



FORENSIC SERVICES UNIT @ UNT Center for Human Identification



Bulletin: July 2010

Topic: Direct DNA References for
Missing Persons

Learning Objective:

This bulletin will provide an explanation of direct DNA reference samples for missing person cases. The benefits of collecting direct reference samples will be discussed, and resources for obtaining PKU cards as a direct reference are provided.

Terms:

CODIS: Combined DNA Index System

Direct Reference: Any item that might contain blood, saliva, or other biological material that could be used to obtain a DNA profile for a missing person, as opposed to profiles from relatives of a missing person.

Phenylketonuria: An inherited metabolic disorder caused by an enzyme deficiency, usually causing severe mental retardation and seizures unless phenylalanine is restricted from the diet beginning at birth (Miriam-Webster).

PKU: An abbreviation for Phenylketonuria.

PKU Card: Also known as a Guthrie Card. A PKU – or Guthrie – card holds samples of blood that are collected from infants at birth to test for genetic disorders. The blood is dried onto a PKU card and stored for specified periods of time which vary by state.

Narrative:

DNA specimens for a missing person case fall into two categories: 1) family reference samples and 2) direct reference samples. Family reference samples are collected from the mother, father and/or other close biological relatives of a missing person. Direct reference samples consist of biological material from the missing person (e.g., baby tooth or biopsy tissue) or an item of evidence that the missing

person has come into direct contact with and may yield cells that contain his or her DNA (e.g., toothbrush).

Unlike profiles developed from family reference samples, which can only be searched against profiles in the Unidentified Human Remains index of CODIS, profiles developed from direct reference samples can be searched against all indexes within CODIS. Obtaining and searching direct missing person profiles across all indexes of CODIS can produce leads that will not be obtained with family reference samples alone. For instance:

- A missing person's direct profile can be searched against the Forensic Unknown index of CODIS. If the individual is voluntarily missing, this could produce an association if the missing person has been involved in an unsolved crime.
- A missing person's direct profile can be searched against the Convicted Offender Index of CODIS to ensure the individual is not voluntarily missing and convicted of a crime under an alias.
- A missing person's direct profile can produce associations to unidentified decedents in the Unidentified Human Remains index of CODIS that might be missed because of inadequate family reference profiles (see June 2010 FSU bulletin).

When collecting and submitting direct reference samples for missing persons, at least two family reference samples should also be submitted. These family reference samples will allow the laboratory to confirm that the profile from the direct reference is indeed from the missing person and has not been contaminated. They will also allow proper CODIS searching to still take place if a profile cannot be obtained from the direct reference sample.

NOTE: Family reference samples should be submitted with direct references even if the missing person was adopted. These will be used to exclude other family members from being the source of DNA on toothbrushes and other direct references.

Examples of items that can be used for direct DNA references are:

- A toothbrush used by the missing person prior to his/her disappearance
- Tissue collected in life for biopsy or other medical testing
- Baby teeth retained by family members, provided the teeth can be definitively identified as those of the missing person if there was more than one child in the household
- PKU/Guthrie cards (explained below)
- Undergarments worn by the missing person prior to disappearance that have not been laundered

Direct reference samples can often be difficult to obtain in long-term missing person cases, as toothbrushes and other items used by the missing person may have been discarded or misplaced over the years. In some states, investigators may look to PKU cards as a direct reference for a missing person if no other direct references are available. PKU cards, also known as Guthrie cards, are collected from infants at the time of birth. An infant's heel is pricked with a needle and blood is collected onto a PKU card so that testing for genetic disorders such as Phenylketonuria can be conducted. The blood is dried onto the PKU card and is archived at each state's Department of Health for a period of time specified by each state. Some states retain PKU cards for only 30 days, some for several years, some for up to 20 years, and others keep them indefinitely. Pages 4-9 of this bulletin provide specifics on each state's PKU card retention policies and points of contact to request PKU cards in each state. The blood from PKU cards can yield direct DNA profiles for missing persons when no other direct references exist, and are especially useful in missing child investigations since PKU cards are more likely to be available in more recent births. PKU cards are also excellent direct references for missing children who were adopted when the state of birth is known.

NOTE: Policies on PKU card retention may change in many states due to recent lawsuits and privacy concerns over the use of stored PKU cards for extended research. Some states, including Texas, may destroy all PKU cards that were used for research without parental consent.

Acknowledgments:

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PKU/GUTHRIE CARD CONTACTS:

State	Agency	Program Contacts	1st Yr	Yrs Kept	Storage Location	Requirements to Release
AL	Dept. of Public Health	Bob Hinds, Director Newborn Screening Division (334) 206-5556 Bob.Hinds@adph.state.al.us Dr. Sharon Massingale (preferred) Public Health Director Bureau of Clinical Laboratories (334) 260-3400 sharon.massingale@adph.state.al.us	1964	3 months	AL state lab	No current policy
AK	Dept. of Health and Social Services, Division of Public Health	Thalia Wood, Manager Children's Health Unit & Newborn Metabolic Screening (907) 269-3499 Thalia.Wood@alaska.gov	1967	3	2 yr in OR state lab, 1yr in AK public health lab in Anchorage	Only released with request from parents and health care provider only under certain conditions (i.e. no paternity testing and no repeating of screening tests already performed)
AZ	Dept. of Health Services	Ward Jacox, Chief Office of Newborn Screening (602) 364-1410 jacoxw@azdhs.gov	1994	3 months	AZ state lab	No past experience, request submitted to Dept of Health or state lab
AR	Dept. of Health	Leslie Himstedt (preferred) Laboratory Supervisor Dept. of Health, Public Health Lab (501) 661-2445 leslie.himstedt@arkansas.gov JoAnn Bolick Newborn Screening Program (501) 280-4753 JoAnn.Bolick@arkansas.gov	1967	3-6 months	AR state lab	Court order, lawful subpoena or parental consent
CA	Dept. of Health Services	Fred Lorey Newborn Screening Program (510) 412-1490 fred.lorey@cdph.ca.gov	1980	Indefinitely	CA state lab	Subpoena, request made to Admin Office
CO	Dept. of Public Health and Environment	David Butcher, Director Newborn Screening Program (303) 692-3069 david.butcher@state.co.us	1982	6 months	CO state lab	Only released to parents or by court order
CT	Dept. of Public Health	Vine Samuels Newborn Screening Program (860) 509-8081 fax:(860) 509-8650 vine.samuels@ct.gov	1964	6 months	CT state lab	Only from the person who provides child's health care, e.g.. Social worker, health care provider

State	Agency	Program Contacts	1st Yr	Yrs Kept	Storage Location	Requirements to Release
DE	Dept. of Health and Social Services	Betsy Voss Newborn Screening Program (302) 744-4544 betsy.voss@state.de.us Pat Scott, Manager (preferred) Newborn Screening Program (302) 223-1493	1972	4 months	DE state lab	Request has to be reviewed by IRB (Internal Review Board?) (provided by Pat Scott)
DC	Dept. of Health	Yvockeea Monteiro Newborn Screening Program (202) 535-1915 yvockeea.monteiro@dc.gov	1980	1	Perkin Elmer Genetics, Inc.	
FL	Dept. of Health	Lois Taylor Newborn Screening Program (850) 245-5670 lois_taylor@doh.state.fl.us	1965	Indefinitely	FL state lab	By law enforcement, or medical examiners
GA	Dept. of Human Resources, Division of Public Health	Ginger Stevens Newborn Screening Laboratory (404) 327-7951 gestevens@dhr.state.ga.us				
HI	Dept. of Health	Christine Matsumoto Newborn Metabolic Screening Program (808) 733-9069 christine_matsumoto@doh.hawaii.gov		1	OR Public Health Lab, Hillsboro, OR (NOT in HI)	Court order or subpoena, no current policy
ID	Dept. of Health and Welfare	Mitch Scoggins, Manager Children's Special Health Program (208) 334-5963 ScogginM@dhw.idaho.gov Carol Christiansen Newborn Screening Program / Children's Special Health Program (208) 334- 4935 christc3@dhw.idaho.gov	mid-1960s	1	Regional lab (Portland, OR)	Anyone can request, but requires custodial parents' consent. Otherwise court order needed.
IL	Dept. of Public Health	Claudia Nash Newborn Screening Program (217) 785-8101 claudia.nash@illinois.gov Mike Petros Lab Director in Chicago (312) 793-4751 mike.petros@illinois.gov	1965	2 months	IL state lab (Chicago)	No past experience, contact Legal Services (217) 782-4977

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IN	Dept. of Health	Courtney Eddy, Genomics Program Director Genomics and Newborn Screening HIPAA Program Privacy Coordinator (preferred) 317.233.9260 CEddy@isdh.IN.gov Bob Bowman, Director Genomics and Newborn Screening Program (317) 233-1231 BobBowman@isdh.IN.gov	1965	23	IN state contract lab	Parent or legal guardian consent
IA	Dept. of Public Health	Kimberley Piper Newborn Screening Program (515) 281-6466 kpiper@idph.state.ia.us Marcia Valbracht (preferred) University Hygienic Laboratory (515) 725-1600	1983	5	IA Public Health Lab, Univ. Hygienic Lab, Ankeny, IO	Court order, subpoena, or parental request.
KS	Dept. of Health and Environment	Colleen Peterson, Lab Manager Newborn Screening Program Neonatal Chem (785) 296-1650 ckpeters@kdheks.gov	1967	30 days	KS state lab	No past experience, need to talk to lawyers
KY	Cabinet for Health and Family Services	Stephanie Mayfield (preferred) stephaniek.mayfield@ky.gov Lea Mott, Supervisor Newborn Screening Program (502) 564-4446 x4456 lea.mott@ky.gov	1966	45 days, abnormal indefinitely	KY state lab	Would require court order to release
LA	Dept. of Health and Hospitals	Arthur Hagar, Assistant Dir. Public Health Laboratory (504) 219-4667 ahagar@dhh.la.gov	1963 or 1964	30 days; abnormal indefinitely	LA state lab	No past experience, can make request to Arthur Hagar or Dr. Martin (lab director). Will forward to Legal Dept for review and official response)
ME	Dept. of Health and Human Services	Ellie Mulcahy Newborn Bloodspot Screening Program (207) 287-4623 eleanor.a.mulcahy@maine.gov	1999	Indefinitely	Contract lab in MA	Parental request is enough
MD	Dept. of Health and Mental Hygiene	Fizza Gulamali-Majid Division Chief Newborn and Childhood Screening (410) 767-3487 MajidF@dhhm.state.md.us	1965	24 (since 2004)	Newborn and Childhood Screening Lab	Follows state and federal laws
MA	Dept. of Public Health	Roger Eaton, Lab Director Newborn and Childhood Screening (617) 983-6317 roger.eaton@umassmed.edu	1990	"At least 10 years" and up to 18 yrs at present	UMASS Medical School	Court Order (subpoena is not sufficient): if no Court Order, then MADPH legal consult

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MI	Dept. of Community Health	Harry Hawkins Newborn and Childhood Screening (517) 335-8095 hawkinsh@michigan.gov	1984	Indefinitely	MI state lab, duplicate samples in Techtown, Detroit, MI	Parental consent
MN	Dept. of Health	Mark McCann, Director Newborn and Childhood Screening (651) 201-5450 Mark.McCann@state.mn.us	1965	Indefinitely at present, but may be subject to change in future	MN state lab (in Dept of Health)	Written consent signed by parents
MS	Dept. of Health	Beryl Polk, Director Newborn and Childhood Screening (601) 576-7619 beryl.polk@msdh.state.ms.us	1998	3 to 4	Private contract lab	No past experience
MO	Dept. of Health and Senior Services	Patrick Hopkins, Lab Director Newborn and Childhood Screening (573) 751-2662 patrick.hopkins@dhss.mo.gov	1964 or 1965	30 days	MO state lab	email sent to Patrick Hopkins
MT	Dept. of Public Health and Human Services	Linda Beischel, Coordinator Newborn Screening Program (406) 444-0984 lbeischel@mt.gov	1973	before 2008: few months; since 2008: indefinitely (may discard aft 2 yrs if run out of space)	MT state lab	Parental consent
NE	Dept. of Health and Human Services	Julie Miller, Program Manager Newborn Screening & Genetics Program (402) 471-6733 Julie.Miller@nebraska.gov	1962 in some hospitals, 1967 state wide	90 days (required to destroy within 30 days afterwards)	PerkinElmer Genetics, Inc. (from 2003)	Court order, subpoena, or parental request. A law enforcement request needs authorization from the parents
NV	Dept. of Health and Human Services, Health Division	Jackson Zenteno (775) 684-3478 jzenteno@health.nv.gov	1978	2-Jan	Lab in OR	Parental consent is sufficient
NH	Dept. of Health and Human Services	Marcia Lavochkin, Program Coordinator Newborn Screening Program (603) 271-4225 MLavochkin@dhhs.state.nh.us	1965	6 months	Contract lab	LE request
NJ	Dept. of Health and Senior Services	Scott Shone Newborn Screening Laboratory (609) 341-5455 Scott.Shone@doh.state.nj.us	PKU- late 70s, others 1991	23	NJ state lab	Court order
NM	Dept. of Health	Brenda Romero, State Genetics Coordinator Newborn Screening Program (505) 476-8857 brenda.romero@doh.state.nm.us	1978	1	OR Public Health Lab	Subpoena

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NY	Dept. of Health	Mary Graziano, Manager Newborn Screening Genetics Services (518) 486-2911 mgg01@health.state.ny.us	1965, storage since 1997	Indefinitely	Wadsworth Center	Subpoena, court order, ME, physician or parent request
NC	Dept. of Health Human Services	Shu Chaing, Manager (preferred) Newborn Screening/Clinical Chemistry Unit (919) 733-3937 Shu.Chaing@ncmail.net Ann Grush, Supervisor Newborn Screening Program (919) 807-8881 ann.grush@ncmail.net	1965	Indefinitely since 2002 (may change in the future)	Newborn Screening/Clinic al Chemistry Unit of NC State Laboratory of Public Health.	Parental consent
ND	Dept. of Health	Barb Schweitzer, Director Newborn Screening Program (701) 328-4538 bschweit@nd.gov	1960s	Indefinitely (have samples since 2001)	Lab in University of ND	Parental consent, request submitted to HIPA (Health Information Privacy Act)
OH	Dept. of Health	Sharon Linard, Director Newborn Screening Program (614) 644-4659 sharon.linard@odh.ohio.gov	1960s	2	OH state lab	Parents' signed consent or court order
OK	Dept. of Health	SharonVaz, Director Newborn Screening Program (405) 271-6617 sharonav@health.ok.gov	1963	30 days, 42 days max.	Public Health lab in Dept of Health	Parents' signed consent, approved by Advisory Committee
OR	Public Health Division	Cheryl Hermerath Newborn Screening Section (503) 693-4172 cheryl.a.hermerath@state.or.us	1961	1	Public Health lab in Dept of Health	Written request stating the pertinent information to assist in identifying the correct specimen and parental or guardian permission to release the specimen
PA	Dept. of Health	Melita Jordan, Director Newborn Screening Section (717) 787-7192 mejordan@state.pa.us	1965	8 months	PerkinElmer Genetics, Inc. and University of Massachusetts, Boston, MA (for New England region in PA)	Only parental consent, NOT subpoena
RI	Dept. of Health	Barbara McNeilly, Director Newborn Screening Program (401) 222-4640 Barbara.McNeilly@Health.ri.gov	1976	23	Contract lab in MA (New England Regional State Lab)	Parental consent or subpoena
SC	Dept. of Health and Environmental Control	John Reddic or Arthur Wozniak Newborn Screening Laboratory (803) 896-9725 reddicje@dhec.sc.gov	1965	2 years in lab, then return to guardian, others 1 additional year	Bureau of Lab, in Dept of Health and Environmental Control	Court order, subpoena or written request of the parent/legal guardian
SD	Dept. of Health	Lucy Fossen Newborn Screening Program (605) 773-2944 lucy.fossen@state.sd.us	1973	1 month	SD state lab	No information

State	Agency	Program Contacts	1st Yr	Years Kept	Storage Location	Requirements to Release
TN	Dept. of Health	Jim Gibson, Director Newborn Screening Laboratory (615) 262-6300 jim.gibson@tn.gov	1968	1 year for normal, no def. time for abnormal	TN state lab	Only parental consent
TX	Dept. of State Health Services	Susan Tanksley, Director(preferred) (512) 458-7111 x3106 susan.tanksley@dshs.state.tx.us Sandra Navarro (512) 458-7111 x2377	1960s	25	TX state lab, archived in College Station, TX	Parental consent, other requests forwarded to lawyers
UT	Dept. of Health	Fay Keune Newborn Screening Program (801) 584-8255 fkeune@utah.gov	1979	before 2006: 90 days, aft 2006: 2 years	State lab, Salt Lake City, UT	Parental consent
VT	Dept. of Health	Cynthia Ingham Newborn Screening Program Chief (802) 951-5180 cingham@vdh.state.vt.us	1964	Indefinitely (only have samples from 2002 onwards due to flooding)	VT state lab	No requirements
VA	Dept. of Health	Sharon Williams Genetics Program Manager (804) 864-7712 sharonk.williams@vdh.virginia.gov	1966-67	10 years for abnormal, 6 months for normal	VA state lab	Only parental consent or medical examiner request
WA	Dept. of Health	Sheila Weiss Newborn Screening Program Cooperator (206) 418-5509 sheila.weiss@doh.wa.gov	1960s, 1976 state wide	21 (10 years in Shoreline, archived 11 years in Olympia, both in WA), destroyed if requested	WA state lab	Parental consent, need release form, unless criminal cases
WV	Dept. of Health and Human Resources	Kathy Cummons, Director Office of Maternal, Child and Family Health (304) 558-7171 kathy.g.cummons@wv.gov	1967	3 months	WV state lab	No experience, parental consent is sufficient
WI	Dept. of Health Services	Gary Hoffman (608) 262-4692 hoffman@mail.slh.wisc.edu	1978	1	Newborn Screening lab at State Lab of Hygiene	"Request for Information" form required, court orders and subpoenas would be exempt, submit request to Wisconsin State Lab of Hygiene Admin Office