DNA Identification for Human Trafficking Prevention

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What is human trafficking?
What is human trafficking?

• Sex Trade/Tourism
• Child Prostitution
• Forced / Bonded Labor
• Debt Bondage / Migrant Workers
• Involuntary Domestic Servitude
• Child Labor
• Child Soldiers
• Forced Marriage

Images: US Dept of State
12.3 million victims at any given time
49,105 victims identified in 2009
4,166 prosecuted cases in 2009
What is not human trafficking?

- Illegal adoptions
- Trade in human organs
- Child pornography
- Prostitution by willing adults

Images: ProPublica, Associated Press, Tropicalites
What is adoption fraud?

The kidnapping or unlawful buying/selling of an infant or child for the purpose of offering that child for adoption.

*Illegal adoptions do not necessarily involve the use of force, fraud or coercion*
What is immigration fraud?
How is immigration fraud seen in DNA testing?

<table>
<thead>
<tr>
<th>DNA Fraud</th>
<th>Genotype Recycling</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Submission of biologically related samples for biologically unrelated individuals</td>
<td>• Resubmission of a previously tested biologically related sample for a new relationship claim</td>
</tr>
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</table>
How do relationship testing laboratories handle suspicious cases of fraud?

“We accept what the embassy sends us even if it’s not correct. Then we send everything with the results so they can see how the consent was collected and they decide whether they will accept the results or not based on the chain of custody” – Anonymous relationship testing laboratory

“We ask for a new sample and will not perform analysis until they are resolved” – Genetic Testing Laboratory
Can DNA testing address human trafficking?
How to address immigration fraud?

“What’s clearly needed is, like the FBI has its own database of profiles, the State Department and USCIS need they’re own computer that can look for identical profiles” – Anonymous
U.S. immigration may adopt DNA testing at the border for on-site testing of claimed relationships
Existing Programs: United Arab Emirates

• Random DNA testing of alleged parents and children is used to combat the trafficking of minors to serving as camel jockeys
• In first two years:
  – 446 children tested
  – 65 false parenthood claims
• Facilitated the return of over 250 children to their home countries
  – also arrests and prosecutions of several traffickers

Existing Programs: China

- Ministry of Public Security has launched a DNA database of children victims of trafficking
  - 813 children reconnected to biological parents
- Women and children abducted for human trafficking have been freed
- As of September 6, 2010:
  - 10,621 women
  - 5,896 children
Existing Programs: Guatemala

- Collection of DNA in adoptions 1996-2008
- Pilot collection of DNA to detect illegal adoptions in 2006 (DNA-PROKIDS)
- Alba-Keneth Warning System enacted in 2010, requiring DNA databanking for cases of missing children, integrates with
  - Attorney General’s Office
  - National Civil Police
  - Directorate General of Immigration
  - Ministry of Communication
  - Public Ministry
- At least one child was reunified with her biological mother through DNA testing after being stolen more than a year prior
Two cooperating programs in U.S.

DNA-PROKIDS  Dallas Prostitution Diversion Initiative
<table>
<thead>
<tr>
<th>Coordinators</th>
<th>Funding</th>
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</thead>
<tbody>
<tr>
<td>Coordinators</td>
<td>• Spanish Government</td>
</tr>
<tr>
<td></td>
<td>• Government of the State of Andalusia</td>
</tr>
<tr>
<td></td>
<td>• Private companies and foundations</td>
</tr>
<tr>
<td></td>
<td>– BBVA Group</td>
</tr>
<tr>
<td></td>
<td>– Caja GRANADA</td>
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<td></td>
<td>– Bank of Santander</td>
</tr>
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<td></td>
<td>• Life Technologies Foundation granted an award to UNTCHI for further program development and expansion.</td>
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</tbody>
</table>
Missing Persons Model Database

Reference Database
- Parent
- Child
- Sibling
- Hairbrush

Questioned Database
- Unidentified remains

Kinship Analyses
Human Trafficking Model Database

Reference Database
- Parent
- Child
- Sibling
- Hairbrush

Questioned Database
- Unidentified remains
- Recent immigrants
- Migrant workers
- Vagrant youth
- Children in foster homes
- Orphanages

Kinship Analyses
Genetic Markers

- 13 CODIS core loci
- Proposed additional 11 loci
- Ancestry Informative Markers (AIMs)
- Phenotypic markers
<table>
<thead>
<tr>
<th>UNTCHI Collection Kits</th>
<th>Equipment (in some cases)</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Prepared by Bode Technologies</td>
<td></td>
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<tr>
<td>• Buccal swab or finger prick device</td>
<td></td>
</tr>
<tr>
<td>• Chain of custody and voluntary consent forms</td>
<td></td>
</tr>
<tr>
<td>– minimal personal information (name, relationship to child, place of sample collection)</td>
<td></td>
</tr>
<tr>
<td>– no information on related case or the context of the sampling</td>
<td></td>
</tr>
<tr>
<td>• Educational sheets</td>
<td></td>
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<tr>
<td>• UNTCHI’s contact information</td>
<td></td>
</tr>
<tr>
<td>• Digital Polaroid camera</td>
<td></td>
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<tr>
<td>• Computers with software for law enforcement to store case-related information</td>
<td></td>
</tr>
<tr>
<td>• Scanners to digitize sample collection cards</td>
<td></td>
</tr>
<tr>
<td>• Software to perform DNA profile comparisons</td>
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</tbody>
</table>
### Analysis

- Analyzed at UNTCHI as forensic evidence
- Samples analyzed in batches
  - Treated as reference samples unless they are known to be part of a criminal case
- Stored and administered separate from other casework
- UNTCHI or UGR lab directors return statistical analysis (likelihood ratio or exclusion) directly to designated lab analysts working with law enforcement

### Database

- No centralized database has been developed for DNA-PROKIDS
  - Profiles are stored in a local database
  - Specimens are stored at the UNTCHI
- Policies for expungement of profiles and samples are country-specific
- Searches of the DNA-PROKIDS database are blind (analysts are not testing trios)
### Pilot Study
- Adoption fraud and missing persons cases
- Mexico and Guatemala
  - 220 cases
  - 93 missing children identified

### Haiti
- After January 2010 earthquake in Haiti, DNA-PROKIDS supplied 6,000 kits
- Also
  - Laptop computers
  - Scanners
  - Polaroid cameras
- Despite investing more than $5,000 in Haiti relief efforts, DNA-PROKIDS has received NO samples for analysis
Coordinating countries
Countries with MOUs
Countries with MOUs in process
Countries expressing interest
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<tr>
<th>Police Collaborators</th>
<th>Government / Academic Collaborators</th>
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<tr>
<td>Bolivia</td>
<td>• Guatemala</td>
</tr>
<tr>
<td>• National General Attorney</td>
<td>— National Institute of Forensic Sciences (INACIF)</td>
</tr>
<tr>
<td>El Salvador</td>
<td>• Indonesia</td>
</tr>
<tr>
<td>• National Civil Police</td>
<td>— Ejkman Institute</td>
</tr>
<tr>
<td>Mexico</td>
<td>• Malaysia</td>
</tr>
<tr>
<td>• Federal General Attorney (PGR)</td>
<td>— Institut Kimia Malaysia</td>
</tr>
<tr>
<td>• State General Attorneys (PGJs)</td>
<td>• Nepal</td>
</tr>
<tr>
<td>of Baja California, Guanajuato, and</td>
<td>— National Forensic Science Laboratory</td>
</tr>
<tr>
<td>Chihuaha</td>
<td>• Philippines</td>
</tr>
<tr>
<td>• Paraguay</td>
<td>— University of the Philippines</td>
</tr>
<tr>
<td>• National General Attorney</td>
<td>• Sri Lanka</td>
</tr>
<tr>
<td>Peru</td>
<td>— University of Colombo</td>
</tr>
<tr>
<td>• National Police</td>
<td></td>
</tr>
<tr>
<td>Thailand</td>
<td></td>
</tr>
<tr>
<td>• Royal Thai Police</td>
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</tr>
</tbody>
</table>
### Police Collaborators

- **Bolivia**
  - National General Attorney
- **El Salvador**
  - National Civil Police
- **Mexico**
  - Federal General Attorney
  - State General Attorneys of Baja California and Chihuahua
- **Paraguay**
  - National General Attorney
- **Peru**
  - National Police
- **Thailand**
  - Royal Thai Police

### Government / Academic Collaborators

- **Guatemala**
  - National Institute of Forensic Sciences (INACIF)
- **Indonesia**
  - Ejkman Institute
- **Malaysia**
  - Institut Kimia Malaysia
- **Nepal**
  - National Forensic Science Laboratory
- **Philippines**
  - University of the Philippines
- **Sri Lanka**
  - University of Colombo

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**as of April 2012...**

**over 4,200 samples**

- 588 positive identifications
- 257 illegal adoptions detected
- 218 negative identifications
Program Challenges

1. Initiating sample collection efforts in participating countries
   • Delays in communicating collection policy and procedure amongst
     – Local and national governments
     – Law enforcement
     – Collaborating institutions
     – DNA-PROKIDS
   • Criminal networks or corrupt members of government or law enforcement may obstruct intentionally program implementation

2. Mission-based appropriation of DNA-PROKIDS resources
   • DNA-PROKIDS aims to preserving the autonomy of participating countries
   • Without specifications on how resources may be used, authorities may use resources for other law enforcement purposes
   • Collection kits require minimal personal information and no information on the case investigation
3. Prioritization of anti-TIP within countries
   - Social, economic, and political contexts of participating countries often prioritize
     - Emergency aid
     - Provision of food and shelter
     - Poverty alleviation
     - Controlling drug crime and homicide
     - Managing political instability
   - May be exacerbated in times of disaster

4. International Non-LE Databases
   - Authorities in cooperating countries are very concerned about the privacy of genetic data
     - The less developed the country, the less they know about technology, the more concerned they seem
   - No infrastructure yet (nor funding) to develop
   - INTERPOL may intervene to control the data and info
Program Opportunities

1. Standardizing MOUs and managing collaboration
   • Establish conditions of MOUs in a written agreement
   • Specify conditions for ongoing collaboration or early termination of MOU
   • Identify both short- and long-term goals for partnerships
   • Tailor achievable goals for individual countries
   • Enact enforceable safeguards and regular progress assessments to ensure aims are met

2. Case management, workflow, and database search process
   • Request documentation of investigations associated with submitted cases
   • Encourage law enforcement or governments in countries to maintain records of the number, types, and uses of DNA database searches.
   • Systemize sample delivery and shipment through customs
   • Institute workflow for sample analysis and database searches
Program Opportunities

3. Development of a database
   • Develop a secure non-governmental reference database
   • Determine conditions and procedures for profile expungement
   • Identify procedures and conditions for international database searches

4. Encourage public participation
   • Research public attitudes toward genetic applications to fight TIP
   • Partner with international NGOs to build awareness and motivate cooperation
   • Implement measures to address public concerns tailored for individual communities
Prostitution Diversion Initiative

Dallas law enforcement program collects DNA from sex workers as a preemptive measure for remains identification.
### Sex Industry in Dallas, Texas

#### Demand
- In Texas, a man is charged with a misdemeanor and a small fine each time he is caught paying for services from a sex worker.
- “Johns’ Schools” have not substantially diverted demand for prostitution.

#### Supply
- The Dallas Police Department estimates ~1,800 sex workers at four truck stops.
- A woman is charged with a felony at her second arrest for prostitution.
- After release from prison, the average time for recidivism among women is 27 months.

#### Additional Information
- Minor sex workers are *de facto* victims of human trafficking.
- Rather than criminalizing sex workers, the Dallas PDI considers them victims who require support and rehabilitation.
- The PDI aims to offer long-term services to victims and options for exit from the sex industry.
Since April 2007, 60% of approached sex workers have accepted treatment.
DNA Collection Program

High Risk Potential Victims DNA Database

- Voluntary samples from sex workers contacted through the PDI
- Intended to assist post-mortem identification
  - allows law enforcement to give resolution to family
  - could be used by law enforcement as a “cold association” to open or pursue a criminal investigation
- In collaboration with
  - UNTHCI
  - Dallas Police Department Sheriff’s Office
  - Federal Bureau of Investigation’s Dallas County VICAP Unit
<table>
<thead>
<tr>
<th>Approach</th>
<th>Collection / Analysis</th>
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<tbody>
<tr>
<td>• Victims are introduced to the initiative’s optional voluntary DNA sampling</td>
<td>• If an individual consents to have their DNA collected, a sheriff will collect a sample</td>
</tr>
<tr>
<td>• In the presence of a patient advocate or counselor, victims receive pamphlets on the DNA collection service</td>
<td>• Law enforcement officials must collect samples to maintain chain of custody for future evidentiary or post-mortem identification</td>
</tr>
<tr>
<td>– presents basic information at a 3rd grade reading level</td>
<td>• UNTCHI supplies collection kits at no cost</td>
</tr>
<tr>
<td></td>
<td>• UNTCHI stores samples indefinitely, unprocessed</td>
</tr>
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</table>
Pilot Study

- Pilot program offered optional sampling to 12 women and all consented.
- Many reported that they elected the service because it was the first time law enforcement was proactively trying to protect them.

as of February 2012

157 de-identified samples stored at UNTCHI
Program Challenges

1. Utility limited to post-mortem identification
   - Current policies prevent PDI samples from being uploaded into CODIS or compared to the National Missing and Unidentified Persons System (NamUs) until the individual is reported missing.
   - Samples are not profiled until a case is reported
     - Missing persons report
     - Homicide
     - Hospitalization resulting from violent crime
   - The Potential Victims Database, therefore, cannot be used to protect profiled individuals from crime.

2. Placebo Effect utility?
   - Growing awareness of the collection procedures may provoke an indirect “placebo effect”
   - Knowledge amongst criminals and johns of program to identify remains of known sex workers may deter those targeting sex workers as victims of violent crime.
   - Effect is difficult to measure and will not become apparent until the database expands further
Program Opportunities

1. Expand utility beyond post-mortem identification
   - Post-mortem identification using database samples can give family members closure and has the potential to provide law enforcement with critical tools to develop intelligence and investigations
   - This only protects sex workers after they become victims of homicide

2. Develop protections for samples of vulnerable populations
   - Conducting research to understand
     - How sex workers view privacy concerns surrounding DNA profiling
     - How they view the potential benefits and risks of using the database to prevent crime
   - Develop database policies regarding
     - How law enforcement may use the database to prevent crime
     - When and how profiles may be expunged
     - To which indices searches of the Potential Victims Database may be compared

New Life Prevention Services Institute
Can such programs work to combat human trafficking?
# Implementation Challenges

<table>
<thead>
<tr>
<th>Database and DNA Collection</th>
<th>Political</th>
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<tbody>
<tr>
<td>• Law enforcement vs. non-LE databases</td>
<td>• Official corruption in host countries</td>
</tr>
<tr>
<td>• International communications of profiles and coordination of samples</td>
<td>• Getting government agencies to cooperate</td>
</tr>
<tr>
<td>• Training local authorities to collect properly</td>
<td>• Adoption fraud is not human trafficking</td>
</tr>
<tr>
<td>• Customs/import issues for kits and biological specimens</td>
<td>• U.S. has an interest in adoption applicants, not candidates</td>
</tr>
</tbody>
</table>
Can such programs be implemented to maximize social benefit and minimize privacy rights?
## Legal & Social Challenges

<table>
<thead>
<tr>
<th>Social Issues</th>
<th>Cultural Issues</th>
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<tbody>
<tr>
<td>• Victims of TIP are a vulnerable population</td>
<td>• DNA in indigenous peoples</td>
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<tr>
<td>– Innocent</td>
<td>– Implications of DNA testing to the culture</td>
</tr>
<tr>
<td>– Alive</td>
<td>– Use of ancestral markers</td>
</tr>
<tr>
<td>– Minors</td>
<td>– Use of phenotypic markers</td>
</tr>
<tr>
<td>– Mistrust law enforcement</td>
<td></td>
</tr>
<tr>
<td>• In adoptions, birth mothers are often sex workers and/or of indigenous populations</td>
<td></td>
</tr>
<tr>
<td>• Protect samples from misuse</td>
<td></td>
</tr>
<tr>
<td>– Law enforcement access</td>
<td></td>
</tr>
<tr>
<td>– Retention of samples</td>
<td></td>
</tr>
<tr>
<td>• Protect profiles from distribution</td>
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</tr>
</tbody>
</table>

![Image of a family](image-url)
Thanks to...

DNA-PROKIDS
- Jose Lorente, U of Granada
- Art Eisenberg, UNTCHI
- Bruce Budowle, UNTCHI

Dallas PDI
- Martha Felini, UNTCHI

Duke University
- Joyce Kim