DNA Offender Databases
Public Safety’s Greatest Weapon

Solve
Prevent
Exonerate
Save
The First 20 Years
Criminal Offender DNA Database

United Kingdom, USA, New Zealand, Australia & Western Europe

Data from early adopters pushed the rest of the world forward

Countries to follow: 50 Countries Implemented
These countries have implemented legislation/policies on a national basis to database the DNA of a defined category of criminal offender:
# Offender Database Sizes

<table>
<thead>
<tr>
<th>Databases over 1 Million</th>
<th>New Zealand - 145,512</th>
<th>Poland - 37,498</th>
</tr>
</thead>
<tbody>
<tr>
<td>China - 30,000,000 *</td>
<td>Finland - 150,188</td>
<td>Kuwait - 35,000</td>
</tr>
<tr>
<td>United States - 13,700</td>
<td>Sweden - 143,061</td>
<td>Belarus - 35,000 (2010)*</td>
</tr>
<tr>
<td>United Kingdom - 4,898,074</td>
<td>Czech Republic - 137,475</td>
<td>Belgium - 31,340</td>
</tr>
<tr>
<td>France - 2,547,499</td>
<td>Hungary - 120,765</td>
<td>Croatia - 31,199</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Databases over 100K</th>
<th>Denmark - 105,824</th>
<th>Hong Kong - 30,000*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Germany - 832,695</td>
<td>South Korea - 100,000 i</td>
<td>Slovenia - 29,332</td>
</tr>
<tr>
<td>Australia - 590,607</td>
<td></td>
<td>Romania - 25,235</td>
</tr>
<tr>
<td>Japan - 400,000 i *</td>
<td></td>
<td>UAE - 25,000 i</td>
</tr>
<tr>
<td>Russia - 300,000*</td>
<td></td>
<td>Panama - 12,000 ii</td>
</tr>
<tr>
<td>Spain - 297,494</td>
<td></td>
<td>Iceland - 5,000*</td>
</tr>
<tr>
<td>Canada - 288,660</td>
<td></td>
<td>Portugal - 3,381</td>
</tr>
<tr>
<td>Israel - 230,000 ii</td>
<td></td>
<td>Oman - 2,000*</td>
</tr>
<tr>
<td>Netherlands - 152,049</td>
<td></td>
<td>Barbados - 2,000*</td>
</tr>
<tr>
<td>Singapore - 190,000 iii</td>
<td></td>
<td>Macedonia - 1,412</td>
</tr>
<tr>
<td>Austria - 187,331</td>
<td></td>
<td>Cyprus - 389</td>
</tr>
<tr>
<td>Switzerland - 169,317</td>
<td></td>
<td>Brazil - 80</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Databases over 50K</th>
<th>Taiwan - 91,831</th>
<th>2014 figures</th>
</tr>
</thead>
<tbody>
<tr>
<td>Databases 50K or less</td>
<td>Jordan - 74,000 i</td>
<td>i 2013</td>
</tr>
<tr>
<td></td>
<td>Chile - 72,603</td>
<td>ii 2012</td>
</tr>
<tr>
<td></td>
<td>Norway - 55,428</td>
<td>lii 2011</td>
</tr>
<tr>
<td></td>
<td>Latvia - 53,327</td>
<td>* estimate</td>
</tr>
<tr>
<td></td>
<td>Slovakia - 46,769</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Estonia - 46,494</td>
<td></td>
</tr>
</tbody>
</table>

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National Database Implementation Countries

- **Ireland**
  - Legislation passed June 2014
  - Limited to more serious crimes

- **Italy**
  - Legislation passed in 2009
  - Minister of Justice declares implementation in 2015

- **Greece**
  - Legislation passed in 2009
  - Implementation plans uncertain
Parliament passed database legislation – September 2014
- Implementation schedule is unknown
- DNA infrastructure for national database is limited

- Database legislation passed in late 2013
- Lab construction underway to handle new samples created by legislation
- Implementation expected in 2016
Significant Pilot Countries

Thailand
- 90,000 prisoner samples by 2016
- Arrestee testing legislation under discussion

Vietnam
- CODIS agreement signed with FBI – March 2015
- 50,000 prison samples by 2016
- 150,000 samples by 2018
- Arrestee testing legislation under discussion

Mexico
- Multiple Mexican states operate stand alone databases
- Crime pressure forcing discussion of national database program
CODIS

GOING FORWARD

CODIS has become the International DNA Database software standard...

- Of the 50 countries that have implemented nationwide criminal offender DNA database programs, 35 are using CODIS software.
CODIS


Bangkok Post

FBI to help set up DNA database

The Justice Ministry is teaming up with the US Federal Bureau of Investigation (FBI) to develop a national DNA database to help police solve violent crimes. DNA samples in Thailand are currently collected on a case-by-case basis, with...
State of Punjab (Lahore) has created a database of 5,000 prisoners & suspects

- No national database discussion

- Notable unofficial database
- Legislation under discussion
Other Countries with Active Legislation Discussions Underway

- **Turkey**
  - Solid DNA infrastructure in government
  - Ministry of Justice’s Legal Medicine positioned to lead database effort, not Turkish police
  - Legislation likely in 2016

- **Peru**
  - Legislation under discussion in the Peruvian Congress
  - Disagreement on who will operate the database has caused delays

- **India**
  - Legislation in process and expected to pass in 2015
Other Countries with Active Legislation Discussions Underway

Establishment of a forensic DNA databank pushed

Total views: 96 09 April 2015 07:47:01 AM
Writer: Jazmin S. Camero, Media Relations Service-PRIB

A lawmaker has filed a bill establishing a forensic deoxyribonucleic acid or DNA databank to boost the country’s criminal justice system.

Rep. Mark A. Villar (Lone District, Las Piñas City), author of House Bill 5372, said recent advances in forensic DNA testing are now paving the way for reforming the manner by which cases are resolved in courts of law through the way suspected offenders are apprehended during criminal investigation.

- Arrestee testing legislation – Introduced April 2015
  - Philippines National Police (PNP) is actively building the DNA infrastructure
  - CODIS installed at PNP in 2014
Many of the remaining 117 countries will face challenges to develop databases.

**2015-2025 Predictions**

- **80 Countries, 100-150 Million Profiles**

- Average per capita annual income is below $5,000 USA

**Conclusion:** Many of the remaining countries will need new methods to move forward.

**Countries:**
- India
- Indonesia
- Brazil
- Pakistan
- Nigeria
- Bangladesh
- Mexico
- Philippines
- Vietnam
- Iran
- Egypt
- Turkey
- Thailand
- Italy
- South Africa
- Colombia
- Kenya
- Argentina
- Ukraine
- Algeria
- Uganda
- Morocco
- Saudi Arabia
- Peru
- Venezuela
- Sri Lanka
- Kazakhstan
- Ecuador
- Greece
- Ireland
- Botswana
- Mexico
Arrestee Testing

Marper v. United Kingdom - 2007

King v. Maryland - 2013

Arrestee Testing is Constitutional & Acceptable
- If Profile & Sample are Destroyed when not convicted
THE REAL WINNERS
OF OFFENDER DNA DATABASES:
VICTIMS AND SOCIETY


AUTHORIZES OVER $2 BILLION TO
BE SPENT ON FORENSIC DNA

DRAMATIC IMPACT ON STATES’
ABILITY TO REDUCE BACKLOGS
AND EXPAND DATABASES
THE REAL WINNERS
OF OFFENDER DNA DATABASES:
VICTIMS AND SOCIETY

Debbie Smith with Vice President Biden

Debbie Smith & Sec. of State Hilary Clinton

A LIFE INTERRUPTED
A new original movie inspired by a true story

Debbie Smith with President Biden
The Case that Caused Congress to Act
Belo Horizonte Serial Murderer - Marco Trigueiro

2006: Brazilian Congress rejects legislation to allow DNA to be taken from every convicted offender.

2008: Marco Trigueiro released from prison in 2008 for a violent crime conviction - no DNA taken as legislation failed.

2009: Rapes and murders five women in Belo Horizonte during 2009, leaving DNA at all crime scenes.

2010: Families of victims realize that most of the victims would still be alive if Congress would have passed the legislation in 2006.

2011: Families organize and lobby Congress to pass legislation to save lives in the future.

2012: President Dilma signs legislation.
CE and STR Technology
Dominating the First 20 (30) Years
Legislative Impact of New DNA Technology

Next Generation Sequencing (NGS)

Rapid DNA
GOING FASTER WITHOUT LAB PERSONNEL - WHAT’S THE IMPACT?

- Reference Samples
  - US Legislation - Necessary to upload to NDIS
  - State Legislation
    - Many states will require legislation to upload to SDIS
    - Concerns have also been raised that public record and evidentiary laws will also need to be changed.

- Casework
  - Inevitable – Protocols will be necessary
  - Legislative restrictions will likely develop

- Ownership
  - Putting DNA in the hands of law enforcement will increase utilization
Rapid DNA
Creating New Databasing Application

Military

Boarder Control - Detainee

Immigration/Refugee Process

The 117 Countries Who May Not Have Infrastructure
Next Generation Systems
Impact on Forensic DNA Policy and Legislation

How deep should we look?

Casework:
- More STRs
- mtDNA
- “Appearance” SNP’s
- YSTRs/Other Pedigree Assisting Markers
- “Personal Information” SNP’s
- Impact on Innocent Suspects
- Duty of Government to Inform

Prediction:

We will see legislation to regulate the use of NGS in casework.

International discussion and protocols would be beneficial
Reference Samples:

Existing loci NGS debate and impact on legislation

Proposed expanded loci debate and impact on legislation
Civil DNA Databases

Peru Newborn Pilot

Discussion for whole population databases grows in the Middle East

Changing Attitudes
Denmark Study:
“Nearly 80% say that cataloging the DNA of everyone in the country is a good idea.”
- Copenhagen Post (February 4, 2015)
Impact of Personalized Medicine on the Criminal DNA Database Debate

Privacy issues with Personalized Medicine

Whole Genome
Health Systems
Doctors
Research Institutions
Multiple Government Agencies
Insurance Companies
Big Data Companies
Paternity Awareness
Genetic Weakness

Privacy issues with Human Identification Databases

Limited Identity Genetic Markers
Limited Government Agencies