



Home Office



# National DNA Database Strategy Board Annual Report 2015/16

# **National DNA Database Strategy Board Annual Report 2015/16**

Presented to Parliament pursuant to Section 63AB(8) of the Police and Criminal Evidence Act 1984

February 2017

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## Ministerial Foreword

The Government remains committed to ensuring that the National DNA Database (NDNAD) continues to be an effective tool for the police in helping to solve crimes whilst at the same time preventing those who have not been convicted of any crime from having their DNA profile retained indefinitely.

This report demonstrates the continuing effectiveness of NDNAD in helping to solve crime. The number of matches made between profile records uploaded onto the database against those already on it rose slightly from last year's figure of 63.2% to 63.3%; this is the highest it has been since records began. In 2015/16, NDNAD provided 31,173 routine matches including to 390 homicides and 607 rapes and 440 urgent matches including to 63 homicides and 83 rapes.

This year has continued to see advancements in technology. A small number of profile records obtained from rapid DNA technology, which allows a sample to be processed within a matter of hours instead of weeks, are being uploaded to NDNAD for the first time. This will help the police to investigate crimes and bring offenders to justice more quickly than ever before.

I am confident that, going forward, NDNAD will continue to be at the forefront of the Government's drive to cut crime and prosecute offenders.

A handwritten signature in black ink, appearing to read 'Brandon Lewis', with a long horizontal flourish extending to the right.

**Rt Hon Brandon Lewis MP**

**Minister of State for Policing and the Fire Service**

## Chair of the Strategy Board's Foreword

I am delighted to present this my first report as the new Chair of the National DNA Database and Fingerprint Strategy Board, having previously chaired the National DNA Database Strategy Board between 2007 and 2011. My thanks go to my predecessor, Chris Sims, whose hard work as Chair of the Board has ensured that it has provided effective governance and oversight of the use of DNA to bring offenders to justice.

Bringing the governance of the police fingerprint database under the Strategy Board is an important step in ensuring clearer and more transparent governance.

Throughout the year, the Centralised Elimination Database project has continued to make progress. Once completed, it will improve the ability of the police to eliminate crime scene investigators, and those responsible for processing DNA, from an investigation, thereby helping to speed up the criminal justice process.

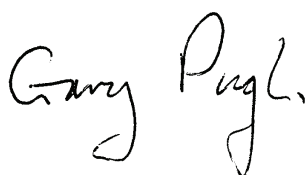
Another important area is the continuing progress made on the development of rapid DNA technology. This technology has the potential to revolutionise the way in which DNA profile records are derived, cutting processing time from several days to a matter of hours. The use of Rapid DNA Technology has been successfully piloted meaning that profile records can be uploaded to NDNAD; as of 31<sup>st</sup> March 2016, 414 such profile records had been uploaded.

Perhaps the most crucial development, though, in terms of NDNAD, is the progress made by the Home Office Biometrics Programme in delivering a replacement to the technology on which NDNAD is based. Once complete, the new technology will enable NDNAD to make better links with the comparable database in other countries enabling the police, not just in this country, but abroad, to bring even more offenders to justice.

Finally, the match rate of NDNAD continues to remain high at 63.3% demonstrating its continuing effectiveness in helping to bring offenders to justice.

Over the coming year, I look forward to seeing NDNAD develop into an even more effective tool for tackling crime.

**Gary Pugh**

A handwritten signature in black ink that reads "Gary Pugh". The signature is written in a cursive style with a large initial 'G' and 'P'.

**Chair, National DNA Database and Fingerprint Strategy Board**

# 1. The National DNA Database (NDNAD)

## 1.1 About NDNAD

### 1.1.1 Introduction

NDNAD was established in 1995. It holds electronic records of deoxyribonucleic acid (DNA), known as profile records, taken from individuals and crime scenes, and provides the police with matches linking an individual to a crime scene or a crime scene to another crime scene. Between April 2001 and March 2016, it produced **611,557**<sup>1</sup> matches to unsolved crimes.

### 1.1.2 DNA profile records

NDNAD holds two types of DNA profile:

#### i. Individuals

The police take a 'DNA sample' from every individual that they arrest. This consists of their entire genome (the genetic material that every individual has in each of the cells of their body) and is usually taken by swabbing the inside of the cheek to collect some cells. The sample is then sent to an accredited laboratory, known as a 'forensic service provider' (FSP), who look at discrete areas of the genome (which represent only a tiny fraction of that individual's DNA) plus the sex chromosomes (XX for women and XY for men<sup>2</sup>) and use these to produce a 'subject' profile consisting of 16 pairs of numbers (which correspond to the 16 areas analysed) and a sex marker derived from the sex chromosomes. The profile is almost unique; the chance of two people having identical profile records is less than one in a billion<sup>3</sup>. Aside from sex, a DNA profile does not reveal any other characteristics of the individual it is taken from such as their race or physical appearance.

An example profile would be:

**X,Y; 14,19; 9.3,9.3; 12,15; 22,23; 28,30; 11,14; 19,20; 9,12; 13,15; 18,18; 15,15; 10,13; 14,16; 18,21; 15,16; 24,29**

The DNA profile is loaded to NDNAD where it can be searched against DNA profile records recovered from crime scenes.

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<sup>1</sup> This figure includes matches between individuals and crime scenes and between different crime scenes.

<sup>2</sup> An individual's DNA is contained within discrete structures within a cell known as chromosomes. Men have a copy of an X and Y chromosome whereas women have two copies of the X chromosome.

<sup>3</sup> As agreed with the Forensic Science Regulator and the Crown Prosecution Service, in order to give a conservative figure, routine statistical reporting of DNA evidence in court continues to be reported as 'one in a billion'. This is to ensure that the courts continue to understand the likelihood that the DNA found could match to a different individual than the one on trial. Certain cases might be reported with a more precise probability; this is assessed on a case-by-case basis.



## ii. Crime scenes

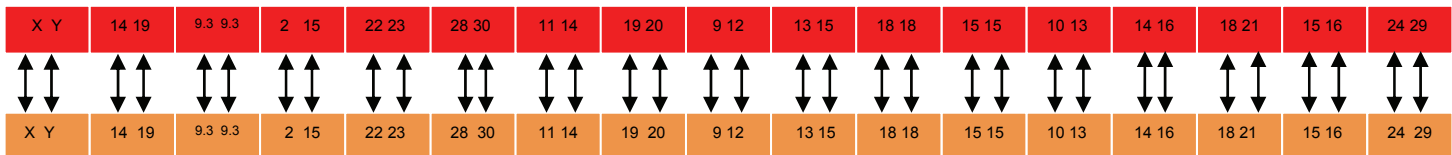
DNA is recovered from crime scenes by police Crime Scene Investigators (CSIs). Nearly every cell in an individual's body contains a complete copy of their DNA so there are many ways in which an offender may leave their DNA behind at a crime scene (for example, in blood or skin cells left on clothing or surfaces) even just by touching something. CSIs examine places where the perpetrator of the crime is most likely to have left traces of their DNA behind. Items likely to contain traces of DNA are sent to an accredited laboratory for analysis. If the laboratory recovers any DNA, they will produce a crime DNA profile which can be loaded to NDNAD.

### 1.1.3 Matches

NDNAD searches the DNA profile records from crime scenes against the DNA profile records from individuals or other crime scenes. A match occurs when the 16 pairs of numbers (and sex marker) representing an individual's DNA are an exact match to those in the DNA left at the crime scene or when a crime scene profile matches another crime scene profile.

#### i. Full Match

The diagram below illustrates a match between a subject profile (in red) and a crime scene profile (in orange).

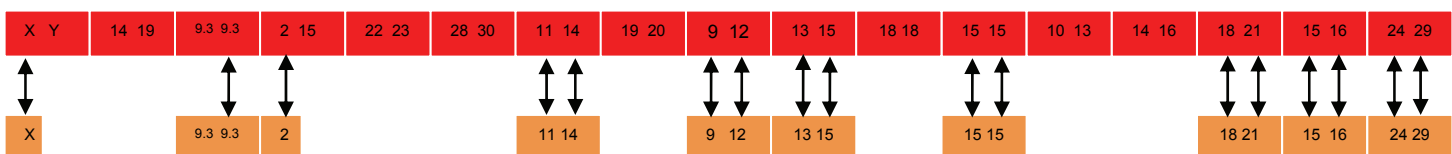


Where a match is made, this indicates that the individual may be a suspect in the police's investigation of the crime. It may also help to identify a witness or eliminate other people from the police investigation.

#### ii. Partial Match

Sometimes it is not possible to recover a complete DNA profile from the crime scene; for instance where the perpetrator has tried to remove the evidence or because it has become degraded. In these circumstances, a partial crime profile is obtained, and searched against individuals on NDNAD, producing a partial match.

The diagram below illustrates a partial match between a subject profile (in red) and a crime scene profile (in orange).



Partial matches provide valuable leads for the police but, depending on how much of the information is missing, the result is likely to be interpreted with less certainty than a full match.

### 1.1.4 Familial searches

One half of an individual's DNA profile is inherited from their father and the other half from their mother. As a result, the DNA profile records of a parent and child, or two siblings, will share a significant proportion of the 16 pairs of numbers. This means that, in cases where the police have found the perpetrator's DNA at the crime scene, but they do not have a profile on NDNAD, a search of the database, known as a 'familial search', can be carried out to look for possible close relatives of the perpetrator. Such a search may produce a list of possible relatives of the offender. The police use other intelligence, such as age and geography, to narrow down the list before investigating further. The search is computerised and involves only the DNA profile records on NDNAD.

Due to the cost and staffing needed to carry out familial searches, they are used only for the most serious of crimes. All such searches require the approval of the NDNAD Strategy Board<sup>4</sup>. A total of **17** familial searches were carried out in 2015/16.

### 1.1.5 Identical siblings

The inherited nature of DNA means that identical siblings will share the same DNA profile. However, even identical siblings have different fingerprints so these can be used to differentiate them. Fingerprints may be taken by the police electronically from any individual that they arrest. They are then scanned into IDENT1, the national fingerprint database. Unlike DNA (where samples have to be sent to a laboratory for processing) fingerprints can be loaded instantly allowing police to verify a person's identity at the police station, thereby ensuring that their DNA profile and arrest details are stored against the correct record.

As at 31<sup>st</sup> March 2016, there were **8,376** sets of identical twins and **ten** sets of identical triplets on NDNAD.

### 1.1.6 Who runs NDNAD?

Since 1<sup>st</sup> October 2012, NDNAD has been run by the Home Office on behalf of UK police forces. Fewer than **30** vetted Home Office staff have access to it. Police forces own the profile records on the database, and receive notification of any matches, but they do not have access to it.

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<sup>4</sup> In its Forensic Science Strategy published in March 2016, the government announced its intention to extend the remit of the NDNAD Strategy Board to cover fingerprints. Changes to the governance rules to reflect this will be brought forward in due course. However, as this did not occur until after the period covered by this report, we have continued to refer to them as the National DNA Database Strategy Board. The Strategy is available at <https://www.gov.uk/government/publications/forensic-science-strategy>.

## i. The NDNAD Strategy Board

Governance and oversight of NDNAD<sup>5</sup> is provided by the NDNAD Strategy Board. Since 31<sup>st</sup> October 2013, the Board has operated on a statutory basis.<sup>6</sup> The Board has a number of statutory functions:

- it must issue guidance about the destruction of profile records retained under the Protection of Freedoms Act 2012 (PoFA)<sup>7</sup>;
- it may issue guidance about the circumstances under which applications for retention under PoFA<sup>8</sup> may be made to the Commissioner for the Use and Retention of Biometric Material ('The Biometrics Commissioner')<sup>9 10</sup>;
- it must publish governance rules which must be laid before Parliament<sup>11</sup>; and
- it must make an annual report to the Home Secretary about the exercise of its functions<sup>12</sup>.

The governance rules<sup>13</sup> set out in more detail the way in which the Board operates, including its objectives<sup>14</sup> which are to ensure that:

- the most effective and efficient use of NDNAD is made to support:
  - the interests of national security;
  - terrorist investigations;
  - the prevention and detection of crime;
  - the investigation of an offence or the conduct of a prosecution; and
  - the identification of a deceased person.
- the public are aware of the governance, capability and limitations of NDNAD and that confidence is maintained in its use across all communities;
- future developments in science and technology and delivers improvements in efficiency and effectiveness across the criminal justice system;
- the use of NDNAD is proportionate, ethical and transparent throughout the criminal justice system; and
- the most ethical and effective use is made of international searching of UK DNA profile records.

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<sup>5</sup> As set out under section 3 of the governance rules.

<sup>6</sup> As set out under section 63AB of the Police and Criminal Evidence act 1984 (PACE) as inserted by section 24 of PoFA.

<sup>7</sup> Section 63AB(2), Police and Criminal Evidence Act 1984.

<sup>8</sup> Ibid., section 63G.

<sup>9</sup> Ibid., section 63AB(4).

<sup>10</sup> The Biometrics Commissioner's latest annual report is available at:

<https://www.gov.uk/government/news/publication-of-the-biometrics-commissioners-second-annual-report>

<sup>11</sup> Ibid., section 63AB(6).

<sup>12</sup> Ibid., section 63AB(7).

<sup>13</sup> The governance rules are published at: <https://www.gov.uk/government/publications/national-dna-database-strategy-board-governance-rules>.

<sup>14</sup> Ibid., section 4.

The core members of the Board are:

- a representative of the National Police Chiefs' Council
- a representative of the Home Office;
- a representative of the Association of Police and Crime Commissioners;

Additional members<sup>15</sup> include:

- the Chair of the DNA Ethics Group;
- the Information Commissioner (or his representative);
- the Forensic Science Regulator<sup>16</sup> (or her representative);
- the Biometrics Commissioner (or his representative);
- representatives from the police and devolved administrations of Scotland and Northern Ireland; and
- such other members as may be invited.

The rules go on to specify:

- the responsibilities of the Board;
- the appointment of the Chair;
- rules around audits;
- the delegation of functions; and
- the proceedings of the Board.

They may be added to, repealed or amended with the agreement in writing of the Home Secretary.

## ii. NDNAD Ethics Group

Established in 2007, the Ethics Group is an independent group that provides advice to Ministers and the Strategy Board on the ethical operation of NDNAD. Its most recent Annual Report was published on 16<sup>th</sup> November 2016<sup>17</sup>.

In its report, the Ethics Group made the following recommendations:

1. The retention times directed in the Protection of Freedoms Act 2012 for the retention of DNA samples and fingerprints should also be applied to the retention of custody images.
2. Robust governance structures should be in place for all police databases that contain biometric identifiers, including custody images. Careful consideration should be given to the most appropriate mechanisms to facilitate take-up and compliance with a biometrics ethics framework.

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<sup>15</sup> Ibid., section 5.

<sup>16</sup> The Regulator's latest annual report is available at: <https://www.gov.uk/government/publications/forensic-science-regulator-annual-report-2016>

<sup>17</sup> The report is available at: <https://www.gov.uk/government/publications/national-dna-database-ethics-group-annual-report-2015>

3. The Ethics Group recommended that the Cabinet Office incorporates continuous ethical consideration into the 'Ethical Framework for Use of Data'.
4. New next generation sequencing (NGS) techniques must be considered in a stepwise fashion, both practically and ethically. A regulatory framework should be developed, in tandem with technology development, to oversee the ethical issues and the collection, compilation, storage, sharing and use of information and data derived from NGS technologies.

The Government will carefully consider the recommendations made by the Ethics Group and will publish a response in due course.

## 1.2 Who is on NDNAD?

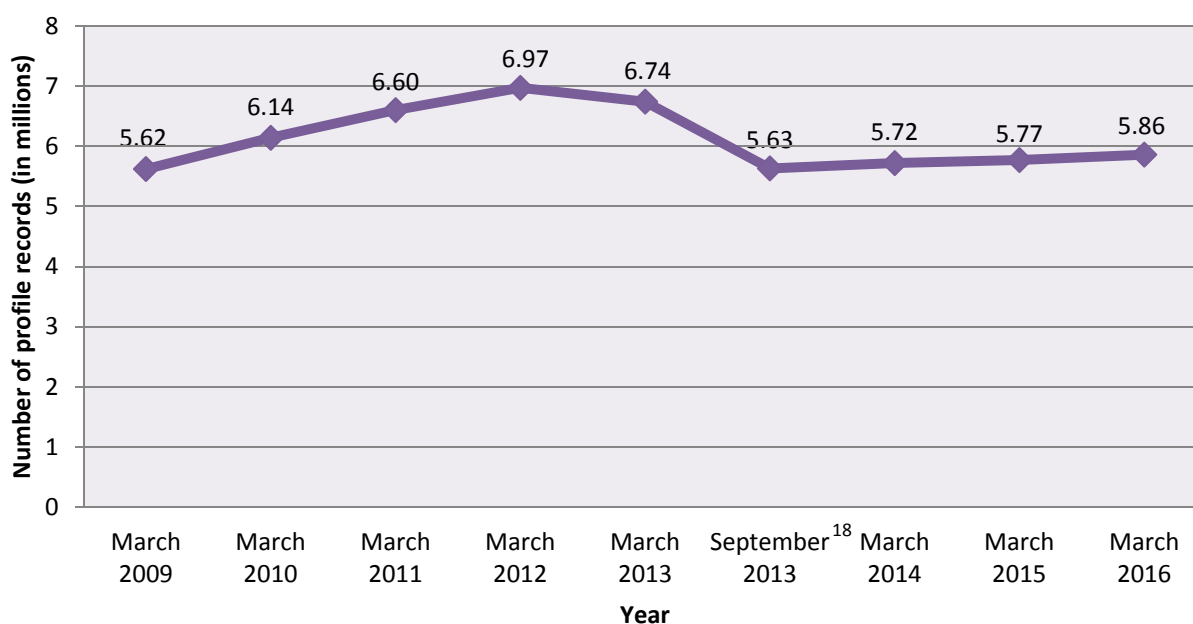
### 1.2.1 Number of profile records held on and deleted from NDNAD

As at 31<sup>st</sup> March 2016, NDNAD held **5,860,642** subject profile records and **519,678** crime scene profile records. In 2015/16, **292,311** new subject profile records were loaded to NDNAD, together with **36,250** new crime scene profile records.

Some individuals have more than one profile on NDNAD. This can occur where they are sampled twice under different names. **12.0%**<sup>18</sup> of the profile records on NDNAD are duplicates of an individual already sampled. Allowing for these duplicates, the estimated number of individuals on NDNAD is **5,156,268**.

In 2015/16, **205,977** subject profile records were deleted from NDNAD (including **53** under the 'Deletion of Records from National Police Systems guidance ('the Record Deletion Guidance'); see '2.4 Early Deletion'). Additionally, **4,547** crime scene profile records were deleted

**Figure 1: Number of subject profile records held on NDNAD (in millions) (2008/09 to 2015/16)<sup>19</sup>**

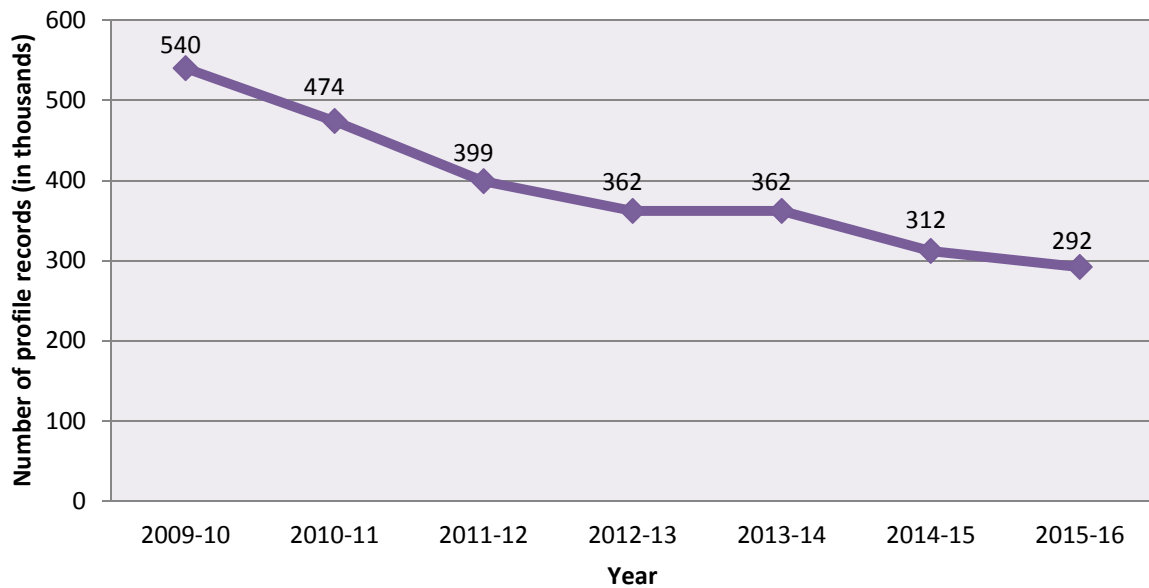


<sup>18</sup> This figure is based on the assumption that a subject profile record that matches a second subject profile record is one individual (unless determined to belong to identical twins or triplets).

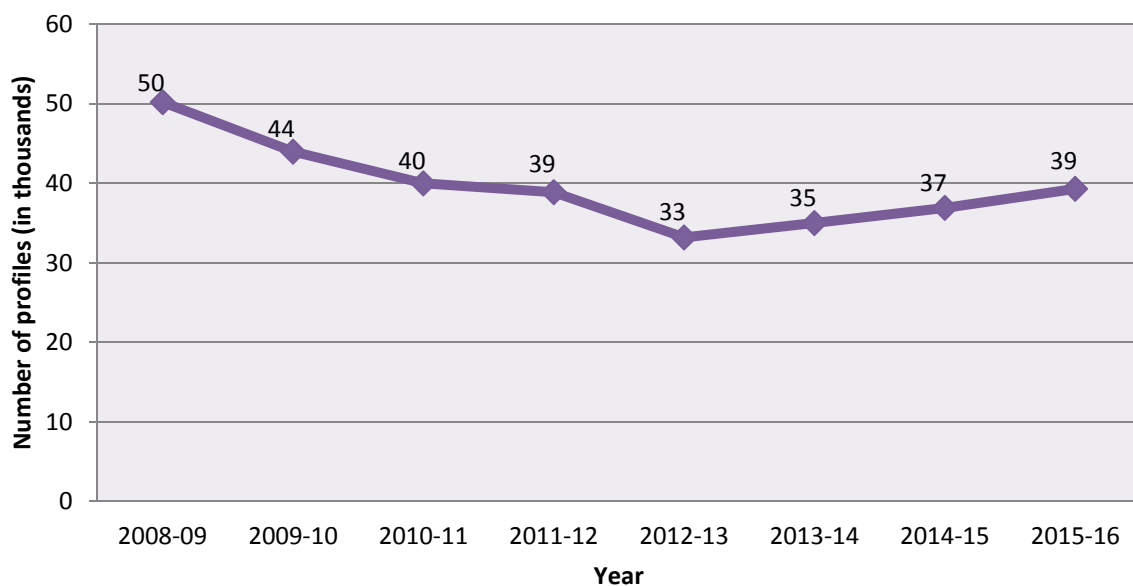
<sup>19</sup> Source: NDNAD management information.

<sup>20</sup> The deletion of profiles which did not meet the retention criteria for profile records brought in by PoFA was completed by 30th September 2013 hence the drop in the number of profile records.

**Figure 2a: Number of subject profile records loaded onto NDNAD per year (in thousands) (2008/09 – 2015/16)<sup>21 22 23</sup>**



**Figure 2b: Number of crime scene profile records loaded onto NDNAD per year (in thousands) (2008/09 – 2015/16)<sup>24 25 26</sup>**



<sup>21</sup> Due to technical difficulties accessing the management information system used to record data on NDNAD, the figures for 2014/15 and 2015/16 has been calculated using a different methodology from previous years and are not directly comparable with the figures used in Table 1.

<sup>22</sup> There are some NDNAD profile records held for which the load date is unknown; these are not included in these figures.

<sup>23</sup> Ibid. 19.

<sup>24</sup> Ibid. 21.

<sup>25</sup> Ibid. 22.

<sup>26</sup> Ibid. 19.

**Table 1: Number of crime scene profile records loaded by crime type (2015/16)<sup>27 28 29</sup>**

<b>Crime type</b>	<b>Number of crime scene profile records loaded</b>	<b>Proportion of total number of crime scene profile records loaded (%)</b>
Burglary (including aggravated)	15,495	42.7%
Vehicle Crime	5,853	16.1%
Criminal Damage	2,765	7.6%
Violent Crime	2,158	6.0%
Drugs	1,862	5.1%
Robbery	1,430	3.9%
Theft	967	2.7%
Rape	752	2.1%
Murder, manslaughter and attempted	474	1.3%
Traffic (including fatal)	464	1.3%
Firearms	389	1.1%
Other sexual offences <sup>27</sup>	302	0.8%
Arson and fire investigations	251	0.7%
Fraud	244	0.7%
Public Order	197	0.5%
Abduction and kidnapping	71	0.2%
Blackmail	22	0.1%
Explosives	7	0.0%
Other	2,547	7.0%
<b>TOTAL</b>	<b>36,250</b>	<b>100%</b>

<sup>27</sup> Ibid. 19.

<sup>28</sup> Offence types are recorded by forensic staff processing the DNA sample and do not correspond to police recorded crime codes.

<sup>29</sup> Due to technical difficulties accessing the management information system used to record data on NDNAD, these figures have been calculated using a different to the methodology used prior to 2014/15 and are not directly comparable to the figures used in Figures 2a & b.



## 1.2.2 Geographical origin of subject profile records on NDNAD

NDNAD holds profile records from all UK police forces (as well as the Channel Islands and the Isle of Man) but only profile records belonging to England and Wales forces are subject to PoFA<sup>30</sup>. Scotland and Northern Ireland also maintain separate DNA databases; however, due to the likelihood of offenders moving between UK nations, profile records loaded to these databases are also loaded to NDNAD.

**Table 2: Number of subject and crime scene profile records retained on NDNAD by nation (as at 31<sup>st</sup> March 2016)<sup>31 32</sup>**

Nation	Subject profile records	Crime scene profile records	TOTAL
England <sup>33</sup>	5,036,037	474,480	5,510,517
Scotland	341,611	17,013	358,624
Wales	314,653	21,224	335,877
Northern Ireland	130,421	4,995	135,416
Other <sup>34</sup>	37,920	1,966	39,886
<b>TOTAL</b>	<b>5,860,642</b>	<b>519,678</b>	<b>6,380,320</b>

## 1.2.3 Sex, age and ethnicity of individuals on NDNAD

The subject profile records held on NDNAD all come from people who have been arrested for an offence, so the composition is different from that of the general population. For example, only half the UK population is male but the majority of DNA profile records belong to men, because the majority of those arrested are male.

<sup>30</sup> Scotland and Northern Ireland have their own retention regime.

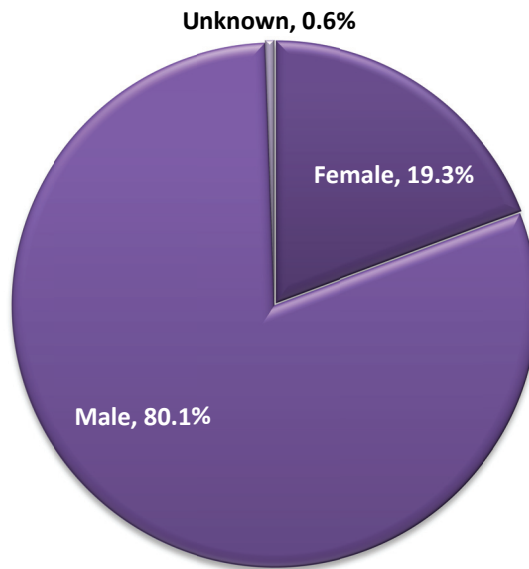
<sup>31</sup> Ibid. 19.

<sup>32</sup> NDNAD does not hold individuals' addresses. The geographical information provided is based on the location of the police force that submitted the profile record.

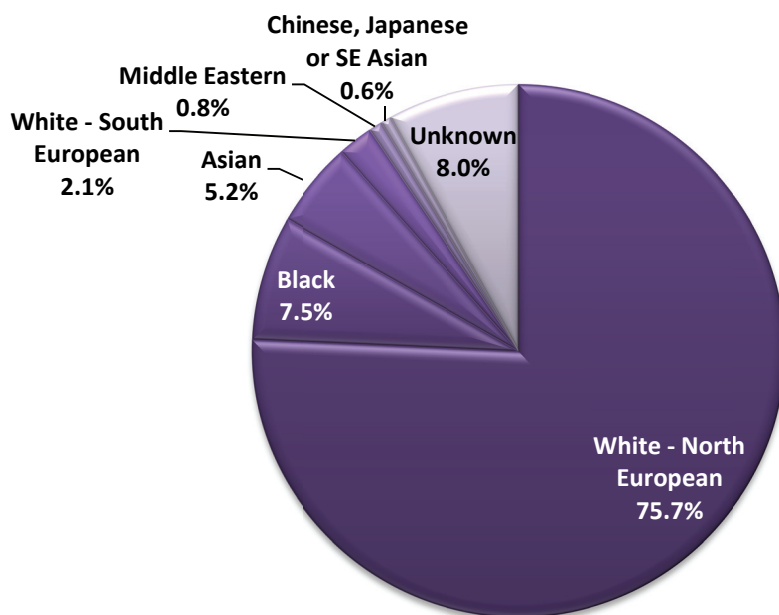
<sup>33</sup> Includes the British Transport Police

<sup>34</sup> Includes Isle of Man, Guernsey, Jersey, Channel Islands, Ministry of Defence police forces, Criminal Records Office, National Crime Agency, Her Majesty's Revenue and Customs, Criminal Cases Review Commission and the Prisoner Sampling Programme.

**Figure 3a: Proportion of subject profile records on NDNAD by sex (as at 31<sup>st</sup> March 2016)<sup>35</sup>**



**Figure 3b: Number of subject profile records on NDNAD by ethnicity (as at 31<sup>st</sup> March 2016)<sup>36 37</sup>**

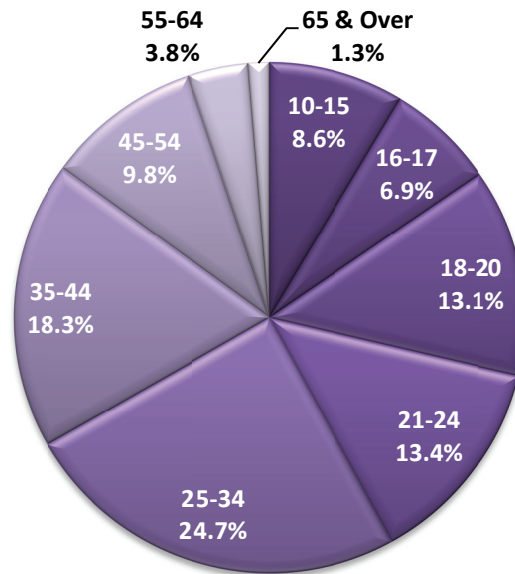


<sup>35</sup> Ibid. 19.

<sup>36</sup> Ibid. 19.

<sup>37</sup> The ethnicity of the individual is determined by the police officer who took the DNA sample. Unknown profile records refer to those where the officer either selected 'ethnicity unknown' on the recording form or where there was no ethnicity data accompanying the profile record.

**Figure 3c: Number of subject profile records by age at time of loading onto NDNAD (as at 31<sup>st</sup> March 2016)<sup>38 39</sup>**



These data are published quarterly on NDNAD web page on [www.gov.uk](http://www.gov.uk)<sup>40</sup>. More comprehensive data, which can be compared to census data on the age, sex and ethnicity of the population as a whole, are provided as part of the datasets published alongside this report. The age of criminal majority in England and Wales is 10 and the data shows that there are no profiles from children aged under 10 on NDNAD.

<sup>38</sup> Ibid. 19.

<sup>39</sup> This is calculated from the date of birth provided by the individual to the police officer at the time of arrest.

<sup>40</sup> The data are available at: [www.gov.uk/government/organisations/home-office/series/dna-database-documents](http://www.gov.uk/government/organisations/home-office/series/dna-database-documents)

## 1.3 How many crimes does NDNAD solve?

### 1.3.1 Introduction

NDNAD matches crime scenes profile records against subject profile records and other crime scene profile records, providing the police with invaluable information that helps them to identify possible suspects and solve crimes (albeit that a DNA match in itself is not sufficient to secure a conviction so not every match will lead to a crime being solved).

### 1.3.2 Types of searches

#### i. Routine loading and speculative searching

As described at paragraph 1.1.2, samples are usually profiled and the profile records are then loaded to NDNAD for routine searching. Routine matches made from profile records loaded to NDNAD are shown in table 3a below.

#### ii. Non-Routine and urgent speculative searches

In order for a profile to be uploaded to NDNAD, it must consist of a minimum of four pairs of numbers and a sex marker (for crime scene profile records) and a full profile<sup>41</sup> (for subject profile records). Where this criterion is not met, it is nonetheless possible to carry out a non-routine search of NDNAD. For the most serious crimes, NDNAD provides an urgent non-routine search service which is available 24 hours a day.

Matches made following non-routine searches are shown in table 3b and those made following urgent searches in table 3c.

### 1.3.3 Match rate

#### i. Overall match rates

In 2015/16, the chance that a crime scene profile, once loaded onto NDNAD, matched against a subject profile stored on NDNAD was **63.3%**<sup>42</sup>. This match rate has increased year on year as the Database grows more effective. It does not include crime scenes that match another crime scene on loading, or where a profile was deleted in the same month as it was loaded.

Further matches will occur when a new subject profile is added to NDNAD and matches to a crime scene profile already on it. As at 31<sup>st</sup> March 2016, there were **183,762**<sup>43</sup> crime scene profile records on NDNAD that had not yet been matched.

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<sup>41</sup> The profile record may either be from DNA-17 (i.e. 16 numbers plus a sex marker) or from the previous system SGMPlus (i.e. 10 numbers plus a sex marker).

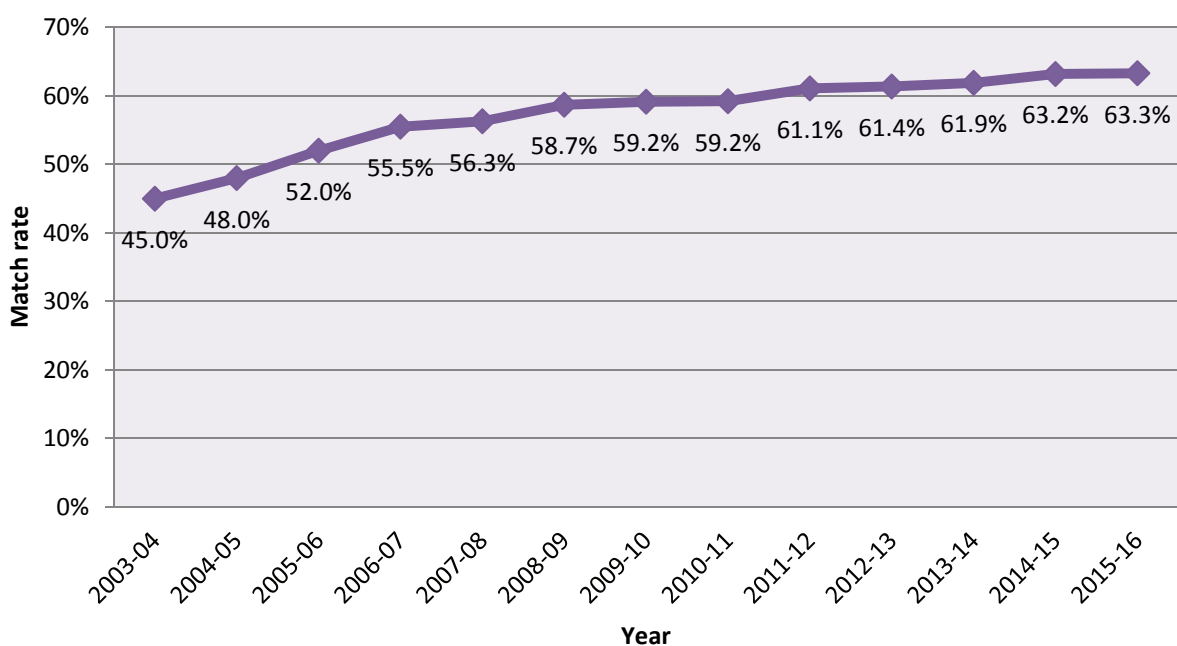
<sup>42</sup> Excludes crime scene to crime scene matches.

<sup>43</sup> More than one crime scene profile record may be held for a single crime. Crime scene profile records that matched before 2002 are included in this figure.

The crimes relating to these crime scenes might be solved if the perpetrator’s DNA was taken and added to NDNAD. Every individual who is arrested will have their DNA searched against existing crimes on NDNAD, even if their profile is subsequently deleted.

While the UK has one of the largest Databases containing crime and subject DNA profiles, other EU countries are developing large DNA databases that will enable the detection of serious crime and the identification of terrorists across international borders. See paragraph 1.5.1.

**Figure 4: Match rate on loading a crime scene profile (2003/04 to 2015/16)<sup>44</sup>**



## ii. Number of matches

In 2015/16, NDNAD produced **440** subject to crime scene matches following on from an urgent search of NDNAD, including to **63** homicides<sup>45</sup> and **83** rapes. It also produced **29,935** routine subject to crime scene matches, including to **390** homicides<sup>46</sup> and **607** rapes. It provided **1,238** crime scene to crime scene matches (this information is useful in helping to identify serial offenders). It also provided **2,143** partial matches following a non-routine search. Although a partial match has less evidential value than a full match, it can nonetheless provide the police with useful intelligence about a crime.

<sup>44</sup> Ibid 19.

<sup>45</sup> This includes murder, attempted murder and manslaughter.

<sup>46</sup> Due to issues with the NDNAD Management Information system in 2014/15, matches were counted at sample (rather than case level) in this year.

**Table 3a: Number of routine subject to crime scene matches made by crime type (2015/16)<sup>47 48 49</sup>**

<b>Crime</b>	<b>Matches</b>
Burglary (including aggravated)	11,945
Vehicle crime	5,078
Criminal damage	2,595
Violent crime	1,849
Drugs	1,581
Robbery	1,170
Theft	845
Rape	607
Murder (including attempted) and manslaughter	390
Traffic (including fatal)	442
Firearms	315
Other sexual offences	253
Arson and fire investigations	200
Fraud	173
Public order	170
Abduction and kidnapping	53
Blackmail	16
Explosives	8
Other <sup>50</sup>	2,245
<b>TOTAL</b>	<b>29,935</b>

<sup>47</sup> Ibid. 19.

<sup>48</sup> Offence types are recorded by forensic staff processing the DNA sample and do not correspond to police recorded crime codes.

<sup>49</sup> Because of the way in which the data are collected throughout the year, it is not possible to provide figures for the number of searches or the match rate for this table as has been provided for tables 3b & c.

<sup>50</sup> Includes other volume, serious and terrorism offences.

**Table 3b: Number of non-routine search matches made by crime type (2015/16)<sup>51 52</sup>**

<b>Crime</b>	<b>Searches</b>	<b>Matches</b>	<b>Matches (%)</b>
Burglary (including aggravated)	1,982	627	31.6
Vehicle crime	623	252	40.4
Criminal damage	166	91	54.8
Violent crime	248	105	42.3
Drugs	433	185	42.7
Robbery	383	112	29.2
Theft	80	44	55.0
Rape	440	176	40.0
Murder (including attempted) and manslaughter	145	78	53.8
Traffic (including fatal)	23	19	82.6
Firearms	136	85	62.5
Other sexual offences	190	85	44.7
Arson and fire investigations	47	12	25.5
Fraud	60	14	23.3
Public Order	9	6	66.7
Abduction and kidnapping	25	15	60.0
Blackmail	2	1	50.0
Explosives	0	0	0.0
Other <sup>53</sup>	934	236	25.3
<b>TOTAL</b>	<b>5,926</b>	<b>2,143</b>	<b>36.2</b>

<sup>51</sup> Ibid. 19.

<sup>52</sup> During 2015/16 there were a number of profile records which were repeat searched weekly. Repeat searches are made where a profile record does not produce any matches and the speculative search is repeated at a particular interval (e.g. weekly, monthly or quarterly) which will affect the match rate for routine speculative searches.

<sup>53</sup> Ibid. 50.

**Table 3c: Number of urgent non-routine search matches by crime type (2015/16)<sup>54</sup>**

<b>Crime</b>	<b>Searches</b>	<b>Matches</b>	<b>Matches (%)</b>
Burglary (including aggravated)	142	115	81.0
Vehicle Crime	36	31	86.1
Criminal Damage	38	29	76.3
Violent Crime	27	24	88.9
Drugs	5	3	60.0
Robbery	43	28	65.1
Theft	1	1	100.0
Rape	149	83	55.7
Murder (including attempted) and manslaughter	85	63	74.1
Traffic (including fatal)	3	3	100.0
Firearms	4	2	50.0
Other sexual offences	35	20	57.1
Arson and fire investigations	5	4	80.0
Fraud	0	0	0.0
Public Order	5	5	100.0
Abduction and kidnapping	7	4	57.1
Blackmail	0	0	0.0
Explosives	0	0	0.0
Other <sup>55</sup>	78	25	32.1
<b>TOTAL</b>	<b>663</b>	<b>440</b>	<b>66.4</b>

### 1.3.4 Crimes solved

#### i. Crime scenes investigated

DNA evidence is an important element in the fight against crime. NDNAD helps to solve a significant number of the crimes searched against it but, in the majority of cases, the likelihood of finding DNA evidence is low. In 2015/16, the police sent a crime scene investigator to look for forensic evidence in **416,715 (11.0%)** of crimes. Homicides, rapes, vehicle thefts and domestic burglary are four crime types where a large number of crime scene examinations are carried out.

In 2015/16, data collected from police forces in England and Wales shows that, out of **22,584** crime scene profile records loaded to NDNAD, **11,378 (50.4%)** resulted in an outcome counted by the police<sup>56</sup> following a match on NDNAD.

<sup>54</sup> Ibid. 19.

<sup>55</sup> Ibid. 50.

<sup>56</sup> A new Recorded Crimes Outcomes Framework was introduced in April 2014 which allows every crime recorded by the police to be given a detailed outcome. Forces were asked to count the following outcomes from the Framework:

1. Charged/Summoned, 2. Caution – youths, 3. Caution – adults, 4. Taken into consideration, 5. The offender has died, 6. Penalty Notices for Disorder, 7. Cannabis Warning and 8. Community Resolution.



## ii. Processing of crime scene DNA

The table overleaf sets out the end to end process from the examination of the scene by a CSI to the number of outcomes recorded by the police<sup>57</sup>.

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<sup>57</sup> Ibid. 56.

**Table 4: Examination, processing and selected outcomes arising from DNA evidence (2015/16)<sup>58 59 60</sup>**

Stage	All crimes <sup>61</sup>	Thefts of vehicles	Domestic Burglaries	Rapes	Homicides <sup>62</sup>
Total number of police recorded crimes	3,775,365	80,058	189,951	34,402	1,265
Number of crime scenes examined	416,715	23,009	152,444	6,818	1,226
<i>Proportion of crime scenes examined (%)<sup>63</sup></i>	11.0	28.7	80.3	19.8	96.9
Of the crime scenes examined, number which yielded DNA <sup>64</sup>	89,149	9,084	25,210	2,679	803
<i>Proportion of crime scenes examined which yielded DNA (%)</i>	21.4	39.5	16.6	39.3	65.5
Of crime scenes yielding DNA, number from which the DNA is submitted to an FSP for analysis <sup>65</sup>	68,055	6,519	19,368	2,201	490
<i>Proportion of crime scenes yielding DNA from which the DNA is submitted to an FSP for analysis (%)</i>	76.3	71.8	76.8	82.2	61.0
Of crime scenes yielding DNA, number of profile records loaded to NDNAD <sup>66 67</sup>	22,584	1,862	6,438	387	132
<i>Proportion of crime scene profile records loaded to NDNAD (%)</i>	33.2	28.6	33.2	17.6	26.9
Of crime scene profile records loaded on to NDNAD, number associated with selected outcomes counted by the police <sup>68</sup>	11,378	759	2,589	215	108
<i>Proportion of crime scene profile records loaded on to NDNAD associated with selected outcomes counted by the police (%)</i>	50.4	40.8	40.2	55.6	81.9

<sup>58</sup> The four crime types specified in this table are ones where DNA is particularly likely to be left behind.

<sup>59</sup> Source: Forensics Annual Data Requirement (ADR).

<sup>60</sup> Seventeen forces have submitted incomplete data.

<sup>61</sup> Excluding fraud offences.

<sup>62</sup> Including attempted homicide.

<sup>63</sup> Not all crime scenes are examined. This is because DNA is more likely to be left at certain crime scenes (e.g. burglary) than others (e.g. online fraud).

<sup>64</sup> DNA is not recovered from every crime scene examined.

<sup>65</sup> Not all DNA samples collected from a crime scene are analysed. Too little DNA may be found to be analysed or it may be of insufficient quality. Additionally, because of the cost of processing the sample, the police may prioritise analysis of DNA from more serious crimes.

<sup>66</sup> Where a crime scene profile record fails to meet the minimum load criteria (eight areas plus the sex marker) it will not be uploaded to NDNAD.

<sup>67</sup> The figures presented here differ from those in Table 1 because they are derived from ADR rather than NDU data.

<sup>68</sup> Including outcomes linked to crimes which were "taken into consideration" by the police. These are additional offences that an offender admits to.

### 1.3.5 Conviction rates

The number of offenders convicted with the help of DNA evidence is not recorded. However, DNA evidence is instrumental<sup>69</sup> in the conviction of the perpetrators of many serious crimes. For example, in June 2016, DNA found in the underwear of a 12 year-old victim of a sexual assault helped to identify the perpetrator and led to him receiving a four and a half year prison sentence at Wolverhampton Crown Court.

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<sup>69</sup> Prosecutions are very rarely based on DNA evidence alone.

## 1.4 Missing and Vulnerable Persons Databases

### 1.4.1 Missing and vulnerable people

NDNAD holds DNA profile records taken from arrested individuals and crime scenes. Previously, it also held profile records taken in relation to missing persons, and from individuals at risk of harm, for the purposes of identifying a body should one be found. In order to separate DNA profile records held for identification purposes (which are given with consent), from those taken from individuals who have been arrested, they are now held on their own databases.

### 1.4.2 Missing Persons Database (MPDD)

The MPDD holds DNA profile records obtained from the belongings of people who have gone missing or from their close relatives (who will have similar DNA). If an unidentified body is found that matches their description, DNA can be taken from it and run against that on the MPDD to see if there is a match. This assists with police investigations and helps to bring closure for the family of the missing person. Profile records on the MPDD are not held on NDNAD.

As at 31<sup>st</sup> March 2016, there were **1,503** records on the MPDD. In 2015/16, the MPDD produced **four** matches.

### 1.4.3 Vulnerable Persons DNA Database (VPDD)

The VPDD holds the DNA profile records of people who are at risk (or who consider themselves at risk) of harm (for instance due to child sexual exploitation or honour based violence) and have asked for their profile to be added. If the person subsequently goes missing, their profile can be checked against NDNAD to see if they match to any biological material (such as blood or an unidentified body found at a crime scene) helping the police to investigate their disappearance. Profile records on the VPDD are not held on NDNAD.

As at 31<sup>st</sup> March 2016, there were **3,261** records on the VPDD. In 2015/16, there were **no** requests to compare records held on the VPDD with records held on NDNAD.

## 1.5 Technology and business process developments in 2015/16

NDNAD is constantly being adapted to incorporate new developments in technology. This involves significant work in developing and testing these changes to ensure they meet the necessary standards. The Home Office also responds to any developments that could impact on its effectiveness.

### 1.5.1 Home Office Biometrics Programme

The Home Office has existing biometrics<sup>70</sup> systems whose contracts come to an end in 2019. The Home Office Biometrics (HOB) programme aims to evolve these systems to provide continuity beyond 2019 and enhance their capability through a number of phases. The HOB programme will provide a common Home Office capability which will facilitate greater efficiency in the way that biometric services are delivered to users in the wider Public Sector. In particular, the HOB programme provides biometric capability across law enforcement, border security and for UK passports (HMPO) for the purposes of solving crime, protecting the borders, preventing terrorism and enabling growth.

The HOB DNA Strategic Project is focused on delivering a replacement (with enhanced capability) for the current technology platform on which NDNAD is based, and developing international connectivity to create better links with similar databases in other countries. To make it easier to deliver, the new database will be delivered in stages.

### 1.5.2 Centralised Elimination Database

The current Police Elimination Database (PED) contains DNA profile records taken from police officers and staff known as “elimination profile records”. Where a police force suspects that a crime scene sample may have been contaminated with DNA from a police officer, or a member of police staff, they can request that a direct comparison is made of DNA obtained from the crime scene against the Police Elimination profile. Each incident must be reported separately; NDU are not permitted to carry out full searches of the PED.

NDU is currently leading a project in developing a Centralised Elimination Database (CED). The Regulator has recommended that a centralised elimination database be established to identify any contamination events on NDNAD<sup>71</sup>; this will allow NDU to carry out regular, national, searches of crime stain profile records against elimination profile records enabling easier identification of DNA profile records that are due to contamination<sup>72</sup>.

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<sup>70</sup> ‘Biometrics’ are physiological characteristics of an individual (e.g. DNA, fingerprints, palm prints etc.) which may be used to identify them.

<sup>71</sup> The recommendation is at paragraph 8.1.5, p18 of the protocol [The Management and Use of Staff Elimination DNA Databases \(FSR-P-302\)](#) published by the FSR in 2014.

<sup>72</sup> This change was brought in via [The Police \(Amendment\) Regulations 2015](#) and [The Special Constables \(Amendment\) Regulations 2015](#). The regulations were signed off on 1<sup>st</sup> April 2015.

On transfer of a PED profile record to the CED, a check is made for matches against crime scene profile records retained on NDNAD; as of 31<sup>st</sup> March 2016, 57,493 such records had been checked. Following any necessary quality assurance checks by the FSP which processed the crime scene sample, matches are investigated by police forces and any crime scene profile records shown to originate from contamination by police officers or staff (rather than from the crime scene from which the DNA samples were obtained) are then deleted from NDNAD. Because of the necessity of performing these checks for all police forces, migration to the CED is now expected to be completed by April 2017.

Once the CED is fully established, profile records taken from serving police officers and special constables will be able to be retained for elimination purposes for up to 12 months after they leave a police force (except where they transfer to another force)<sup>73</sup>. In line with the Police and Criminal Evidence Act 1984 (PACE), DNA samples will be destroyed within 6 months of the sample being taken. In the future, the CED will be expanded to include the profile records of staff from other organisations who may potentially contaminate the crime scene or a sample taken from the crime scene.

### 1.5.3 Rapid DNA

Using standard DNA processing methods, it can take several days to generate a DNA profile from a DNA sample. However, Rapid DNA technology now exists which allows a sample to be processed in a matter of hours rather than days.

Processing is carried out by a small device that has the potential to be deployed at a crime scene. A number of rapid DNA devices have been produced by different companies which several police forces are piloting. The rapid DNA Project Board considers reports from the pilots to understand how best to exploit the technology whilst maintaining public confidence in the criminal justice system.

Following these successful pilots, approval was granted for DNA profile records generated using Rapid DNA technology to be retained on NDNAD and as of 31<sup>st</sup> March 2016, 414 such records had been retained.

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<sup>73</sup> Ibid. 72.

## 1.6 Security and quality control

### 1.6.1 Access to NDNAD

Day-to-day operation of NDNAD is the responsibility of NDU. Data held on NDNAD are kept securely and the laboratories that provide DNA profile records to NDNAD are subject to continuous assessment.

NDU is responsible for ensuring that operational activity meets the standards for quality and integrity established by the NDNAD Strategy Board. Fewer than **30** vetted staff have access to NDNAD. No police officer or police force has direct access to the data held on NDNAD but they are informed of any matches it produces. Similarly, forensic science providers who undertake DNA profiling under contract to the police service, and submit the resulting crime scene and subject profile records for loading, do not have direct access to NDNAD.

### 1.6.2 Error rates

Police forces and FSPs have put in place a number of safeguards to prevent any errors from occurring with the processing and interpretation of DNA samples and NDU carry out daily integrity checks on the profile records loaded to NDNAD. Despite these safeguards, errors do sometimes occur with both samples taken from individuals and from crime scenes. The Police Elimination Database, which contains the profile records of police officers and staff, helps to reduce errors. NDU is currently leading a project to incorporate the profile records of other professionals who might have come into contact with crime scene DNA (see paragraph 1.5.2).

There are four types of errors which may occur; these are explained below:

#### **i. Force sample or record handling error:**

This occurs where the DNA profile is associated with the wrong information. For example, if person A and person B are sampled at the same time, and the samples are put in the wrong kits, person A's sample would be attached to information (PNC ID number, name etc.) about person B, and vice versa. Similarly, crime scene sample A could have information associated with it which relates to crime scene sample B.

#### **ii. Forensic science provider sample or record handling error:**

As above, this occurs where the DNA profile is associated with the wrong information. It could involve samples being mixed up as described above or contaminating DNA being introduced during processing.

#### **iii. Forensic science provider interpretation error:**

This occurs where the forensic science provider has made an error during the processing of the sample.

#### **iv. NDU transcription or amendment error:**

This occurs where NDU has introduced inaccurate information.

The table overleaf shows the error rate for subject and crime scene profile records for each organisation. No miscarriage of justice arose from these errors. However, had they remained undetected, they could have affected the integrity of NDNAD.



**Table 5: Error rates<sup>74</sup>**

Organisation	Error types	Sample Type	April to June 2015	July to September 2015	October to December 2015	January to March 2016
Profile records loaded		Subject	72,834	72,130	71,144	76,203
		Crime scene	10,204	10,188	9,436	9,542
Police Forces <sup>75</sup>	Sample record handling or	Subject	26	30	32	23
		Subject (%)	0.036	0.042	0.045	0.030
		Crime scene	0	0	0	0
		Crime scene (%)	0.000	0.000	0.000	0.000
Forensic science providers	Sample record handling or	Subject	0	0	0	1
		Subject (%)	0.000	0.000	0.000	0.001
		Crime scene	2	2	2	1
		Crime scene (%)	0.020	0.020	0.021	0.010
	Interpretation	Subject	6	1	2	0
		Subject (%)	0.008	0.001	0.003	0.0
		Crime scene	15	17	13	9
		Crime scene (%)	0.147	0.167	0.138	0.094
NDU	Transcription or amendment	Subject	0	0	0	0
		Subject (%)	0.000	0.000	0.000	0.000
		Crime scene	1	1	1	1
		Crime scene (%)	0.001	0.001	0.010	0.010

<sup>74</sup> Ibid. 19.

<sup>75</sup> Further work will be undertaken this year by the National DNA Database Delivery Unit to gain a better understanding of the reasons behind these error rates.

### 1.6.3 FSP accreditation

Any FSP carrying out DNA profiling work for loading to NDNAD must be approved by NDU and the NDNAD Strategy Board. This involves continuous monitoring of standards. As at 31<sup>st</sup> March 2016, **13** laboratories were authorised to load profile records to NDNAD.

### 1.6.4 Forensic Science Service (FSS) Archive

From April 2012, following the closure of the FSS, NDU became responsible for investigating any integrity issues raised concerning the results from profile records loaded to NDNAD by the FSS before they closed. In 2015/16, **158** investigations were raised on FSS data already loaded to NDNAD, demonstrating the value of the archive.

NDU has also taken on responsibility for holding the archive of the original, raw DNA profiling results, generated by the FSS. In 2015/16, NDNAD provided **3** of these original results to current forensic FSPs to support the interpretation of DNA results in complex cases. Case files from investigation work carried out by the FSS are managed by Forensic Archive Ltd. (FAL).<sup>76</sup>

### 1.6.5 Forensic Science Regulator

In 2008, an independent Regulator<sup>77</sup> was established to set and monitor standards for organisations carrying out scientific analysis for use in the criminal justice system. The current Regulator is Dr Gill Tully.

The required standards are published in the Regulator's Codes of Practice and Conduct<sup>78</sup> and include accreditation of FSPs to international standards. Every company supplying the police with forensic services as part of the national procurement framework is required to meet the standards set out in the Codes.

## 1.7 Finance 2015/16

In 2015/16, the total cost to the Home Office and police forces of running the NDNAD was **£3.7m**. The figure for 2014/15 was £3.9m.

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<sup>76</sup> For further information on FAL, see [www.forensicarchive.com](http://www.forensicarchive.com).

<sup>77</sup> For further information on the Regulator, see [www.gov.uk/government/organisations/forensic-science-regulator](http://www.gov.uk/government/organisations/forensic-science-regulator).

<sup>78</sup> These are available at [www.gov.uk/government/collections/forensic-science-providers-codes-of-practice-and-conduct](http://www.gov.uk/government/collections/forensic-science-providers-codes-of-practice-and-conduct).

## 2. Legislation governing DNA retention

### 2.1 Overview

PoFA and the Anti-Social Behaviour, Crime and Policing Act 2014 (ASBCPA) amended PACE to establish the current retention framework for DNA and fingerprints.

### 2.2 Protection of Freedoms Act 2012

#### 2.2.1 Introduction

PoFA includes detailed rules on how long the police may retain an individual's DNA sample, profile and fingerprints.

#### 2.2.2 DNA profile records and fingerprints

Depending on the circumstances, a DNA profile and fingerprint record may be retained indefinitely, held for three to five years and then destroyed or destroyed immediately.

#### 2.2.3 DNA samples

PoFA requires all DNA samples taken from individuals to be destroyed as soon as a profile has been obtained from them (or in any case within 6 months) unless it is retained under the Criminal Procedure and Investigations Act 1996 (CPIA)<sup>79</sup>. This allows sufficient time for the sample to be analysed and a DNA profile to be produced and uploaded to NDNAD.

#### 2.2.4 Biometrics Commissioner

PoFA also established the position of Commissioner for the Retention and Use of Biometric Material ('the 'Biometrics Commissioner')<sup>80</sup>. The position is independent of Government. During 2015/16, the Biometrics Commissioner was Alastair MacGregor QC. However, the current Biometrics Commissioner is Professor Paul Wiles.

As indicated in Table 6b, one of the Biometrics Commissioner's functions is to decide whether or not the police may retain DNA profile records and fingerprints obtained from individuals arrested but not charged with a qualifying offence. He also

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<sup>79</sup> Under the Criminal Procedure and Investigations Act 1996 (CPIA) (and its associated code of practice) evidence can be retained where it may be needed for disclosure to the defence. This means that, in complex cases, a DNA sample may be retained for longer. This sample can only be used only in relation to that particular offence and must be destroyed once its potential need for use as evidence has ended.

<sup>80</sup> For more information on the work of the Biometrics Commissioner see <https://www.gov.uk/government/organisations/biometrics-commissioner>.

has a general responsibility to keep the retention and use of DNA and fingerprints, and retention on national security grounds, under review.

## 2.2.5 Extensions

Where an individual has been arrested for, or charged with, a qualifying offence and an initial, three year period, of retention, has been granted, PoFA allows a chief constable to apply to a district judge for a two year extension of the retention period if the victim is under 18, a vulnerable adult, is associated with the person to whom the retained material relates or if they consider retention to be necessary for the prevention or detection of crime.

## 2.2.6 Speculative searches

PoFA allows the DNA profile and fingerprints taken from arrested individuals to be searched against NDNAD and IDENT1, to see if they match any subject or crime scene profile already stored. Unless a match is found, or PoFA provides another power to retain them (for example because the person has a previous conviction) the DNA and fingerprints are deleted once the 'speculative search' has been completed unless there is a match in which case the police will decide whether to investigate the individual or not.

**Table 6a: Retention periods for convicted individuals**

Situation	Fingerprint & DNA Retention Period
Any age convicted (including given a caution or youth caution) of a qualifying offence	Indefinite
Adult convicted (including given a caution) of a minor offence	Indefinite
Under 18 convicted (including given a youth caution) of a minor offence	<p><b>1st conviction:</b> five years (plus length of any prison sentence), or indefinite if the prison sentence is for five years or more.</p> <p><b>2nd conviction:</b> indefinite</p>

**Table 6b: Retention periods for unconvicted individuals**

Situation	Fingerprint & DNA Retention Period
Any age charged with but not convicted of a qualifying <sup>81</sup> offence	Three years plus a two year extension if granted by a District Judge (or indefinite if the individual has a previous conviction for a recordable <sup>82</sup> offence which is not excluded)
Any age arrested for but not charged with a qualifying offence	Three years if granted by the Biometrics Commissioner plus a two year extension if granted by a District Judge (or indefinite if the individual has a previous conviction <sup>83</sup> for a recordable offence which is not excluded <sup>84</sup> )
Any age arrested for or charged with a minor <sup>85</sup> offence	None (or indefinite if the individual has a previous conviction for a recordable offence which is not excluded)
Over 18 given a Penalty Notice for Disorder	Two years

<sup>81</sup> A 'qualifying' offence is one listed under section 65A of the Police and Criminal Evidence Act 1984 (the list includes sexual, violent, terrorism and burglary offences).

<sup>82</sup> A 'recordable' offence is one for which the police are required to keep a record. Generally speaking, these are imprisonable offences; however, it also includes a number of non-imprisonable offences such as begging and taxi touting. The police are not able to take or retain the DNA or fingerprints of an individual who is arrested for an offence which is not recordable.

<sup>83</sup> Convictions include cautions, reprimands and final warnings.

<sup>84</sup> An 'excluded' offence is a recordable offence which is minor, was committed when the individual was under 18, for which they received a sentence of fewer than 5 years imprisonment and is the only recordable offence for which the individual has been convicted.

<sup>85</sup> A minor offence is a 'recordable' offence which is not also a 'qualifying' offence.

## 2.3 Early Deletion

PoFA requires the NDNAD Strategy Board to issue guidance about the destruction of DNA profile records<sup>86</sup>. This guidance, known as the 'Deletion of Records from National Police Systems', covers DNA profile records and samples, fingerprints and PNC records and was published in May 2015. It replaces both the 'Early Deletion Guidance and Exceptional Case Procedure'. The guidance is only statutory in relation to DNA profile records and only applies to those:

- with no prior convictions, whose biometric material is held because they have been given a Penalty Notice for Disorder;
- who have been charged with, but not convicted of, a qualifying offence; or
- who receive a simple or conditional caution.

The guidance states that Chief Officers may wish to consider early deletion if applied for on specified grounds. These include:

- a recordable offence has not taken place (e.g. where an individual died but it's established that they died of natural causes);
- the investigation was based on a malicious or false allegation;
- the individual has a proven alibi;
- the status of the individual (e.g. as victim, offender or witness) is not clear at the time of arrest;
- a magistrate or judge recommends it;
- another individual is convicted of the offence; and
- where it is in the public interest to do so.

The Record Deletion Process provides an application form and specifies the evidence that the Chief Officer should consider.<sup>87</sup>

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<sup>86</sup> Ibid 7.

<sup>87</sup> The Record Deletion Process is available at <https://www.gov.uk/government/publications/dna-early-deletion-guidance-and-application-form>.

## Glossary

**Accreditation:** This is the independent assessment of the services that an organisation delivers, to determine whether they meet the appropriate standards. Following the assessment, a statement will be published which states whether or not the standards have been met.

All Forensic Science Providers and laboratories which process DNA samples are required to be accredited to ISO17025; a standard set out by the International Standard Organization which requires that samples are processed under appropriate laboratory conditions and that contamination is avoided.

**Anti-Social Behaviour Crime and Policing Act 2014 (ASBCPA):** ASBCPA amended PACE to make three changes in the operation of PoFA, namely in relation to retention of samples under the CPIA, retention of profile records not linked to the offence for which a DNA sample was taken and resampling. See 'Protection of Freedoms Act 2012'.

**Central Elimination Database:** A database containing profile records from police officers, police staff, manufacturers and Sexual Assault Referral Centre (SARC) staff who come into regular contact with crime scenes, so that any DNA inadvertently left at a crime scene can be eliminated from the investigation.

**Commissioner for the Retention and Use of Biometric Material ('the Biometrics Commissioner'):** The Biometrics Commissioner is responsible for keeping under review the retention and use by the police of DNA samples, DNA profile records and fingerprints; and for agreeing or rejecting applications by the police to retain DNA profile records and fingerprints from persons arrested for qualifying offences but not charged or convicted for up to three years.

**Crime scene investigator (CSI):** A member of police force staff employed to look for DNA and other forensic evidence left at a crime scene.

**Deoxyribonucleic Acid (DNA):** Genetic material contained within most of the cells of the human body which determines an individual's physical characteristics such as sex, eye colour, hair colour etc.

**DNA-17:** The current method used to process a DNA sample which analyses a sample of DNA at 16 different areas plus a sex marker.

**DNA Ethics Group:** Established in 2007, the Ethics Group is an independent group which provides advice to ministers and the Strategy Board on the ethical operation of NDNAD.

**DNA profile:** A series of 16 pairs of numbers plus a sex marker which are derived following the processing of a DNA sample. There are two types of DNA profile records:

- **crime scene profile:** this is a profile derived from a crime scene sample
- **subject profile:** this is a profile derived from a subject sample

Once derived, profile records are usually loaded onto the National DNA Database. See 'DNA sample'.

**DNA sample:** There are two main types of DNA sample:

- **crime scene sample:** this is a sample of DNA taken from a crime scene e.g. from a surface, clothing or bodily fluid (such as blood) left at a crime scene.
- **subject sample:** this is a sample of DNA taken from an individual, often from their cheek, by way of a 'buccal swab' though it can be taken from hair or a bodily fluid such as blood, urine or semen.

In the case of missing persons, DNA samples may also be taken from the belongings of that person or their family for the purposes of identifying a body should one be found.

**Early deletion:** The Record Deletion Guidance sets out certain, limited, circumstances under which an individual whose DNA profile is being retained by the police can apply to have it destroyed sooner than normal.

**Excluded offence:** Under the retention framework for DNA and fingerprints, an 'excluded' offence is a recordable offence which is minor, was committed when the individual was under 18, for which they received a sentence of fewer than five years imprisonment and is the only recordable offence for which the individual has been convicted.

**Familial search:** A search of NDNAD carried out where DNA is found at a crime scene but there is no subject profile on NDNAD to look for relatives of the perpetrator. Such a search may produce a list of possible relatives of the offender. The police use other intelligence, such as age and geography, to narrow down the list before investigating further.

Because of the privacy issues, cost and staffing involved in familial searches, they are only used for the most serious crimes. All such searches require the approval of the NDNAD Strategy Board.

**Force sample or record handling error:** This occurs where the DNA profile is associated with the wrong information. For example, if person A and person B are sampled at the same time, and the samples are put in the wrong kits, so person A's sample is attached to information (PNC ID number, name etc.) about person B, and vice versa. Similarly, crime scene sample A could have information associated with it which relates to crime scene sample B.

**Forensic Archive Ltd. (FAL):** A company established following the closure of the Forensic Science Service (FSS), to manage case files from investigation work which it had carried out. See 'Forensic Science Service'.

**Forensic service provider (FSP):** An organisation which provides forensic analysis services to police forces.

**FSP interpretation error:** This occurs where the FSP has made an error during the processing of the sample.



**FSP sample and/or record handling error:** As above, this occurs where the DNA profile is associated with the wrong information. It could involve samples being mixed up as described above or contaminating DNA being introduced during processing.

**Forensic Science Regulator:** The Regulator is responsible for ensuring that the provision of forensic science services across the criminal justice system is subject to an appropriate regime of scientific quality standards. Although her remit applies only to England and Wales, the Scottish and Northern Irish authorities collaborate with her in the setting of quality standards.

**Forensic Science Service (FSS):** The FSS was the body which used to have responsibility for most forensic science testing in relation to forensic evidence. In March 2012, the FSS closed and its work was transferred to private forensic science providers and in-house police laboratories.

**Match:** There are three types of matches:

- **crime scene to subject:** Where a crime scene profile matches a subject profile
- **crime scene to crime scene:** Where a crime scene profile matches another crime scene profile (i.e. indicating that the same individual was present at both crime scenes).
- **subject to subject:** Where a subject profile matches a subject profile already held on NDNAD (i.e. indicating that the individual already has a profile on NDNAD).

**Match rate:** The percentage of crime scene profile records which, once loaded onto NDNAD, match against a subject profile (or subject profile records which match to crime scene profile records).

**Minor offence:** Under the retention framework for DNA and fingerprints, a minor offence is a 'recordable' offence which is not a 'qualifying' offence.

**Missing Persons DNA Database (MPDD):** The MPDD holds DNA profile records obtained from the belongings of people who have gone missing or from their close relatives (who will have similar DNA). If an unidentified body is found which matches their description, DNA can be taken from it and run against that on the MPDD to see if there is a match. This assists with police investigations and helps to bring closure for the family of the missing person. Profile records on the MPDD are not held on NDNAD.

**National DNA Database (NDNAD):** A database containing both subject and crime scene profile records connected with crimes committed throughout the United Kingdom. (Subject profile records retained on the Scottish and Northern Irish DNA Databases are copied to NDNAD; crime scene profile records retained on those databases are copied to NDNAD if a match is not found).

**National DNA Database Delivery Unit (NDU):** The Home Office unit responsible for administering NDNAD.

**Non-Routine search:** A search made against a DNA profile which has not been uploaded onto NDNAD.

**NDU transcription or amendment error:** This occurs where NDU have introduced inaccurate information.

**NDNAD Strategy Board:** The NDNAD Strategy Board provides governance and oversight over NDNAD. It has a number of statutory functions including issuing guidance on the destruction of profile records and producing an annual report.

**Outcome:** One of 21 categories under which the police are asked to record the result of each case. For the purposes of the forensic data published in this report, the police count only the following outcomes:

1. Charged/summonsed
2. Caution – youths
3. Caution – adults
5. The offender has died
6. Penalty notices for disorder
7. Cannabis warning
8. Community resolution

**Partial match:** Where, for instance, the perpetrator has tried to remove the evidence, or DNA has been partially destroyed by environmental conditions, it may not be possible to obtain a complete DNA profile from a crime scene. A partial DNA profile can still be used to obtain a partial match against profile records on NDNAD. Partial matches provide valuable leads for the police but, depending on how much of the information is missing, the result is likely to be interpreted with less certainty than a full match. See 'Match'.

**Police and Criminal Evidence Act 1984 (PACE):** PACE makes a number of provisions to do with police powers, including in relation to the taking and retention of DNA and fingerprints.

**Protection of Freedoms Act 2012 (PoFA):** Prior to the coming into force of the DNA and fingerprint sections of PoFA on 31<sup>st</sup> October 2013, DNA and fingerprints from all individuals arrested for, charged with or convicted of a recordable offence were held indefinitely. PoFA amended PACE to introduce a much more restricted retention schedule under which the majority of profile records belonging to innocent people were destroyed. See 'Police and Criminal Evidence Act 1984 (PACE)'.

**Qualifying offence:** Under the retention framework for DNA and fingerprints, a 'qualifying' offence is one listed under section 65A of the Police and Criminal Evidence Act 1984 (the list comprises sexual, violent, terrorism and burglary offences).

**Recordable offence:** A 'recordable' offence is one for which the police are required to keep a record. Generally speaking, these are imprisonable offences; however, it also includes a number of non-imprisonable offences such as begging and taxi touting. The police are not able to take or retain the DNA or fingerprints of an individual who is arrested for an offence which is not recordable.

**SGMPlus:** The previous method used to process a DNA sample which analysed a sample of DNA at ten different areas plus a sex marker. In July 2014, SGMPlus was upgraded to DNA-17.

**Routine search:** A search made against a DNA profile uploaded onto NDNAD.

**Urgent match:** A search made using NDU's urgent speculative search service which is available 24 hours a day. This service is reserved for the most serious of crimes.

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