created from Outsourced samples may be marked for upload to NDIS only after a minimum of 5% of the DNA profiles sent to the vendor lab have been verified (as QC or Reanalysis samples).
- 5.3. To mark profiles for upload, click on the relevant profile(s) and right click. If the sample is marked for upload, the unmark icon will be available (the mark icon will be grayed out). If the sample is not marked for upload, the mark icon will be available (the unmark icon will be grayed out).
- 5.4. All of the marked profiles will automatically upload to NDIS on Maine’s designated day of the week for uploading.

### **6. Quality Control Checks of Uploaded Profiles**

- 6.1. When a manageable number of offender profiles have been uploaded to CODIS, a Quality Control Batch of 5% to 10% of the samples need to be QC Checked by repeating the DNA profiling and comparing these to the previously uploaded profiles.
- 6.2. Using the Fusion Direct Amp method or manual extraction/quantitation/amplification methods, at least 5% (typically 10%) of recently uploaded offender samples need to be DNA profiled a second time.
- 6.3. The QC Batch is Technically Reviewed and then uploaded to CODIS. The Upload Report should be printed to document whether the newly uploaded profiles are consistent with the originally uploaded profiles. The Upload Report documents the comparison of the reanalyzed samples to the database profiles and if there were any changes.
- 6.4. If any samples are found to be inconsistent with the first upload, the cause of the mismatch needs to be investigated and corrected. If the cause is systemic, further QC checks may be required to confirm the integrity of recently uploaded profiles.



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- 6.5. The Amelogenin locus for the QC Batch (or, optionally, all of the recently uploaded samples) should be compared to the Sex listed in the CODIS Sample Manager (M, F, U). If any Amelogenin loci are found to be inconsistent with the Sex listed in the CODIS Sample Manager, the cause of the mismatch needs to be investigated and corrected.

### **7. Local Database – Automatic Searches**

- 7.1. Autosearcher should be run once a week, preferably before the weekly NDIS upload is done (currently on Tuesdays).
- 7.2. To search all appropriate profile categories against one another, launch Autosearcher by double clicking on the tab within the Analyst Workbench, under the Autosearcher tab, click on Perform Search.
- 7.3. Autosearcher results are sent to Message Manager. Open Message Manager by double clicking on the tab in the Analyst Workbench.
- 7.4. Evaluate the appropriate search results file under the Autosearcher Reports tab.
- 7.5. Matches are viewed in Match Manager (new matches are in red). Open each match by double-clicking and then printing the State Match Detail Report.
- 7.6. See 'CODIS Match Confirmation' protocol for guidelines and instructions on the verification and dissemination of CODIS matches.
- 7.7. Set the appropriate disposition for the 'match' in Match Manager.
- 7.8. If necessary, create a CODIS hit request in JusticeTrax and notify the DNA Analyst that a CODIS Hit report needs to be written.

### **8. Manually Searching and Uploading Offender Profiles**

- 8.1. Individual offender profiles and batches of offender profiles may be forced to perform a search sooner by scheduling the Autosearcher to run that evening. Any candidate hits from the autosearched profiles can then be reviewed the next day.
- 8.2. Individual offender profiles and batches of offender profiles may be forced to upload to the National DNA Index sooner by scheduling an Upload to run that evening. Any candidate hits from the uploaded profiles can then be reviewed the next day
- 8.3. **DNA profiles in the Convicted Offender database should not be used as known references. Manual searches or bench comparisons of individual convicted offender profiles with casework are not the intended purpose of CODIS.**
- 8.4. **DNA profiles of specific individuals should not be pulled for direct comparison to casework profiles. Matches between casework and CO should be obtained by searching the casework profile against the entire SDIS Database.**



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### **9. National Database – Upload Searches**

- 9.1. Casework and convicted offender DNA profiles are searched by the FBI approximately once a week following an NDIS upload. NDIS matches will be reported to the laboratory by a Match Message in the Message Center program.
- 9.2. Double click on the Message Center within the Analyst Workbench by double clicking on the tab and clicking on the Match tab to check for any new match messages (which will appear in red).
- 9.3. Double-click any red match message to execute (run) the message.
- 9.4. Several reports will appear. View and print the National Match Detail Reports.
- 9.5. See ‘CODIS Match Confirmation and Reporting’ for guidelines and instructions on the verification and dissemination of CODIS matches.
- 9.6. Set the appropriate disposition for the ‘match’ in Match Manager.
- 9.7. NDIS also checks for “moderate stringency” matches (only one allele needs to match at each locus). These search parameters are employed to prevent non-match results due to allele dropout and need to be reviewed carefully with this in mind, but these matches will often turn out to be “No Match”.
- 9.8. If necessary, create a CODIS hit request in JusticeTrax and notify the DNA Analyst that a CODIS Hit report needs to be written.

### **10. Maine Law: Title 25, Chapter 194: DNA Data Base and Data Bank Act**

#### **25 §1574. BIOLOGICAL SAMPLE REQUIRED FOR DNA ANALYSIS UPON CONVICTION OR ADJUDICATION**

**1. Conviction subsequent to effective date.** A person convicted, on or after January 1, 1996 and before October 1, 2001, of a crime listed in subsection 4 or a person convicted on or after October 1, 2001, of a crime listed in subsection 5 shall submit to having a DNA sample taken and at the time of sentencing the court shall enter an order directing that the DNA sample be taken. If the convicted person's sentence includes a straight term of imprisonment or a split term of imprisonment, the DNA sample may be taken at any time following the commencement of the straight term or initial unsuspended portion of the term of imprisonment. If the convicted person's sentence includes a period of probation but no immediate imprisonment, the DNA sample may be taken at any time following commencement of the probation period as directed by the probation officer. If the convicted person's sentence includes a period of probation, the court may attach the duty to submit to having a DNA sample taken as a condition of probation.

[ 2003, c. 393, §3 (AMD).]

**2. Conviction prior to effective date.** A person convicted and incarcerated prior to January 1, 1996, as a result of a conviction for a crime listed in subsection 4, must have a DNA



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sample taken before release from the corrections system.

[ 2003, c. 393, §3 (AMD).]

### 3. Juvenile offenders.

[ 2001, c. 325, §3 (RP).]

**3-A. Juveniles.** A juvenile adjudicated on or after October 1, 2003 of a juvenile crime that, if committed by an adult, would constitute an offense listed in subsection 6 is subject to the requirements of this section.

[ 2003, c. 393, §3 (NEW).]

**4. Applicable offenses for persons convicted after January 1, 1996 and before October 1, 2001.** This section applies to a person convicted after January 1, 1996 and before October 1, 2001 of one or more of the following offenses or an attempt of one or more of the following offenses:

- A. Murder or criminal homicide in the first or 2nd degree; [1997, c. 608, §3 (AMD).]
- B. Felony murder; [1995, c. 457, §1 (NEW).]
- C. Manslaughter; [1995, c. 457, §1 (NEW).]
- D. Aggravated assault; [1995, c. 457, §1 (NEW).]
- D-1. Elevated aggravated assault; [1997, c. 608, §3 (NEW).]
- E. Gross sexual assault, including that formerly denominated as gross sexual misconduct; [1997, c. 608, §3 (AMD).]
- E-1. Rape; [1997, c. 608, §3 (NEW).]
- F. Sexual abuse of a minor; [1995, c. 457, §1 (NEW).]
- G. Unlawful sexual contact; [1995, c. 457, §1 (NEW).]
- G-1. Visual sexual aggression against a child; [1997, c. 608, §3 (NEW).]
- G-2. Sexual misconduct with a child under 14 years of age; [1997, c. 608, §3 (NEW).]
- H. Kidnapping; [1995, c. 457, §1 (NEW).]
- I. Criminal restraint; [1995, c. 457, §1 (NEW).]
- J. Burglary; [1995, c. 457, §1 (NEW).]
- K. Robbery; [1995, c. 457, §1 (NEW).]
- L. Arson; [1995, c. 457, §1 (NEW).]
- M. Aggravated criminal mischief; or [1995, c. 457, §1 (NEW).]
- N. Any lesser included offense of any crime identified in paragraphs A to M if the greater offense is initially charged. "Lesser included offense" has the same meaning as in Title 17-A, section 13-A. [1995, c. 457, §1 (NEW).]  
[ 2003, c. 1, §23 (COR).]

**5. Applicable offenses for persons convicted on or after October 1, 2001.** Except as provided in paragraph G-1, this section applies to a person convicted on or after October 1, 2001 of one or more of the following offenses or an attempt of one or more of the following offenses:

- A. Murder; [2001, c. 325, §5 (NEW).]
- B. A Class A, B or C crime; [2001, c. 325, §5 (NEW).]



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- C. Sexual abuse of a minor; [2001, c. 325, §5 (NEW).]
- D. Unlawful sexual contact; [2001, c. 325, §5 (NEW).]
- E. Visual sexual aggression against a child; [2001, c. 325, §5 (NEW).]
- F. Sexual contact with a child under 14 years of age; [2001, c. 325, §5 (NEW).]
- G. Solicitation of a child by a computer to commit a prohibited act; [2011, c. 597, §5 (AMD).]
- G-1. Solicitation of a child to commit a prohibited act on or after October 1, 2012; or [2011, c. 597, §5 (NEW).]
- H. Any lesser included offense of any crime identified in paragraphs A to G if the greater offense is initially charged. "Lesser included offense" has the same meaning as in Title 17-A, section 13-A. [2001, c. 325, §5 (NEW).]  
[ 2011, c. 597, §5 (AMD).]

**6. Applicable offenses for juveniles adjudicated on or after October 1, 2003.** This section applies to a juvenile adjudicated on or after October 1, 2003 of committing a juvenile crime that, if committed by an adult, would constitute one or more of the following offenses or an attempt of one or more of the following offenses:

- A. Murder; [2003, c. 393, §3 (NEW).]
- B. Felony murder; [2003, c. 393, §3 (NEW).]
- C. Manslaughter; [2003, c. 393, §3 (NEW).]
- D. Aggravated assault; [2003, c. 393, §3 (NEW).]
- E. Elevated aggravated assault; [2003, c. 393, §3 (NEW).]
- F. Gross sexual assault; [2003, c. 393, §3 (NEW).]
- G. Unlawful sexual contact; [2003, c. 393, §3 (NEW).]
- H. Kidnapping; [2003, c. 393, §3 (NEW).]
- I. Criminal restraint; [2003, c. 393, §3 (NEW).]
- J. Burglary; [2003, c. 393, §3 (NEW).]
- K. Robbery; [2003, c. 393, §3 (NEW).]
- L. Arson; [2003, c. 393, §3 (NEW).]
- M. Aggravated criminal mischief; or [2003, c. 393, §3 (NEW).]
- N. Causing a catastrophe. [2003, c. 393, §3 (NEW).]  
[ 2003, c. 1, §24 (COR) .]

SECTION HISTORY 1995, c. 457, §1 (NEW). 1997, c. 608, §§2,3 (AMD). 2001, c. 325, §§1-5 (AMD). RR 2003, c. 1, §§23,24 (COR). 2003, c. 393, §3 (AMD). 2011, c. 597, §5 (AMD).