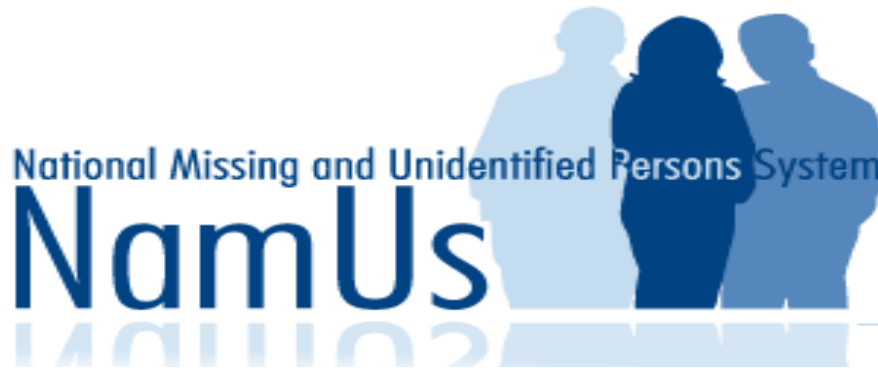


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Best Practices for the Identification of Unidentified Decedents

With NIJ grant funds, The National Center for Forensic Science (NCFS) at the University of Central Florida with the assistance of dedicated subject matter experts, developed & deliverable this product.

July 2010

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A. BACKGROUND

The National Center for Forensic Science, a program of the University of Central Florida (Orlando, Florida), received an award from the National Institute of Justice in 2004 in support of the project "Focus Group on Using Technology to Assist Medical Examiners and Coroners in the Identification of Human Remains."

According to the National Center for Missing and Exploited Children, "In the United States, it has been estimated that there are more than 40,000 unidentified deceased remains lying in potters' fields and morgues." Thousands of these individuals are victims of homicides, yet little can be done to identify them or solve the crime because the necessary details are not contained in databases. In addition, even when a crime has not occurred, numerous families have never been able to locate a missing family member that is among these 40,000 decedents because data are missing on these persons as well.

NCFS used the award to organize and coordinate four (4) Focus Groups that brought Medical Examiners, Coroners and other human identification experts/investigators to a point of general agreement about several issues related to the unidentified dead and missing persons (e.g., access, scope, accessibility). NCFS also coordinated flight arrangements/hotel accommodations and meeting space for the National Missing and Unidentified Persons System (NamUs) meeting, hosted by NIJ in April 26-27, 2007 in Washington, D. C. to review issues related to the identification of the unidentified and the missing. Although many databases exist and are not necessarily related, interoperable, or appropriately searchable, there has been a trend of limited or regional success when public access to unidentified person databases is provided. Still, existing databases are hindered by limited system access, problems with data quality, and lack of centralization.

While the National Crime Information Center (NCIC) was designed as a national repository for law enforcement agencies to enter missing and unidentified person data, at present the system does not allow most medical examiners and coroners direct access to the system. Meeting participants recommended the creation and maintenance of an online database to facilitate the identification of unidentified decedents. The current system, known as the National Missing and Unidentified System and funded by NIJ award 2007-DN-BX-K237, represents the evolution of a prototype system initially developed by Dr. Steven Clark and Dr. Randy Hanzlick.

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The primary **goal** of the project is addressing the various issues/problems related to the process of identifying the unidentified dead and recommending viable solutions (both technical and cooperative) to meet these challenges. The overall **objectives** of the project include 1) updating the original UDRS system, 2) the creation of a NamUs Advisory Board, 3) the establishment of policies and procedures, 4) the implementation of quality assurance protocols, 5) the development and integration of a missing persons component to the NamUs system, and 6) promoting the secure exchange of information between NamUs and the National Crime Information Center's (NCIC) system.

NIJ in 2007 authorized NCFS to subcontract the maintenance and modification of the NamUs system to Occupation Research and Assessment, Inc. (ORA, Inc.) under the supervision of its president, Dr. Steve Clark (President). ORA, Inc. through 2008 and the first quarter of 2009 made numerous modifications to the NamUs system, as well as importing unidentified decedent information from many local, state, and regional search engines. ORA, Inc. was concurrently working with NIJ and the National Forensic Science Technology Center to create and integrate a missing person's component within the NamUs system. NCFS and ORA, Inc. released a policies and procedures manual for the NamUs System, while Dr. Hanzlick developed quality assurance protocols. Currently, NCIC data is manually entered into the NamUs system while NIJ and NCIC continue to discuss options for secure-yet-safe exchange of data between the two systems.

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C. NAMUS BEST PRACTICES

In investigating unidentified human remains cases, it is of utmost importance that all agencies follow Best Practices standards developed by working groups of experts in the field, to ensure that proper and necessary steps are taken to aid in identification.

[**Note** – see the “**Hot, Warm, and Cold Checklist**” in the “**Appendices**” section]

The Time Process

Experience has shown that cases involving unidentified human remains pass through three periods: the **Hot, Warm, and Cold** periods.

[**Note** – see examples of various “**Decedent Identification Worksheets**” in the “**Appendices**” section]

1. The “Hot” Period

For the Medical Examiner/Coroner, this period represents that interval of time where certain data can easily be collected from the deceased by careful review, observation, and documentation. It includes, but is not limited to, the proper use of photography, proper fingerprint techniques, inventory, description of clothing and personal affects, scars, tattoos dental and full body x-rays/radiographs, the collection of appropriate material for DNA testing, and accurate data entry.

a. Identification Photography

- 1) Where appropriate, clean full-faced color photographs should be taken of the deceased as soon as practical.
- 2) These facial photos should include eyeglasses placed on the deceased’s face with the eyes open if the individual is believed to have worn them.
- 3) Other photographs that should be taken for identification purposes include tattoos, scars, deformities, body piercings, bite marks, pattern injuries, clothing, or any other item related to the case that could help with the identification.
- 4) A complete set of full body photographs should also be taken showing the anterior, posterior, and lateral portions of the deceased body.
- 5) If the body has been skeletonized, make certain that all bones with any unique features appear in the photographs.

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- 6) All of the above should always include a ruler, which clearly shows measurements of the items in the photographs.

b. Fingerprints

- 1) On two (2) standard ten-print cards, two (2) full sets of fingerprints should be taken. One set must always remain in the Medical Examiner/Coroner's case file and the other set provided to the investigating law enforcement agency for submission to the National Criminal Information Center¹, local Automated Fingerprint Identification Systems,² and the Integrated Automated Fingerprint Identification System.³

[Note – see the “FBI Fingerprint Card” in the “Appendices” section]

- 2) Three (3) sets of the deceased palm prints should also be taken and distributed as outlined above.
- 3) Under certain conditions, adhesive strips may be used to obtain the fingerprints, and then placed on the standard ten-print card.
- 4) Utilize only skilled fingerprint technicians to take finger and palm prints from a decomposing body.
- 5) Before distributing the fingerprint cards, at least one qualified fingerprint examiner should review them to ensure that there is enough detail to permit a classification of the prints.
- 6) If a fingerprint obtained by detached gloving cannot be identified as to proper placement on the card, it should be noted on the card itself.
- 7) Every effort should be made to obtain fingerprints and palm prints no matter how badly damaged or decomposed the hands are.
- 8) In some cases, it may be necessary to remove surgically the fingers or skin. This should only be done with the Medical Examiner/Coroner's approval.

¹ NCIC (<http://www.fbi.gov/hq/cjisd/ncic.htm>).

² AFIS (e.g., the State of Connecticut's Department of Public Safety's "Automated Fingerprint Identification System" (<http://www.ct.gov/dps/cwp/view.asp?a=2154&q=294420>)).

³ IAFIS (<http://www.fbi.gov/hq/cjisd/iafis.htm>).

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- 9) Postmortem fingerprints may be compared with latent prints from known personal effects and papers of missing person(s) to accomplish identification when prints are not available from standard databases.
- 10) Once the fingerprint search has proved to be negative and with no mistakes made, a Forensic Odontologist should be contacted to initiate the dental examination.

c. Inventory and Documentation of Clothing and Personal Effects

- 1) As the above steps are being taken, the Medical Examiner/Coroner should ensure that all personnel handling clothing and personal effects are wearing gloves to avoid DNA contamination.
- 2) Carefully examine, document, and photograph all clothing and personal effects associated with the deceased that may provide evidence leading to the identification of the deceased. If recovered with skeletal remains, clothing measurements can be used to estimate the weight/size of the decedent.⁴
- 3) Make certain that all personal effects belonging to the deceased that have been collected by law enforcement are brought to the Medical Examiner/Coroner for examination and review.
- 4) Search for laundry marks, manufacturer's labels, product bar codes, and sizes of clothing and shoes that may assist in the identity phase of the identification.
- 5) Examine jewelry for engravings and manufactures serial identification numbers inside and outside watch cases. Consult with a watchmaker to find any watchmaker repair codes inside the watch (since codes identify the watchmaker).
- 6) Make certain during this period of review that no personal effects, jewelry, or clothing are washed or cleaned without the approval of the DNA technician. Such approval should appear on the property receipt accompanying the evidence.

[Note – see the “**Personal Effects/Clothing Receipt**” form in the “**Appendices**” section]

d. X-Rays/Radiographs

- 1) If the early investigation suggests the remains will be unidentified, head and torso x-rays/radiographs should be taken prior to the autopsy.

⁴ Gioello, Debbie Ann, *Figure Types and Size Ranges*, Fairchild Books, June 1979, ISBN-10: 0870052918.

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- 2) If there is no identification made after the above steps have been taken, then the entire body should be x-rayed/radio graphed to determine if there are unique or distinctive features within the body (e.g., broken bones, hip replacements, dental implants, pacemakers, etc.). All of these should be duly noted. Where manufacturers names, models and serial numbers are found, those companies should be contacted for information as to whom they were shipped so that there can be further follow up during this phase.

e. DNA⁵

- 1) DNA samples need to be taken early in the investigation to avoid degradation and or contamination.
- 2) Associated items of the victim should also be considered as a source of DNA (e.g., clothing, jewelry, eye glasses, etc.) Again, gloves should always be worn when handling these items and under no circumstances should these items be washed or cleaned until the DNA process is complete.
- 3) Obtain and properly store all DNA samples from remains for future profiling.
- 4) Obtain DNA reference samples for profiling from possible relatives for testing and matches.
- 5) For decomposed, burned, or skeletonized remains, tooth, bone, or fingernail samples should be considered.
- 6) Dried blood should be collected for DNA extraction.
- 7) Follow CODIS-NMPDD procedures (National Missing Persons DNA Database).

[**Note** – see “**The National Missing Persona DNA Database**” in the “**Appendices**” section]

- 8) Retain case information and DNA samples indefinitely.

⁵ Lessons Learned From 9/11: DNA Identification in Mass Fatality Incidents (President’s DNA Initiative), September 2006 ([HTTP://WWW.NCJRS.GOV/PDFFILES1/NIJ/ 214781.PDF](http://www.ncjrs.gov/pdffiles1/nij/214781.pdf)).

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f. The Media

- 1) It is essential for the Medical Examiner/Coroner to maintain a good working relationship with all aspects of the media as they can assist in providing information to the public that may aid in the identification.
- 2) Provide and disseminate any information (including any unique dental features) to the media that will aid in identifying the unknown remains.
- 3) Obtain facial approximations, sketches, computer generated images, and clay models of the head to disseminate to the media, Websites and other outlets.
- 4) In cooperation and coordination with law enforcement, prepare press releases and interviews for the public that will not jeopardize any criminal investigation.
- 5) Designate a single person within the Medical Examiner/Coroner's office who will interface with the media, e.g., a public information officer, the Medical Examiner/Coroner, or other officials with experience in dealing with the media.
- 6) Post all press releases concerning unidentified remains on the Medical Examiner/Coroners' Websites as well as the NamUs site.
- 7) Make certain that the media and Website information is continually reviewed and updated when necessary.
- 8) Take steps to insure that all public inquiries regarding unidentified remains are properly and fully addressed.
- 9) When the Medical Examiner/Coroner has performed all of the above procedures and no identification has been made of the remains, the Warm Period begins.

2. The "Warm" Period

a. Fingerprints

- 1) Resubmit all finger and palm prints to the original investigating agency for additional searches. In this time phase, specifically request that copies of the prints be submitted to agencies other than the Federal Bureau of Investigation (e.g., the Department of Defense, Immigration and Naturalization Service, U.S. Secret Service, U.S. Postal Inspection Service, etc.).

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- 2) Provide, where possible and feasible, digital photos of the prints for more rapid transfer and analysis.

b. Odontology

- 1) Using the services of a Forensic Odontologist, have him/her:
- 2) Perform a complete dental exam, which includes postmortem x-rays/radiographs, photographs, and charting forms. This should be done as a screening tool to assess the presence of dental features that may aid in the identification.
- 3) Prepare the NCIC dental form using its current coding systems and procedures (see appendices).
- 4) Ensure that the original of the completed dental form has been placed in the case file and a copy is sent to the lead investigative agency for entry into the various systems.
- 5) The original dental x-rays/radiographs and record should be located by the Medical Examiner/Coroner or investigator and retained in the Medical Examiner/Coroner's file.
- 6) Request a confirmation from the investigative agency, in writing, showing that the dental form has been sent to NCIC and NamUs/UDRS. This confirmation should also be placed in the Medical Examiner/Coroner's file.

[**Note** – see the “**Appendices**” section for various forms and protocols associated with dental identification processes and procedures]

c. Law Enforcement

- 1) The Medical Examiner/Coroner must maintain a continual high degree of communication with the lead investigator in the police agency concerning any information that may lead to the identification of the unidentified remains.
- 2) Periodic meetings must be planned by the Medical Examiner/Coroner with law enforcement agencies to review continually the case file as to what steps, if any, can be taken to aid in the identification.
- 3) Ensure that all data provided for entry into NCIC and NamUs/UDRS is current and accurate. In addition, when the Medical Examiner/Coroner obtains new information, it too should be entered into the NCIC system. Obtain a copy of the updated NCIC entry for the Medical Examiner/Coroner's case file.

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- 4) The Medical Examiner/Coroner should advise law enforcement of what, if any, additional investigative steps should be taken to aid in the identification.
- 5) The Medical Examiner/Coroner must recommend to law enforcement agencies that they have procedures in place to ensure that all information received concerning unidentified remains is provided to the Medical Examiner/Coroner

d. Anthropology

- 1) A qualified forensic anthropologist should examine and inventory all skeletal remains.
- 2) The forensic anthropologist should identify additional procedures as well as other examinations, which would aid in establishing age, race, sex, and point out peculiar or unusual aspect of skeletal remains in close cooperation with the Medical Examiner/Coroner.
- 3) The anthropologist, working closely with the pathologist, should establish procedures to avoid any damage or destruction of the remains.
- 4) The Medical Examiner/Coroner should make certain that skeletal remains are never boiled or bleached. When the bones are to be defleshed, the anthropologist in consultation with the pathologist and DNA expert should establish the proper procedure.
- 5) Under no circumstances should any unidentified remains be cremated or buried at sea. There is no issue with cremation or burial at sea if all proper samples, photos, fingerprints, DNA etc. are collected and retention policies are in place. However, if the unidentified remains have not been preserved, under no circumstance should any remains be cremated or buried at sea.
- 6) Proper storage of the remains is the responsibility of the Medical Examiner/Coroner.
- 7) The anthropologist is responsible for completing two (2) NCIC forms containing the proper description of the remains, one of which should be placed in the Medical Examiner/Coroner's file and the other sent to the lead investigating agency.
- 8) Request a receipt from the agency entering the data, to confirm its entry into NCIC.

[**Note** – see the various forms related to **skeletal identification** in the "**Appendices**" section]

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e. Recommended Data Entry Procedure

1. The Medical Examiner/Coroner should, **in cooperation** with the proper law enforcement agency:
2. Request that those agencies entering the data related to unidentified remains include the NamUs-UID system, the National Center for Missing Adults⁶, National Center for Missing and Exploited Children⁷, the Doe Network⁸, and other related organizations interested in missing persons and unidentified remains.
3. Check the NCIC printout for data accuracy and completeness. Verify that the scars, marks, tattoos (SMT) and other codes are also properly entered.
4. Again, resubmit fingerprints periodically. As experience has shown, the prints that previously had no matches have produced a match upon resubmission.
5. Validate and correct entries in the NamUs-UID system or other unidentified decedent Websites.
6. Provide information for families on how best to search for unidentified decedents and missing persons in addition to providing tips for searching UID systems and entering missing person data.
7. Check the NCIC number entry on the unidentified decedent NamUs-UID Website to verify that the case has been entered into NCIC, and that information is consistent in the two systems, or ensure that NCIC information is obtained and entered if no NCIC number is listed on the NamUs Website (www.namus.gov)
8. Maintain a continual close contact with law enforcement agencies concerning identification procedures.
9. Assist the public and professionals with inquiries regarding possible matches.
10. Ensure that solved/cleared cases have been removed from applicable database
11. Keep an exclusion list with case information, exclusion method and the date and signature of the person performing the exclusion.

⁶ NCMA (<http://www.theyaremissed.org/ncma>).

⁷ NCMEC (<http://www.ncmec.org>).

⁸ <http://www.doenetwork.org>.

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3. The "Cold" Period

This period continues the earlier efforts of investigation. All information and data that can lead to identification is rechecked. Best Practices should include, but not be limited to, updating the various Websites, reviewing the case file for missing or additional information, resubmitting the fingerprints to law enforcement agencies, and searching for new applications or technologies that may aid in the investigation.

a. DNA Testing and Updating

- 1) Review, update, and resubmit information into the NamUs-UP Website and other Websites such as NCIC, Doe Network, NCMEC, etc.
- 2) Resubmit all fingerprints.
- 3) Send DNA samples to the FBI or other CODIS laboratory for analysis. Obtain DNA reference samples from the victim's environment or possible relatives, for submission to the FBI – NMPDD (National Missing Person DNA Database) laboratory.
- 4) Carefully select long-term storage facilities for the remains. A final review with the investigating police agency should take place before disposition of remains.
- 5) "Again, cremation or burial at sea should never be permitted for any unidentified remains. "
- 6) Unless identifiable remains have been preserved and proper samples, photos, fingerprints, DNA, etc. are collected and retention policies are in place, cremation or burial of unidentified remains at sea should never be permitted.

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D. APPENDICES

1. **"Hot, Warm, and Cold Checklist"**
2. **"Decedent Identification Worksheets"** (examples)
3. **"FBI Fingerprint Card"**
4. **"Personal Effects/Clothing Receipt"**
5. **"The National Missing Persona DNA Database"**
6. **Sample Dental Checklists/Forms**
7. **Skeletal Identification Forms**

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APPENDIX 1. SAMPLE CHECKLISTS AND FORMS

Hot, Warm, Cold Period Checklist

Case Name _____ Case Number _____ Date Found _____ Est. DOD _____
 Contact Person _____ Jurisdiction _____ Investigator _____ Phone _____ Fax _____

HOT PERIOD	date	initial	date	initial	date	initial	HOT PERIOD	date	initial	date	initial	date	initial
PHOTOS:							DNA:						
Full-face color photos for identification (with and w/o glasses)							Samples (spl.): blood, tissue						
Full-body autopsy photos: anterior, posterior, lateral							Skeleton spls: bone, tooth or fingernails						
Skeletonized: all bones & unique features							Spls. from personal effects						
Unique features: tattoos, scars, piercings, bite marks, deformities, pattern injuries							Spls. for reference from putative victim environment & putative relatives						
Personal effects: Clothing & jewelry													
FINGERPRINTS:							X-RAYS:						
2 full sets – finger							Before autopsy X-ray head & torso						
2 full sets – palm							If no ID then X-ray entire body for healed fractures, implants (SN & model)						
Reviewed							Other unique morphology						
PERSONAL EFFECTS:							MEDIA:						
Inventory all							Press release						
Check manufacturer labels, barcodes, laundry marks							Facial sketch or image to media, websites						
Clothing/shoe sizes							Notify Clearing Houses						
Jewelry engravings & serial numbers							Review & update media and website info						
Examine all for DNA													

WARM PERIOD	date	initial	date	initial	date	initial	WARM PERIOD	date	initial	date	initial	date	initial
<i>FINGERPRINTS:</i>							<i>LAW ENFORCEMENT:</i>						
Resubmit all prints: Sent to FBI, DOD, INS, SS, Postal Service, etc.							Meetings Calls Correspondence						
<i>DENTAL:</i>							<i>ANTHROPOLOGY:</i>						
Postmortem X-rays, Photos and charts							Inventory all skeletal remains						
Send NCIC form to investigative agency							Examine for age, sex, ethnicity, etc.						
Get confirmation of date sent to NCIC							Complete 2 sets of NCIC forms (1 for Invest. Agency)						
							Get confirmation of date sent to NCIC						
<i>DATA ENTRY:</i>													
Enter into NamUs-UP system. Check that NCIC# is correct in NamUs													
Review for accuracy and update all websites													
Remove solved cases from applicable databases & websites													

COLD PERIOD	date	initial	date	initial	date	initial	date	initial	date	initial	date	initial	date	initial
Submit DNA samples to FBI properly preserve remains and ensure safe storage														
Submit DNA reference samples to FBI														
Resubmit fingerprints periodically														
Review, update resubmit data to UDRS and other websites														
If not done previously, obtain facial sketches, clay models, computer images for media, websites, etc.														

Appendix 2

Decedent Identification Worksheet

Name _____ Case #: _____

Police Jurisdiction: _____ Investigator: _____ Phone #: _____

Anthropometrics: Height: _____ Weight: _____ Eye Color: _____ Hair Color: _____

Distinguishing Features (tattoos, teeth, previous surgeries, previous injuries):

Autopsy Results: Height: _____ Weight: _____ Eye Color: _____ Hair Color: _____

	Antemortem	Postmortem	Results
Visual			
Fingerprints			
Dental			
X-rays			
DNA			
NCIC			
Method of Identification			

Identification Fact Sheet

(your letterhead here)

TO: Investigators, Funeral Directors and Families

FROM: Office of the Chief Medical Examiner

SUBJECT: Identification Fact Sheet

PLEASE: **Investigators should begin acquiring ALL of the items listed simultaneously upon notification that visual identification is not feasible.**

The following information is required for the positive identification of burned, decomposed or otherwise unidentifiable remains:

- Fingerprints from local, state and federal sources
- The entire dental record to include
 - Charts and billing records
 - X-rays
 - Molds
 - Denture information
- Latent fingerprints from personal items if none on file in Central Records
- Medical records to include
 - X-rays (original preferred) and X-ray reports
 - History and physical exams, operative reports and consultations
 - All laboratory work
- Toothbrush, hairbrush for DNA (takes the longest time). Consult with pathologist and receipt to same.

Remains cannot be released until positive identification by one or more of the above methods are completed.

The investigator should Fax to the Medical Examiner at (number) as soon as possible the following information on the missing person, to include:

- Name
- Address
- Social Security Number
- Date of birth
- Missing person report

All records and items being requested should be **FAXED, HAND DELIVERED** or sent by **next-day PRIORITY MAIL, FEDERAL EXPRESS, or other overnight express company**. Thank you.

Direct inquiries to _____ Telephone number _____

Next Of Kin Form

(your letterhead here)

Date: _____

To: _____

From: Office of the Chief Medical Examiner

Re: _____ **Date of death:** _____

Please complete and return this form as soon as possible.

We have made diligent effort to locate next of kin for the decedent listed above and have located no next of kin as of this date.

Investigating Officer

Date

Unidentified Decedent Checklist

Case Name _____ Case Number _____ Date Found _____ Est. DOD _____
 Jurisdiction _____ Investigator _____ Phone _____ Fax _____

Activity Done

Date & Initial

- | | |
|--|--------------------------------|
| 1. Full face photo | _____ |
| 2. Photography, body | _____ |
| 3. Photography, clothing | _____ |
| 4. Hair exemplars
other) | _____ (head, pubic, auxiliary, |
| 5. DNA blood card/bone/clothing sample | _____ |
| 6. Full body radiographs for
ID features, age, sex

Report of radiology review | _____
_____ |
| 7. Fingerprints including palms
(Footprints are optional)

AFIS search report received
FBI search report received | _____

_____ |
| 8. OCME Dental chart
NCIC Dental chart | _____
_____ |
| 9. Copies of reports:
Missing persons was checked
AFIS entry and results
FBI entry and results | _____

_____ |
| 10. Copy of NCIC Unidentified Person File
with dental entry and other codes
Copy of NCIC Unidentified Person File
entry | _____
_____ |
| 11. Exclusion list | _____ |
| 12. Anthropology consultation
Anthropology report | _____
_____ |
| 13. Final disposition of remains _____ | Date _____ |

By _____ M.D

Appendix 3

FBI Fingerprint Card

APPLICANT		LEAVE BLANK		TYPE OR PRINT ALL INFORMATION IN BLACK				LEAVE BLANK	
				LAST NAME <u>NAM</u>	FIRST NAME	MIDDLE NAME	FBI		
SIGNATURE OF PERSON FINGERPRINTED		ALIASES <u>AKA</u>		O R I				DATE OF BIRTH <u>DOB</u>	
RESIDENCE OF PERSON FINGERPRINTED								PLACE OF BIRTH <u>POB</u>	
DATE	SIGNATURE OF OFFICIAL TAKING FINGERPRINTS		CITIZENSHIP <u>CTZ</u>	SEX	RACE	HGT	WGT	EYES	HAIR
EMPLOYER AND ADDRESS		YOUR NO. <u>OCA</u>		LEAVE BLANK					
REASON FINGERPRINTED		FBI NO. <u>FBI</u>		CLASS _____					
		ARMED FORCES NO <u>MNU</u>		REF. _____					
		SOCIAL SECURITY NO <u>SOC</u>							
		MISCELLANEOUS NO. <u>MNU</u>							
1. R. THUMB		2. R. INDEX		3. R. MIDDLE		4. R. RING		5. R. LITTLE	
6. L. THUMB		7. L. INDEX		8. L. MIDDLE		9. L. RING		10. L. LITTLE	
LEFT FOUR FINGERS TAKEN SIMULTANEOUSLY				L. THUMB	R. THUMB	RIGHT FOUR FINGERS TAKEN SIMULTANEOUSLY			

Appendix 4

Personal Effects/Clothing Receipt

Name of Decedent _____ Case # _____ Age _____ Race _____ Sex _____

CLOTHING:

- | | | |
|---|--------------------------------------|--|
| <input type="checkbox"/> Bathrobe | <input type="checkbox"/> Jacket | <input type="checkbox"/> Sweater |
| <input type="checkbox"/> Belt | <input type="checkbox"/> Luggage | <input type="checkbox"/> T-shirt |
| <input type="checkbox"/> Blouse | <input type="checkbox"/> Nightgown | <input type="checkbox"/> Tie |
| <input type="checkbox"/> Bra | <input type="checkbox"/> Pajamas | <input type="checkbox"/> Trousers/Slacks/Jeans |
| <input type="checkbox"/> Coat | <input type="checkbox"/> Shirt | <input type="checkbox"/> Underwear |
| <input type="checkbox"/> Dress | <input type="checkbox"/> Shoes/Boots | _____ Briefs |
| <input type="checkbox"/> Girdle | <input type="checkbox"/> Shorts | _____ Boxers |
| <input type="checkbox"/> Handkerchief/Scarf | <input type="checkbox"/> Slip | _____ Panties |
| <input type="checkbox"/> Hat/Cap | <input type="checkbox"/> Slippers | <input type="checkbox"/> Other _____ |
| <input type="checkbox"/> Hose | <input type="checkbox"/> Socks | _____ |
| | | _____ |

PERSONAL EFFECTS:

- | | | |
|---|---|---------------------------------------|
| <input type="checkbox"/> None | <input type="checkbox"/> Wallet | <input type="checkbox"/> Purse |
| <input type="checkbox"/> No Money | <input type="checkbox"/> Money | <input type="checkbox"/> Bills _____ |
| <input type="checkbox"/> Bracelet(s) _____ | <input type="checkbox"/> Change _____ | <input type="checkbox"/> Checks _____ |
| <input type="checkbox"/> Cigarette Lighter _____ | <input type="checkbox"/> Key(s)/Key ring(s) _____ | |
| <input type="checkbox"/> Comb/Brush _____ | <input type="checkbox"/> Necklace(s) _____ | |
| <input type="checkbox"/> Credit Card(s) _____ | <input type="checkbox"/> Personal Papers _____ | |
| <input type="checkbox"/> Dentures _____ | <input type="checkbox"/> Pocket Knife _____ | |
| <input type="checkbox"/> Driver's license/ID Card _____ | <input type="checkbox"/> Ring(s) _____ | |
| <input type="checkbox"/> Earring(s) _____ | | |
| | <input type="checkbox"/> Watch _____ | |
| <input type="checkbox"/> Glasses _____ | <input type="checkbox"/> Other _____ | |

I received all of the clothing and personal effects listed above from the Office of the Chief Medical Examiner.

Date: _____ Time: _____

Signature or Person Receiving Material

Released by – OCME

Type or Print Name

Firm/Organization/Relationship

Form No.

White copy – File

Yellow – Funeral Home

Pink – Medical Examiner

APPENDIX 5. THE NATIONAL MISSING PERSON DNA DATABASE

Background:

In 2000, the FBI Laboratory Division began developing the National Missing Person DNA Database (NMPDD) Program for the identification of missing and unidentified persons using the FBI's Combined DNA Index System (CODIS). The NMPDD contains three indices in which missing and unidentified person DNA profiles can be entered: Biological Relatives of Missing Persons, Unidentified Human Remains and Missing Persons.



The DNA Analysis Unit 1 (nuclear DNA) and the DNA Analysis Unit 2 (mitochondrial DNA) in the FBI Laboratory, as well as the FBI Laboratory's four Regional Mitochondrial DNA Laboratories, perform DNA analysis on samples from Unidentified Human Remains and Biological Relatives of Missing Persons. The NMPDD provides investigators with an opportunity to identify missing and unidentified persons on a national level.

In addition to processing cases, the FBI Laboratory has been active in educating the forensic and law enforcement communities about the value of this program to investigators of missing person cases. Presentations detailing the purpose of the program and submission guidelines have been provided to various agencies and organizations including the National Association of Medical Examiners, International Homicide Investigators, and the FBI's Child Abduction Rapid Deployment Team. The FBI Laboratory has also participated in a series of conferences concerning the identification of missing persons sponsored by the National Institute of Justice, which targeted a diverse audience ranging from law enforcement, forensic scientists, coroners, medical examiners, and family members of the long-term missing.

Submissions:

All agencies must contact one of the FBI's Missing Person Program Managers at the FBI Laboratory before submitting samples. These cases will then be analyzed at the FBI Laboratory or at one of the FBI Laboratory's Regional Mitochondrial DNA Laboratories. It is incumbent upon the submitting agency to have the necessary completed forms and information needed for sample submission. The FBI, in cooperation with its Regional Labs, will perform the mitochondrial DNA and nuclear DNA (STR) analysis on samples. If Short Tandem Repeat (STR) profiles were developed and uploaded to NDIS by a local or state CODIS laboratory, the specimen identification number for STR profiles that were uploaded should be included in the incoming communication.

Information is needed for each specimen submitted. All samples submitted to the FBI Laboratory or Regional Laboratories must have an incoming letter describing the samples submitted. A copy of the anthropology, odontology (dental), Medical Examiner and/or Coroner reports must be included with submitted unidentified human remains samples.

Samples submitted from biological relatives of missing persons must be collected with law enforcement present at the time of collection for confirmation of personal identification of the donor and completion of the Consent and Information Form for the National Missing Person DNA Database.

Each submitted case must be packaged separately.

Please write 'EVIDENCE' near the mailing label to designate that the package has evidentiary material in it.

Unidentified human remains must be sent by a carrier that can track the package (FedEx or U.S.P.S. registered mail, for example).

All samples will be analyzed for missing person identification purposes only. Once the samples have been analyzed, the DNA profiles will be entered into the database by FBI Laboratory or Regional Laboratory staff and a Laboratory report will be sent to the contributor. A portion of the sample will be stored in the NMPDD repository for archival purposes and the remainder of the sample will be returned to the contributor.

Samples from Biological Relatives of Missing Persons

Samples from biological relatives of missing persons can be collected using the FBI Blood Cell Collection kits, which are available upon request. Prior to sample collection from a maternal and/or closely related biological relative(s) of the missing person, a Consent and Information Form must be completed (this form is included in each FBI Blood Cell Collection kit). Samples collected from a maternal and/or closely related biological relative(s) of the missing person must be blood or buccal cells. To avoid confusion, all samples should be labeled with the donor's name and the NCIC (National Crime Information Center) number or ViCAP (Violent Criminal Apprehension Program) number.

Samples recommended for submission which are known to have originated from the missing person include: blood, buccal, tissue specimens (medical biopsy samples), teeth (baby or adult), and/or hair. Other samples may also be useful for laboratory analysis, but should be discussed with laboratory personnel prior to submission.

The following is a list, in order of preference, of persons from which samples can be collected:

- | | |
|------------------------------------|--|
| 1. Missing Person | 5. Biological Sibling (sister/brother) |
| 2. Biological Mother | 6. Maternal Relative |
| 3. Biological Father (with mother) | 7. Paternal Relative |
| 4. Biological Child | |

Blood or buccal cells are the prescribed samples, which must be collected from the above-mentioned biological relatives. The FBI Blood Cell Collection kits are available for this collection upon request. It is important that all individuals handling the samples wear disposable gloves and do not come in close physical contact with the sample to prevent contamination of the sample.

Blood Cell Samples

The FBI Blood Cell Collection kits have all of the materials needed to collect a sample with a finger stick. **A letter from the law enforcement agency witnessing the collection must be included with the sample. The letter must have a contact name and phone number.** The donor can use the collection kit without aid from the witnessing law enforcement personnel.

Buccal Cell Samples

Three to four buccal (oral) swabs should be submitted. Individuals who are submitting buccal cell samples must not have consumed food or drink; chewed gum; or chewed, dipped, or smoked tobacco products for at least 15 minutes prior to the sample(s) being collected. Buccal swabs must be taken using sterile cotton-tipped applicators. The swabs are pressed against the inside of the donor's cheek and rubbed while exerting pressure in a circular motion. The intent is to scrape and trap cells that are on the inside surface of the mouth. Buccal swab samples should be air-dried before placing them back into their original paper sleeve and sealed with evidence tape.

All samples must be air-dried prior to packaging. Information about the donor that is submitted with the buccal cell sample should be recorded onto the Consent and Information form and the incoming communication.

Unidentified Human Remains

The types of unidentified evidence to be collected for analysis and entry into the database will include skeletal samples, teeth and/or tissue samples from human remains. Samples from amnesia victims, infant abduction victims, or other memory- or mentally-challenged individuals should use the FBI Blood Cell Collection kit or buccal swabs. All human remains submissions must be accompanied by a letter on agency letterhead and an anthropology report or odontology report. Medical Examiner or Coroner reports will be accepted. FBI Bone Collection Kits are available upon request. To avoid confusion, all sample bags or containers should be labeled with the local law enforcement case number and the name of contributing agency. Send each case separately (multiple bones for a set of human remains need to be together) with the appropriate documentation.

Skeletal Samples

All skeletal samples must be accompanied by a written anthropology report, preferably from a member of the American Board of Forensic Anthropology (ABFA). Medical Examiner or Coroner reports will be accepted

Three bones will usually be sufficient in most unidentified human remains cases (femur, rib and arm bone). To prevent contamination, it is **important that the bones not be cut**

by the medical examiner, coroner or anthropologist. Skeletal samples are listed in order of preference:

- Femur (upper leg bone)
- Long Bones (Tibia, Humerus, Fibula, Ulna or Radius)
- Foot Bones
- Skull and/or Mandible (Lower Jaw)
- Hand Bones
- Vertebrae
- Ribs
- Pelvis

All skeletal samples should be placed into the FBI's Bone Collection Kit or a paper bag, sealed with evidence tape, and protected with padding prior to shipment.

Teeth

All teeth and dental samples must be accompanied by a written report prior to submitting the samples. The FBI Laboratory prefers a report by a member of the American Board of Forensic Odontology (ABFO). Medical Examiner or Coroner reports will be accepted. There are two envelopes in the FBI Bone Collection Kits for the submission of teeth.

The teeth, which will be accepted, are listed below in order of preference. The FBI Laboratory prefers teeth which have not been restored (no dental work performed on the tooth), powdered or cut. Only whole teeth will be accepted due to contamination concerns.

- Unrestored Molar
- Unrestored Premolar (Bicuspid)
- Unrestored Cuspid (Canine Tooth)
- Unrestored Anterior Tooth (Front Tooth / Incisor)
- Restored Molar
- Restored Premolar (Bicuspid)
- Restored Cuspid (Canine Tooth)
- Restored Anterior Tooth (Front Tooth/Incisor)

All teeth and dental samples can be placed into a small coin envelope or plastic bag when they are completely dry. (Each tooth should be placed into a separate envelope or bag.)

Any questions regarding case submission for mitochondrial DNA analysis for missing person cases should be forwarded to the DNA Analysis Unit II Missing Persons Program Manager, Dr. John E. B. Stewart, at telephone number (703) 632-7582 or the DNA Analysis Unit II Regional Mitochondrial DNA Laboratory Program Manager, Dr. Catherine E. Theisen, at telephone number 703-632-7578. Questions regarding nuclear DNA analysis for missing person cases should be forwarded to the DNA Analysis Unit I Missing Persons Program Manager, Eric Pokorak at telephone number (703) 632-7586. Questions may also be directed to regional.mtdna@ic.fbi.gov.

APPENDIX 6. NCIC-UP DENTAL CODING CHARACTERISTICS

NCIC Unidentified Person File
Data Collection Entry Guide

Agency Case # _____

CODING DENTAL CHARACTERISTICS

Letter to Dentist

Dear Doctor:

This section was designed to facilitate the collection of dental data to be entered into the National Crime Information Center (NCIC). These dental data will be compared to dental characteristics stored in the NCIC Wanted Person and Missing Person Files to generate a candidate list of potential matching records. It should take you only a few minutes to complete the NCIC Dental Coding Form if you already gathered the appropriate information concerning the unidentified individual or remains.

Since radiographs are the most widely used comparison medium for the dental identification of unidentified human remains, your experience and expertise in taking and reviewing radiographs plays an important role in the gathering of identification evidence. Guidelines for the specific radiographs that need to be taken are found on page 28 of this packet. Photographs, either conventional or digital, can also be helpful in the identification process as explained on page 28 of this packet.

Because radiographs are two dimensional, it is also important that you perform a thorough visual examination to record the specific condition of the dentition. A worksheet for your notes in regard to each tooth is also contained in this packet on page 29. Using this worksheet will enable you to combine the information obtained from the visual examination with the information observed in the radiographs to provide an accurate dental profile of those teeth that have been recovered. Once you have completed the worksheet, you can easily transfer your notes to the NCIC Unidentified Person Dental Coding Report found on page 30.

Thank you for your careful completion of this report. Please be sure to retain all dental records for future comparison purposes. You should provide the original (or diagnostic copies of) radiographs, photographs, and documentation to the investigating agency and the medical examiner/coroner of jurisdiction.

If you have any questions regarding the reporting of a condition, contact the **FBI's CJIS Division at (304) 625-3000**.

Dental Data Checklist

(to be completed by dentist)

- Panoramic Radiograph if possible. (See page 28.)
- Full Mouth Series of Radiographs. (See page 28.)
- Photographs of Oral Structures. (See page 28.)
- Completed Dental Conditions Worksheet. (See page 29.)
- Completed NCIC Unidentified Person Dental Report. (See page 30.)

Dental Radiograph Guidelines for Unidentified Remains

- All periapical radiographs should show the complete crown and root tips with surrounding tissue. Avoid elongation and foreshortening as much as possible.
- Radiographs should be taken of region even if teeth are missing.
- Use bisecting angle or parallel technique.
- Obtain panoramic radiographs whenever possible. (Usually only possible in skeletal remains.)
- Submit one set of original radiographs and completed charting to the medical examiner or coroner of jurisdiction.

Guide to Full Mouth Radiographic Series

Upper right molar region	Upper right premolar region	Upper right cuspid region	Upper central incisor region	Upper left cuspid region	Upper left premolar region	Upper left molar region
Bitewing right molar region	Bitewing right premolar region				Bitewing left premolar region	Bitewing left molar region
Lower right molar region	Lower right premolar region	Lower right cuspid region	Lower central incisor region	Lower left cuspid region	Lower left premolar region	Lower left molar region

Recommended Dental Photographs

Photographs are occasionally used to help identify unidentified persons. This can be done by comparing the alignment and shape of the visible teeth in an antemortem photograph to those same characteristics present in the recovered human remains. Photographic superimposition of the head over photographs of possible candidates may also be useful. Multiple photographs, either conventional or digital are recommended. At a minimum, the following photographic views should be taken:

1. View of Anterior Teeth (cuspid to cuspid) showing incisal edges and alignment.
2. Frontal View of Head.
3. Right and Left Lateral View of Dentition.
4. Occlusal View of Dentition Upper and Lower.

DENTAL CONDITION WORKSHEET
(to be completed by dentist)

You should fill out this chart following the complete visual examination of the dentition and review of the dental radiographs taken of the unidentified individual or remains. You should number the teeth following the format of the Universal numbering system with tooth #1 being the upper right third molar, tooth #16 being the upper left third molar, tooth #17 being the lower left third molar and tooth #32 being the lower right third molar. In your descriptions of the restorations present, you should include the surfaces involved (M, O, D, F, I.), the restorative material used, such as amalgam, gold, porcelain, composite, temporary cement, and any other conditions that may be observed, such as endodontic treatment, pin retention, orthodontic brackets or bands. You must not leave any tooth numbers blank. If the tooth has no restorations, note it as "virgin" or "present, no restoration." Note other significant dental information at the bottom of this chart or on an additional sheet of paper, which you should attach to this worksheet.

1. _____	32. _____
2. _____	31. _____
3. _____	30. _____
4. _____	29. _____
5. _____	28. _____
6. _____	27. _____
7. _____	26. _____
8. _____	25. _____
9. _____	24. _____
10. _____	23. _____
11. _____	22. _____
12. _____	21. _____
13. _____	20. _____
14. _____	19. _____
15. _____	18. _____
16. _____	17. _____

Additional Dental Information:

NCIC Unidentified Person Dental Report

SECTION 1

ME/Coroner Case #: _____ NCIC #: _____

Completed by: _____ Date Completed: _____

Address: _____

Telephone #: _____ Email Address: _____

X-Rays Available? Yes No Dental Models Available? Yes No Dental Photographs Available? Yes No

SECTION 2

DENTAL CHARACTERISTICS

<p style="text-align: center;">Upper Right</p> <p>01 (18) _____</p> <p>02 (17) _____</p> <p>03 (16) _____</p> <p>04 (15) _____ (A)</p> <p>05 (14) _____ (B)</p> <p>06 (13) _____ (C)</p> <p>07 (12) _____ (D)</p> <p>08 (11) _____ (E)</p> <p style="text-align: center;">Upper Left</p> <p>09 (21) _____ (F)</p> <p>10 (22) _____ (G)</p> <p>11 (23) _____ (H)</p> <p>12 (24) _____ (I)</p> <p>13 (25) _____ (J)</p> <p>14 (26) _____</p> <p>15 (27) _____</p> <p>16 (28) _____</p>	<p style="text-align: center;">Lower Right</p> <p>32 (48) _____</p> <p>31 (47) _____</p> <p>30 (46) _____</p> <p>29 (45) _____ (T)</p> <p>28 (44) _____ (S)</p> <p>27 (43) _____ (R)</p> <p>26 (42) _____ (Q)</p> <p>25 (41) _____ (P)</p> <p style="text-align: center;">Lower Left</p> <p>24 (31) _____ (O)</p> <p>23 (32) _____ (N)</p> <p>22 (33) _____ (M)</p> <p>21 (34) _____ (L)</p> <p>20 (35) _____ (K)</p> <p>19 (36) _____</p> <p>18 (37) _____</p> <p>17 (38) _____</p>	<p>(Numbers in parentheses represent FDI System.)</p> <p>(Letters in parentheses represent deciduous dentition.)</p>
---	---	---

SECTION 3

DENTAL CODES

- | | |
|---|---|
| <p>X = Tooth has been removed or did not develop</p> <p>V = Tooth is present and unrestored</p> <p>M = Mesial Surface Restored</p> <p>O = Occlusal/Incisal Surface Restored</p> <p>D = Distal Surface Restored</p> | <p>F = Facial or Buccal Surface Restored</p> <p>L = Lingual Surface Restored</p> <p>C = Lab Processed or Prefabricated Restoration</p> <p>R = Endodontic Treatment</p> <p>/ = Postmortem Missing or Not Recovered (Default Code)</p> |
|---|---|

(*The codes V and / are used differently in the Unidentified Person Report than in the Missing Person Dental Report.)

SECTION 4

DENTAL REMARKS

ALL (All 32 teeth are present and unrestored) **UNK** (No dental information available)

General Procedures for Coding the Report
(to be completed by dentist)

Section 1:

- The NCIC # field should be completed by the investigating agency.
- The Medical Examiner/Coroner Case #, Completed by, Date Completed, Address, Telephone #, Email Address, X-Rays Available, Dental Models Available, and Dental Photographs Available fields should be completed by the individual filling out the report.

Section 2:

- **If no dental information is available**, go directly to Section 4 and check the UNK box. Do not enter any codes in the tooth fields.
- **If all 32 teeth are present with no restorations**, go directly to Section 4 and check the ALL box.
- Review pages 32 and 33 prior to completing the Dental Characteristics Section of the dental report.
- Tooth numbers are based on the Universal System. The corresponding Federation Dentaire Internationale (FDI) System numbering is depicted in parenthesis.
- Use all available dental evidence to capture the most accurate dental profile.
- Enter the appropriate code(s) next to the corresponding tooth number, 01–32, on the dental report.
- Each tooth must have one or more codes entered except when ALL or UNK is used in Section 4.

Section 3:

- Dental Codes. A more detailed explanation of these codes and their use is provided on page 32.

Section 4:

- Used for coding ALL or UNK.
 - If ALL is marked, NCIC will automatically code all teeth as V.
 - If UNK is marked, NCIC will automatically code all teeth as /. A dental comparison will not be performed by NCIC when this box is marked.
- Used for additional dental characteristics not captured in the dental codes listed in Section 3, for example, dental implants, removable dentures, orthodontic appliances. Specific tooth numbers are not always necessary, and key descriptive words are preferred.

Dental Codes and Descriptions

Primary Dental Codes - *One or more codes must be entered for each tooth.*

Code	Description
/	Default code for Unidentified Persons. Typically used when the tooth is not recovered. Also used when a portion of the tooth is remaining and it is impossible to determine if the clinical crown has been restored. Note: This code is used differently when coding dental characteristics for Missing Persons.
V	Virgin. Tooth is present and unrestored. This includes unerupted teeth such as wisdom or deciduous teeth. Note: This code is used differently when coding dental characteristics for Missing Persons.
X	Missing. Tooth has been extracted or is congenitally missing.
M	Mesial surface of the tooth has been restored.
O	Occlusal or Incisal surface of the tooth has been restored.
D	Distal surface of the tooth has been restored.
F	Facial or Buccal surface of the tooth has been restored.
L	Lingual surface of the tooth has been restored.

Secondary Dental Codes - *Cannot be used independently. Must be used in conjunction with Primary codes.*

Code	Description
C	Any laboratory processed restoration including crowns, inlays, onlays, and veneers. This code also includes prefabricated restorations such as stainless steel crowns, metal and acrylic temporary crowns, and porcelain processed veneers.
R	Root canal. Evidence is available to establish that an endodontic procedure has been started or completed.

Entry Rules for NCIC Dental Characteristics

The following rules apply to **each tooth** for the successful entry of dental characteristics into NCIC:

1. The DCH Field requires that a code or series of codes be entered for each tooth. The tooth number (01–32) must be followed by option A, B, or C:
 - A. One special character /, or one special character / followed by R.
 - B. One alphabetic character M, O, D, F, L, X, V.
 - C. Two to seven alphabetic characters M, O, D, F, L, C, and R.
2. Any combination of M, O, D, F, L should be entered in the sequence of M, O, D, F, L.
3. The R character should follow any combination of M, O, D, F, L, C or the / character.
4. The C character should follow any combination of M, O, D, F, L.
5. The only character that should be used with / is the R character.
6. The characters V and X should not be used with any combination of characters.
7. The characters M, O, D, F, L, C, R, /, V, and X may be used only once per numeric.

If you have any questions regarding the reporting of a condition, contact the **FBI's CJIS Division at (304) 625-3000**.

NATIONAL DENTAL IMAGE REPOSITORY

The National Dental Image Repository (NDIR) is available on the Law Enforcement Online (LEO). The NDIR provides an image repository for law enforcement agencies who wish to post supplemental dental images related to National Crime Information Center (NCIC) Missing, Unidentified, and Wanted Person records in a Web environment. This allows for easier access and retrieval of the information by qualified individuals performing dental comparisons. Participation is voluntary. The NDIR is purely an additional tool for persons attempting to identify more easily missing, unidentified, and wanted persons.

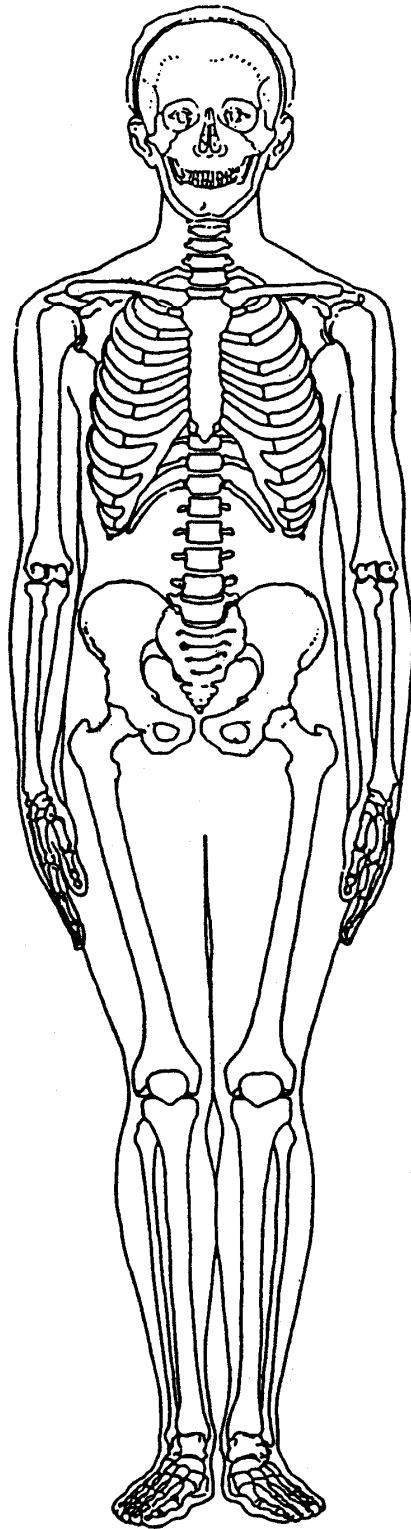
Below is a brief explanation of how the NDIR functions:

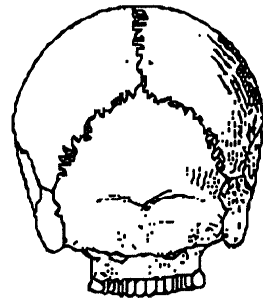
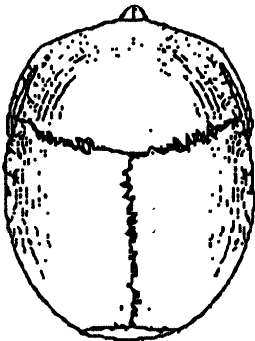
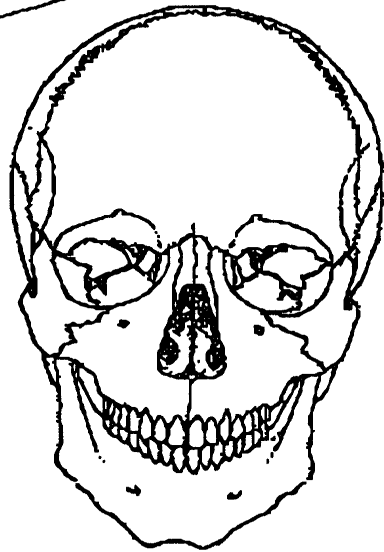
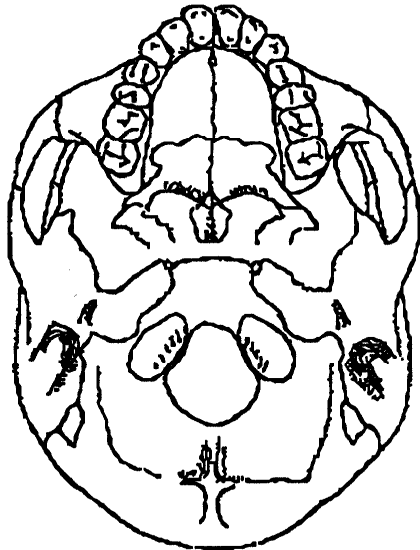
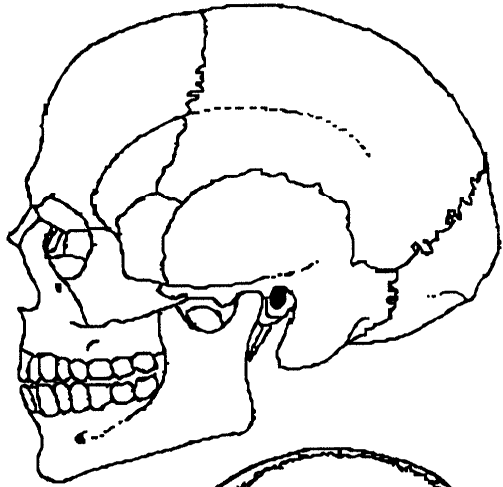
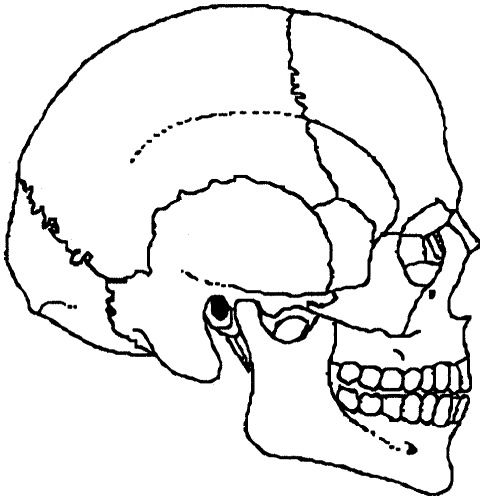
- Agencies convert their supplemental dental information to electronic format according to the specifications on the website and e-mail the information to NDIR@leo.gov.
- Information can include but is not limited to:
 - 1) Missing, Wanted, or Unidentified Submission Form
 - 2) Digitized copy of the NCIC Record
 - 3) Digitized copy of the Dental Condition Worksheet
 - 4) Digitized copy of the Dental Report Form
 - 5) Digitized copies of the available radiographs and miscellaneous digital scans used for identification purposes
- Upon receipt of the information by the Criminal Justice Information Services (CJIS) Division, a member of the NDIR Review Panel is contacted to review the record. (Agencies have the option of declining to have their records reviewed by a member of the NDIR Review Panel. They must indicate they do not want their information reviewed by a member of the NDIR Review Panel upon submission of the information.) The NDIR Review Panel is comprised of American Board of Forensic Odontologists (ABFO), or dentists who have the recommendation of an ABFO odontologist, who have specialized training in the proper coding of NCIC dental records and the comparison/identification of dental records. Members have met all criteria and volunteered to participate in this project. A member of the NDIR Review Panel is e-mailed the information to review the dental coding and determine if the coding is correct. If they agree with the coding, they advise the CJIS Division via e-mail, and the information is posted to the NDIR. If the NDIR Review Panel member determines the NCIC dental record is improperly coded, they liaison with the submitting agency in an attempt to correct inaccuracies.
- The information is returned to the submitting agency for correction and resubmission.
- Records are posted in numerical order by the NCIC number in the NDIR on LEO. Each record contains a copy of each piece of information in the original format as well as a zip file containing all the documentation to allow for the easy download of all the information.
- When a record is cleared from the NCIC, the information is removed from the NDIR and placed in an archive file at the CJIS Division.
- The NDIR also houses data collection guides and forms related to NCIC Missing, Unidentified and Wanted Person entries.
- The NDIR may be found by clicking on the following from the LEO Homepage:
 - . LEOSIGS
 - . Public LEOSIGS
 - . CJIS
 - . National Dental Image Repository

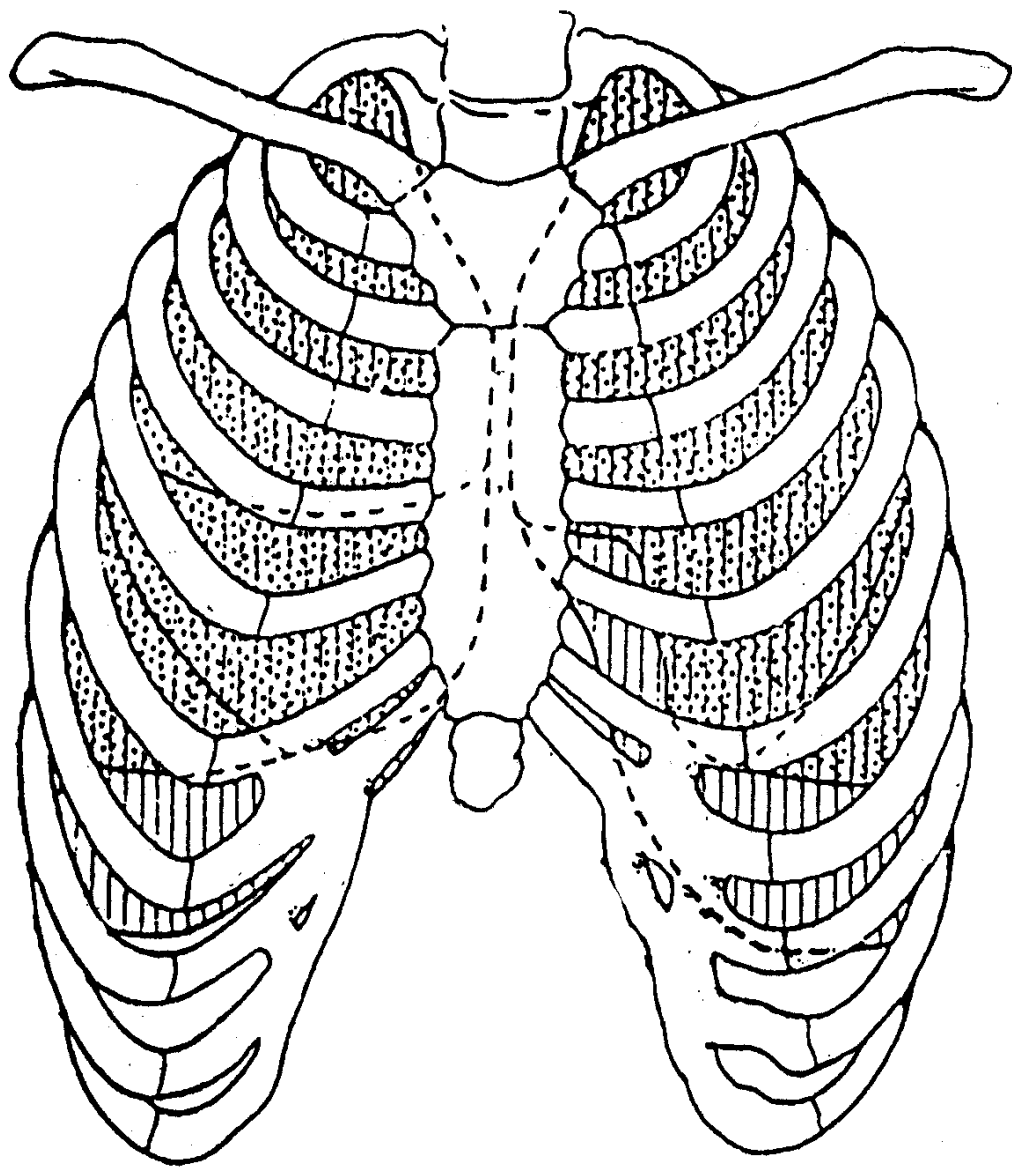
LEO is a secure website that requires a user name and password to access. It is available free of charge to members of the law enforcement, medical examiner and coroner communities working to identify the missing and unidentified. For further inquiries regarding the NDIR, LEO, or to obtain a LEO application, contact Mrs. Stacey C. Davis, (304) 625-2618 or send an e-mail request to ndir@leo.gov. Applicants will receive their LEO user name and password in approximately three weeks.

Appendix 7

Skeletal Diagrams and Inventory







SKELETAL INVENTORY

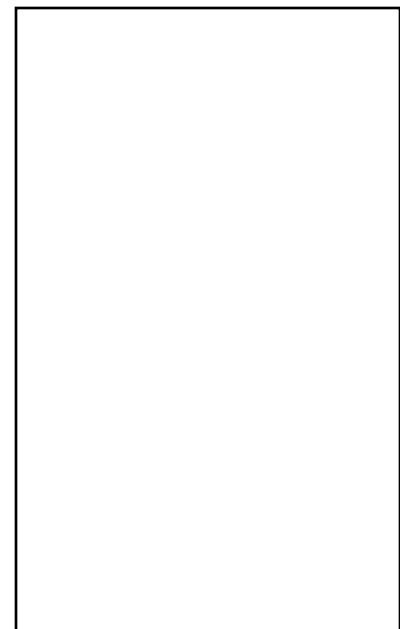
AXIAL			APPENDICULAR			CRANIAL		
Element	#	cond.	Element	left	right	Element	left	right
1 st Cervical		_____	Scapula	_____	_____	Parietal	_____	_____
2 nd Cervical		_____	glenoid	_____	_____	Temporal	_____	_____
3-6 Cervical	_____	_____	Clavicle	_____	_____	Zygomatic	_____	_____
7 th Cervical		_____	med. epi.	_____	_____	Lacrimal	_____	_____
1-9 Thoracic	_____	_____	Sternum			I.N.C.	_____	_____
10 th Thoracic		_____	manubrium		_____	Nasal	_____	_____
11 th Thoracic		_____	body		_____	Maxilla	_____	_____
12 th Thoracic		_____	xiphoid		_____	Palatine	_____	_____
1 st Lumbar		_____				TMJ	_____	_____
2 nd Lumbar		_____	Ilium	_____	_____	Mandible		_____
3 rd Lumbar		_____	auricular	_____	_____	Frontal	_____	_____
4 th Lumbar		_____	Pubis	_____	_____	Sphenoid	_____	_____
5 th Lumbar		_____	symphysis	_____	_____	Ethmoid	_____	_____
Sacrum	_____	_____	Ischium	_____	_____	Vomer	_____	_____
Coccyx	_____	_____	Acetabulum	_____	_____	Occipital	_____	_____
Left Ribs	_____	_____				Hyoid	_____	_____
Right Ribs	_____	_____	Patella	_____	_____	Thyroid	_____	_____
						Crycoid	_____	_____
						Ossicles	_____	_____

APPENDICULAR

Element	left side					right side				
	epi-p/	prox/	mid/	dist/	epi-d	epi-p/	prox/	mid/	dist/	epi-d
Humerus	_____	_____	_____	_____	_____	_____	_____	_____	_____	_____
Radius	_____	_____	_____	_____	_____	_____	_____	_____	_____	_____
Ulna	_____	_____	_____	_____	_____	_____	_____	_____	_____	_____
Femur	_____	_____	_____	_____	_____	_____	_____	_____	_____	_____
Tibia	_____	_____	_____	_____	_____	_____	_____	_____	_____	_____
Fibula	_____	_____	_____	_____	_____	_____	_____	_____	_____	_____

Codes:
 c = >= 75% present
 p = 25% - 75% present
 f = <25% present

NOTES:



Courtesy of
D. Ubelaker

EXTREMITIES

element	#	cond.	element	#	cond.
Scaphoid	_____	_____	Calcaneus	_____	_____
Lunate	_____	_____	Talus	_____	_____
Trapezium	_____	_____	Cuboid	_____	_____
Trapezoid	_____	_____	Navicular	_____	_____
Capitate	_____	_____	Medial Cuneiform	_____	_____
Hamate	_____	_____	Intermed. Cuneiform	_____	_____
Triquetral	_____	_____	Lateral Cuneiform	_____	_____
Pisiform	_____	_____			
Metacarpals			Metatarsals		
1 st	_____	_____	1 st	_____	_____
2 nd	_____	_____	2 nd	_____	_____
3 rd	_____	_____	3 rd	_____	_____
4 th	_____	_____	4 th	_____	_____
5 th	_____	_____	5 th	_____	_____
C. Phalanges			T. Phalanges		
proximal	_____	_____	proximal	_____	_____
middle	_____	_____	middle	_____	_____
distal	_____	_____	distal	_____	_____
Sesamoids	_____	_____	Sesamoids	_____	_____