

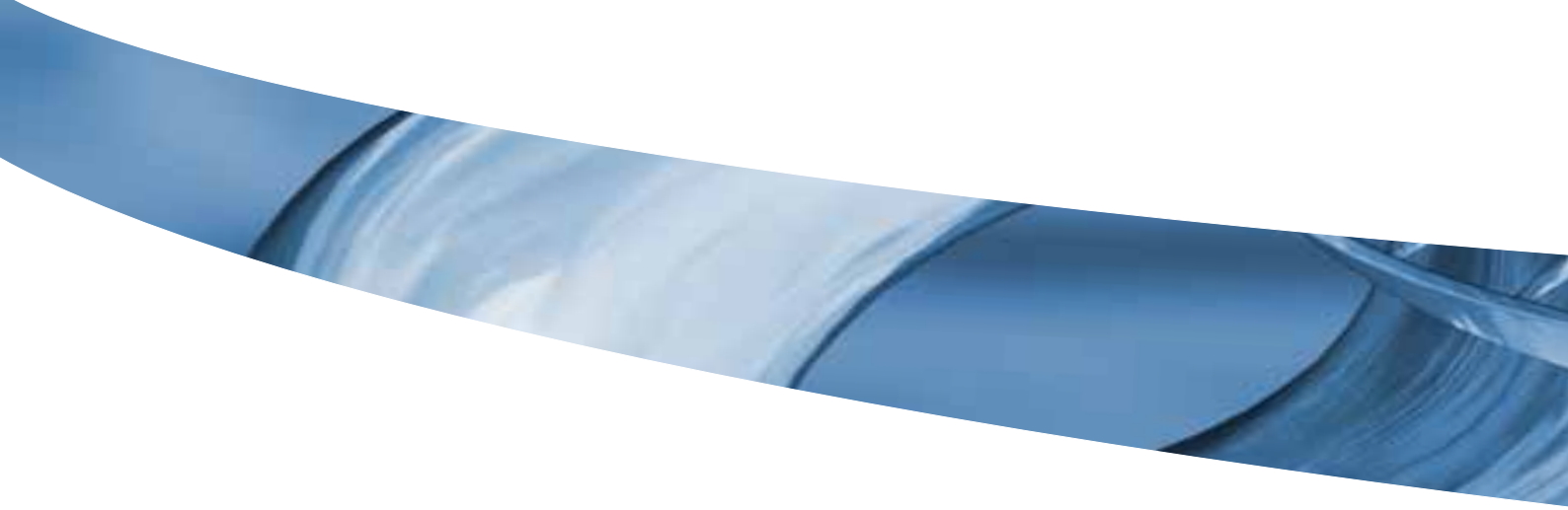


National DNA Database

2009 - 2011

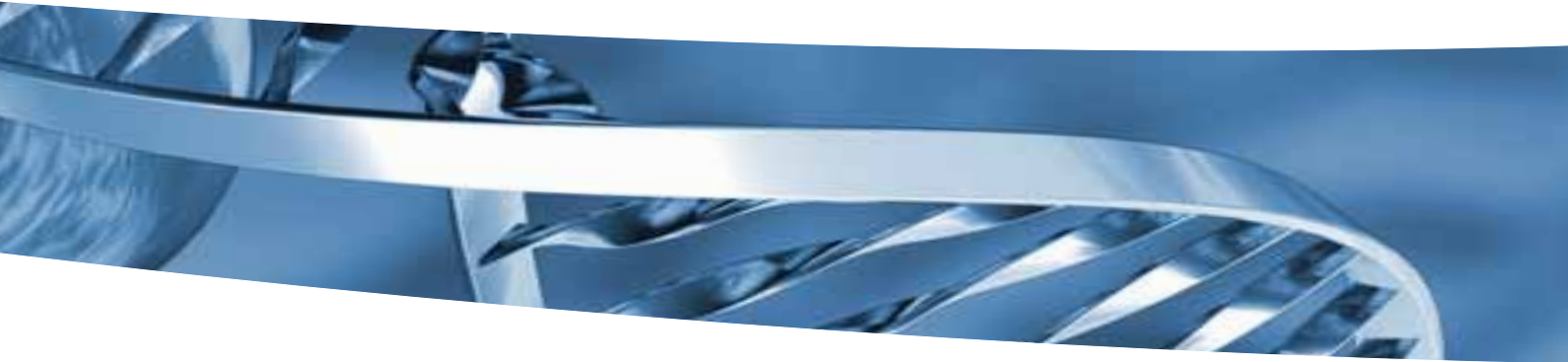
Biennial Report





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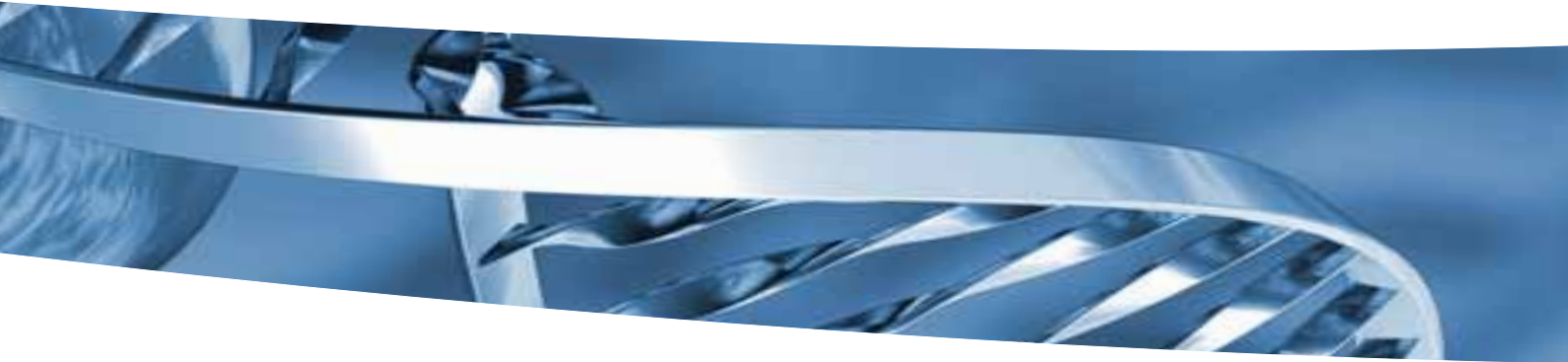
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Foreword

The period 2009 - 2011 was unprecedented in the number of reviews and scrutiny of the National DNA Database (NDNAD) - notably by the Human Genetics Commission, Liberty, Genewatch, the Nuffield Foundation, the Runnymede Trust and of course the NDNAD Ethics Group, established to advise the Strategy Board and Ministers on ethical issues. There was also significant public and Parliamentary debate on the NDNAD with two Westminster Hall debates, led by Diane Abbott MP and Philip Davies MP and the report by the Home Affairs Select Committee, published in March 2010, as the Crime and Security Bill was being considered by Parliament. We have produced a report covering two years recognising the change in Government following the general election and the Protection of Freedoms Bill put forward by the coalition Government to address the ECHR Judgement in the case of S and Marper in line with their commitments. The level of interest in DNA profiling, the need to ensure an understanding and confidence in DNA profiling and the operation of the NDNAD continue to be matters of significant public interest. In this report we have produced much of the same information and statistics as in previous reports so that readers can monitor what has changed and identify trends in how the NDNAD has continued to contribute to crime investigation in the UK. Most importantly however, we have also included more explanatory information about DNA profiling and the operation and safeguards that apply to the NDNAD and contextual information on the impact of the NDNAD.

The Protection of Freedoms Bill broadly incorporates the arrangements currently in place in Scotland for the retention of DNA profiles. The Bill also puts the Strategy Board and its governance on a statutory footing and requires the Board to make an annual report to the Secretary of State, who must in turn publish the report and lay it before Parliament. In addition, the Bill requires the Strategy Board to issue guidance to the police on the destruction of DNA profiles and samples taken under the Police and Criminal Evidence Act 1984, as amended and Chief Officers of Police will be required to act in accordance with that guidance.



A significant change since the last Report has been the completion of the project to take the NDNAD into a wholly managed National Policing Improvement Agency (NPIA) environment. The benefits this has delivered are explained in the body of the Report and I would like to thank David Shaw, the Chief Constable of West Mercia, for his leadership of this project. I would also like to thank Kirsty Faulkner and her team who manage the NDNAD on a daily basis. They have shown considerable commitment and professionalism in a year which involved many changes to the operation of the NDNAD.

Finally, I am very grateful to the members of the Strategy Board who have given careful consideration to the issues that have been discussed in the course of the last two years and have made a significant contribution to ensuring the effective operation of the NDNAD.

Gary Pugh

Chair of the National DNA Database Strategy Board



National DNA Database Strategy Board Members 2009 - 2011

Gary Pugh OBE
Director of Forensic Services
Metropolitan Police
Chairman

DCC David Shaw
West Mercia Police
Core Member Representing ACPO (until December 2009)

Stephen Webb
Home Office
Core Member Representing the Home Office (until September 2009)

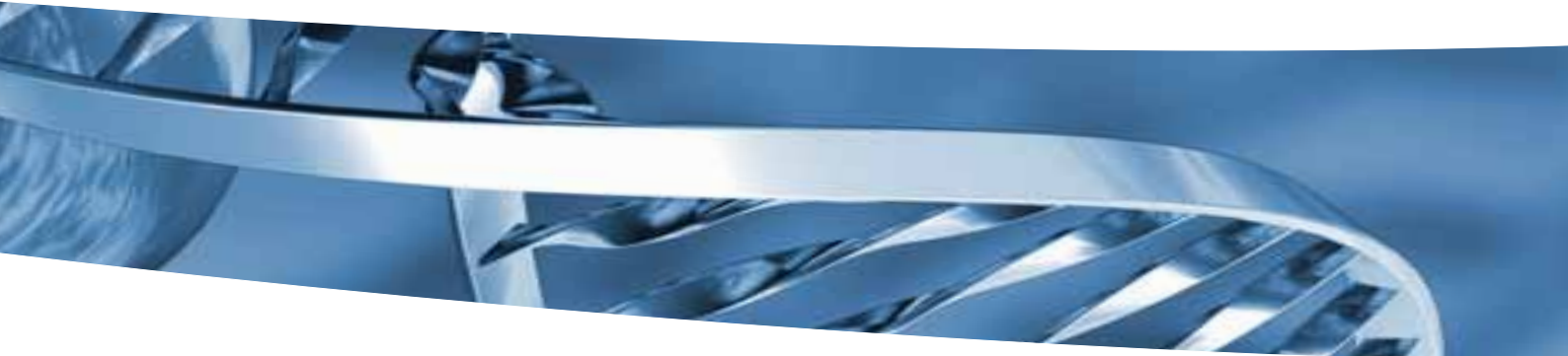
Tyson Hepple
Home Office
Core Member Representing the Home Office (since September 2009)

David Money
Devon and Cornwall Police Authority
Core Member Representing APA

Dr Simon Bramble
Head of Police Science and Forensics Unit, NPIA

Kirsty Faulkner
Head of the NDNAD Delivery Unit, NPIA

Andrew Rennison
Forensic Science Regulator



Professor Peter Hutton
Chair Ethics Group (until September 2009)

Christopher Hughes OBE
Chair Ethics Group (since September 2009)

Dr Doug Pearson
Scottish DNA Database Manager, SPSA

Dr Jim McQuillan
Head of Scientific Support, Northern Ireland

ACC Duncan McCausland
Police Service Northern Ireland (until March 2010)

ACC Will Kerr
Police Service Northern Ireland (from March 2010)

Carol Moore
Criminal Justice Northern Ireland

ACC George Hamilton
ACPO (Scotland)

Professor Sarah Cunningham-Burley
Human Genetics Commission

Ian Miller
Information Commissioner's Office

Alex Prottis
Equality Diversity and Human Rights Unit, NPIA

Section 1 - Introduction

- 1.1 This biennial report covers the operation of the NDNAD for the period April 2009 to March 2011. In this biennial report the usual statistics are reported (see Appendices A and B) but in view of the public interest and debate a more detailed explanation of the operation of the NDNAD is set out along with more contextual information on the role of DNA profiling and the NDNAD in crime investigation and the administration of justice. However, the report does not cover the entire contribution of DNA to crime detection as a whole.
- 1.2 The primary purpose of the NDNAD is to match a DNA profile from an individual (**subject profile**) to an unidentified DNA profile obtained in the course of a criminal investigation (**crime scene profile**) and where there is no match, to eliminate all individuals on the NDNAD as potential suspects from that criminal investigation. It is the significant physical interaction between a perpetrator of crime and the victim or items at the crime scene that allows for DNA to be transferred in the form of blood, body fluids or cellular material. This interaction occurs predominately in most violent and sexually motivated crimes, murder and some acquisitive crime, such as burglary and vehicle crime. In the majority of recorded crime, such as minor theft, illegal drug use, fraud and traffic offences, DNA profiling plays little or no part, as there is limited opportunity for the transfer of DNA nor is it relevant to the act of committing the offence. However, as the NDNAD has demonstrated, individuals who are arrested for minor crime will commit some of the most serious crimes of violence, including murder. There is no practical impact to the retention of a DNA profile on the NDNAD unless it matches with another DNA profile; the database's ability to exclude an individual from an investigation is also a significant safeguard against false allegation and wrongful conviction.
- 1.3 The current DNA profiling method used for the NDNAD is referred to by the trade name Second Generation Multiplex Plus or SGM Plus. This is a DNA profiling method that analyses ten regions of a person's DNA that vary significantly between individuals and a sex marker. The ten regions analysed represent less than 0.000084% of a person's DNA and do not provide information on physical characteristics or other genetic information about an individual. The product of DNA profiling is a series of twenty numbers (a pair for each of the ten regions analysed). A typical DNA profile, including the sex marker, is shown below;

14,18; 30,31.2; 16,17; 14,17; 11,13; 12,14; 19, 23; 6,7; 12,14; 21,23; XY

On the 9 March 2008 Kristoffer White attacked and raped a woman in a garden just yards from his own home. DNA evidence was found at the crime scene in a partial saliva sample discovered on the victim's face. However, at the time of the attack no match was found on the National DNA Database. In 2010 Kristoffer White was arrested and cautioned by police after an unrelated offence, his DNA sample was added to the National DNA Database producing a match to the evidence found after the rape in March 2008. In February 2011 Kristoffer White was found guilty of rape and sentenced to nine years' imprisonment.

- 1.4 The numerical values in each of the ten pairs are inherited; one from the mother and one from the father. It is the inherited nature of DNA that means identical siblings will share the same DNA profile. As at 31 March 2010 there were 3,869 sets of identical twins and seven sets of identical triplets on the NDNAD who cannot be separately identified through SGM Plus DNA profiling. As at 31 March 2011 there were 5,041 sets of identical twins and 10 sets of identical triplets on the NDNAD. The validation of identity can be carried out by comparing fingerprints which are not identical, although not all of the identical sibling sets reported above have been validated. Analysis using the SGM Plus method normally results in a full profile of twenty numerical values. The DNA profiling of material from a crime scene can result in a partial profile where all twenty values are not found due to degradation, the significance of a partial DNA match will be less than that for a full DNA match. A full DNA match is estimated to be a chance event of at least one in a billion for unrelated individuals. As there are only a limited number of numerical values that can make up a DNA profile it is possible that two unrelated individuals could share the same DNA profile. The NDNAD has yet to identify, in practice, two unrelated individuals who share the same DNA profile.
- 1.5 The record of an individual on the NDNAD contains the twenty numbers described above, a unique reference number and some demographic information consisting of name, date of birth and ethnic appearance (as determined by the arresting officer).
- 1.6 The Strategy Board have given careful consideration to a number of key issues including concerns about the security of the data held on the NDNAD, the processes governing volunteer samples and the disproportionate numbers of black and ethnic minorities represented on the NDNAD. In this biennial report we set out some of the work that has been undertaken to improve the security of information, volunteer sample processes and understand the reasons for the current ethnic composition of the NDNAD.
- 1.7 The NDNAD is operated by the National Policing Improvement Agency (NPIA) on behalf of the police service in the UK and fewer than fifty vetted staff have access to the NDNAD. No police officer has direct access to the information held on the NDNAD but they are informed of matches made by the database. Similarly, commercial forensic science providers, who undertake DNA profiling under contract to the police service, do not have direct access. Given the legal basis for the NDNAD is primarily the investigation and detection of crime, the current law allows for DNA profiles to be obtained from all individuals who are arrested for a recordable criminal offence or

Joshua the High Priest raped and sexually assaulted two women in Sheffield in 1984 and 1985. He remained at large until 2009. In 2007 South Yorkshire Police cold case squad revisited the two cases and found a match to Priest on the DNA database. In 2009 Joshua the High Priest was found guilty of the two attacks and sentenced to 17 years' imprisonment.

who volunteer a DNA sample and for it to be retained. By law, only law enforcement agencies as defined in Section 63A (1A) of the Police and Criminal Evidence Act 1984 can provide DNA profiles to the NDNAD.

- 1.8 The Strategy Board has reviewed and drawn up new processes for the sampling and loading of volunteer profiles to the NDNAD. This follows recommendations on volunteer sampling made by the NDNAD Ethics Group. The great majority of samples taken from volunteers are taken for elimination purposes, for example, to eliminate a householder's DNA following a burglary. The Strategy Board has decided that, in future, volunteer elimination profiles will no longer be loaded and retained on the NDNAD. Further information on volunteer profiles can be found in paragraphs 2.8 - 2.12 below.
- 1.9 The NDNAD does not contain information on convictions or the arrest history of individuals; this is held on a separate but linked database called the Police National Computer (PNC). There is considerable interest in the offending history of the individuals who make up the NDNAD, particularly those who have been arrested for a recordable offence and have not been convicted. It is a significant undertaking to examine the wider police information about individuals whose DNA profiles are stored on the NDNAD by cross comparing the PNC and NDNAD (see paragraph 2.7 for details).
- 1.10 A match of DNA profiles by the NDNAD can result from;

The routine permanent loading of subject profiles and crime scene profiles and the application of the matching algorithm to compare the newly loaded DNA profiles with those already on the NDNAD, this can result in;

- a new **subject profile** matching with a crime scene profile that has been retained on the NDNAD.
- a new **crime scene profile** can match with a subject profile that has been retained on the NDNAD.
- a new **subject profile** can match with an existing subject profile that has been retained on the NDNAD, revealing a duplicate of one individual's DNA profile or that two individuals share the same DNA profile referred to as an adventitious match, the latter are checked through comparing fingerprints of the two individuals.
- a new **crime scene profile** can match with another crime scene profile revealing that two crimes may have been committed by the same person.

In January 2010 Ahadullah Khughiani was found guilty of rape and sentenced to eight years' imprisonment. Ahadullah Khughiani was one of a group of five men that snatched the victim from a Bristol street and raped her in a park. DNA found on the victim matched a sample given by Khughiani.

A one-off search of a crime scene profile is known as a **speculative search** of the NDNAD. There are two types of speculative search:

- Urgent speculative searches - the NPIA NDNAD Delivery Unit operates a 24/7 service to undertake urgent speculative searches in the most serious violent crimes such as murder and rape. They are undertaken where DNA from the perpetrator is recovered but the perpetrator's identity is not known in order to speed up the search process. They are also used where there is an on-going risk to public safety; and
- Standard speculative searches are used to search partial or incomplete crime scene profiles that do not meet the load criteria of the NDNAD.

1.11 Previous annual reports have included data only on matches that are the product of routine permanent loading of DNA profiles. In this report, data and information is also included on the urgent and standard speculative searches against the NDNAD. In the sections below and Appendices of this biennial report, the activities and data on the operation of the NDNAD in 2009-10 and in 2010-11 are set out, along with sections on areas of interest to the public and where there have been significant developments in the course of the two years.

The European Court of Human Rights judgment in *S and Marper*

1.12 During the last two reporting years there has been considerable public and Parliamentary debate about the use of DNA profiling and the NDNAD and legislative proposals have been introduced by the Government to respond to the European Court of Human Rights judgment in December 2008, which found that the indefinite retention of DNA profiles from unconvicted individuals in England, Wales and Northern Ireland was not compatible with the provisions of the European Convention on Human Rights. The key elements of the judgement were:

- The Court accepted that the retention of fingerprint and DNA information pursued a legitimate purpose, namely the detection and, therefore, prevention of crime;
- The Court noted that fingerprints, DNA profiles and cellular samples constituted personal data;
- The Court found that the blanket and indiscriminate nature of the powers of retention of the fingerprints, cellular samples and DNA profiles of persons suspected but not convicted of offences failed to strike a fair balance between the competing public and private interests and that the respondent State had overstepped any acceptable margin of appreciation in this regard;

In October 2009 Joshua Burrows and an unnamed accomplice followed a 62 year old female from the shops in Watling Street to her home in Watford. When the victim reached her doorstep her two attackers grabbed her from behind. The pair escaped with the victim's handbag after they were scared off by a passerby who had come to the victim's aid after hearing her screams. Joshua Burrows was identified as the attacker after a DNA sample was obtained from the victim's mouth and lips. In November 2010 Joshua Burrows was sentenced to two and a half years' imprisonment.

- That there had therefore been a violation of Article 8 (right to respect for private and family life) of the European Convention on Human Rights;
- The Court further considered that the retention of unconvicted persons' data could be especially harmful in the case of minors such as the first applicant, given their special situation and the importance of their development and integration in society. It considered that particular attention had to be paid to the protection of juveniles from any detriment that could result from the retention by the authorities of their private data following acquittals of a criminal offence.

1.13 In May 2009, the then Government conducted a consultation exercise and subsequently brought forward legislative proposals on the retention of DNA profiles from individuals who have been arrested but not convicted to address the judgment of the European Court of Human Rights. The proposed legislation included provision to put the Strategy Board on a statutory footing, have the Board's governance rules laid before Parliament and give it the responsibility to produce an annual report. These proposals were contained in the Crime and Security Act 2010, which gained Royal Assent immediately prior to the 2010 general election. Following that election and the change of Government, the new Government decided not to bring into force the DNA retention provisions of the Crime and Security Act, but to repeal them and replace them with alternative provisions in the Protection of Freedoms Bill, which has carried forward the proposals in respect of governance of the NDNAD.

1.14 On the 7 March 2011 Sections 1 to 7 of the Crime and Security Act 2010 were commenced. Of relevance to this report are Sections 2-7 which amend Sections 62 and 63 of PACE in respect of powers to take material for offences committed outside of England and Wales; information to be given on taking material; speculative searches; power to require attendance at a police station and add a new section 65A to PACE which contains the definition of "Qualifying Offence" that is also used within the Protection of Freedoms Bill.

1.15 The Protection of Freedoms Bill was introduced in the House of Commons in February 2011. It provides a new framework for the retention of DNA samples, profiles and fingerprints taken from persons arrested for a recordable offence. The main provisions are as follows:

- the DNA profiles and fingerprints taken from persons arrested for or charged with a minor offence will be destroyed following either a decision not to charge or following acquittal;

Christopher Andrew raped a woman outside a Preston nightclub on 14 November 1998. At the time of the original inquiry a full DNA profile was obtained and loaded onto the National DNA Database but no match was found. In 2008 Christopher Andrew was arrested for drink driving and his DNA profile was taken matching a sample obtained during the original investigation. In November 2009 Christopher Andrew was found guilty at Burnley Crown Court and sentenced to seven years' imprisonment.

- in the case of persons charged for, but not convicted of, a serious offence, DNA profiles and fingerprints may be retained for three years, with a single two-year extension available on application by a chief officer of police to a District Judge (Magistrates' Courts);
- for persons convicted of an offence, DNA profiles and fingerprints may be retained indefinitely;
- provision is also made for the retention for two years of DNA profiles and fingerprints in the case of persons given a fixed penalty notice; and
- for extended retention on national security grounds.

In May 2009 David Simapuka dragged a 17 year old girl from a bus stop in Brentford and sexually assaulted her twice in the graveyard of St Faith's Church. Police arrested him after a match on the DNA database identified him as the attacker. In December 2009 David Simapuka admitted rape and was sentenced to a minimum of six years' imprisonment.

<http://www.hounslowchronicle.co.uk/west-london-news/local-hounslow-news/2009/12/11/homeless-man-jailed-for-brentford-rape-109642-25372006/>

Section 2 - Overview of National DNA Database in 2009-10 and 2010-11

2.1 The National DNA Database retains DNA profiles from individuals (subject profiles) and DNA profiles taken from crime scenes (crime scene profiles). Subject profiles are made up of those taken from individuals arrested for a recordable offence (PACE) and those taken voluntarily from individuals who have consented to having their profiles loaded to the NDNAD. The number of profiles on the NDNAD as at 31 March 2010 and 31 March 2011 are shown in Table 1.

Table 1: DNA profiles on NDNAD as at 31 March 2010 and 31 March 2011

	As at 31 March 2010	% of total DNA profiles	As at 31 March 2011	% of total DNA profiles
Subject profiles	6,135,990	94.2	6,595,295	94.3
of which: Taken under PACE	6,093,867		6,551,409	
Volunteers	42,123		43,886	
Crime scene profiles	375,620	5.8	400,786	5.7
Total DNA profiles on the NDNAD	6,511,610	100	6,996,081	100

Subject profiles loaded to the National DNA Database in 2009-10 and 2010-11

2.2 The number of subject profiles (both PACE and volunteers) held on the NDNAD does not equate to the number of individuals on the NDNAD because some of the DNA profiles held are duplicated. As at 31 March 2010 approximately 14.0% of subject profiles held on the NDNAD were assumed to be duplicates. As at 31 March 2011 this assumed duplication rate was approximately 14.4%¹. Duplicates arise from DNA samples being taken from the same subject on more than one occasion. For example, where a person gives different names or versions of their name or where a police force re-samples an individual whose DNA profile was obtained using a previous profiling technique that was of lower evidential value. Allowing for duplication, the number of individuals on the NDNAD on the 31 March 2010 was **5,274,000** and **5,644,680** on the 31 March 2011.

¹ It is assumed that a Subject profile that matches a second Subject profile is one individual (unless they have been determined to belong to identical twins or triplets). Where possible the matches are investigated with the force to confirm this assumption.

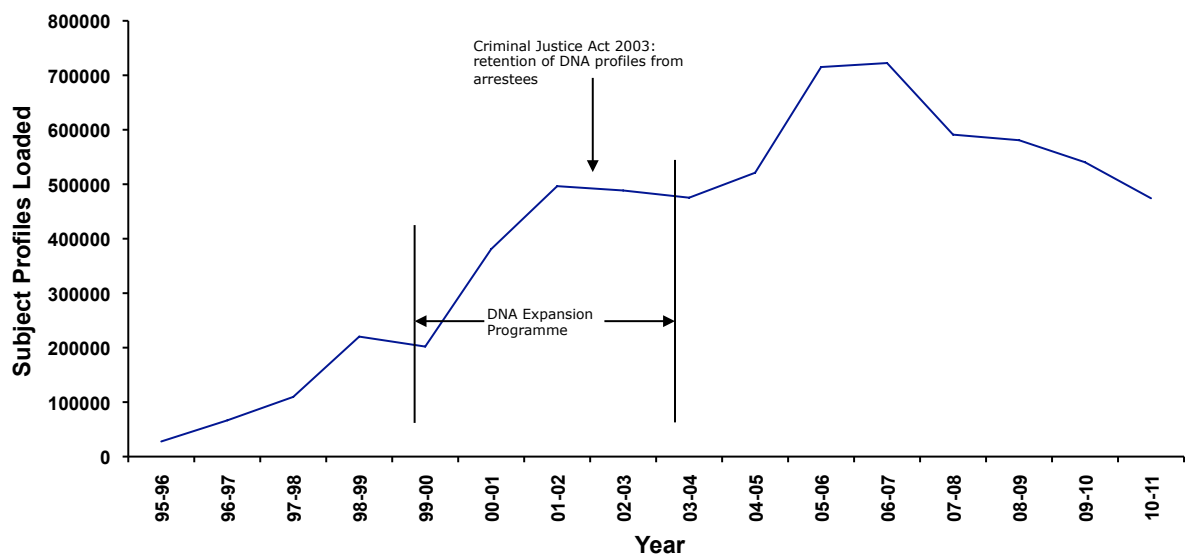
Neil Haigh admitted rape and attempted robbery and was jailed for six years on 17th January 2010 for raping a woman on her way to a Durham church in 1987. Neil Haigh was arrested for a drink driving offence several years later and his DNA sample taken. A match was found when a cold case review was launched in 2009.

2.3 In 2009-10 **540,333** subject profiles were added to the NDNAD, a decrease of 7% compared to 2008-09 (580,809).

In 2010-11 **474,196** subject profiles were added to the NDNAD, a decrease of 12% compared to 2009-10.

These decreases continue the downward trend over recent years as illustrated graphically in Figure 1 below.

Figure 1: Number of subject profiles loaded to NDNAD annually up to 31/03/2011 for all law enforcement agencies²



2.4 The increase in numbers of subject profiles added to the NDNAD from its inception reflect changes in legislation, culminating in the Criminal Justice Act 2003, that allows for retention of DNA profiles from all individuals arrested for a recordable offence. Following an initial increase subsequent to the last change in legislation being implemented in 2004, there has been a gradual reduction in the number of subject profiles added to the NDNAD each year, reflecting levels of repeat offenders and individuals being arrested who already have a DNA profile retained on the NDNAD.

² As the NDNAD is a 'live' database and is constantly changing, the number of subject profiles loaded in each year varies from those published in the last NDNAD annual report as some records have been removed from NDNAD and then re-loaded, overwriting the original load date. There are also a number of records held on the NDNAD for which the load date is unknown; these are not included in this chart.

In October 2010 Dennis O'Brien was found guilty and sentenced to 2 years 3 months for the theft of antiques worth £7,900 from a stately home and handling stolen goods. Dennis O'Brien had admitted two counts of handling stolen goods after police raided his home in Kettering, April 2010, following two house burglaries in St Neots. Police found a number of items of jewellery that Dennis O'Brien had claimed he was selling to a dealer in London. Dennis O'Brien had been linked to the burglaries after his DNA profile had been found on a whiskey glass at the crime scene.

- 2.5 As well as additions there are deletions of subject profiles from the NDNAD. The total number of deletions in 2009-10 for all law enforcement agencies was 19,132. The total number of deletions in 2010-11 was 18,372. In both years the majority of these deletions were from Scotland (16,674 in 2009-10 and 16,032 in 2010-11) due to different legislation on retention of profiles. DNA profiles will be deleted from the NDNAD for the following reasons:
- Deletions in line with legislation that governs the force that owns the sample, such as removals from Scotland, Northern Ireland and the Channel Islands.
 - On the request of a Chief Officer following a consideration under the Exceptional Case Procedure applicable in England and Wales.
 - NDNAD Database Unit deletions of verified duplicates.
 - Automated deletions of a DNA profile driven by the PNC record being set for removal.
- 2.6 It is not possible to provide data on the number of deletions for all the categories described above. However, data on the number of subject profiles deleted under the Exceptional Case Procedure are available. In 2009-10, 414 subject profiles were deleted from the NDNAD under this procedure compared with 503 in 2010-11.

Unconvicted individuals

- 2.7 The NDNAD does not contain any information on convictions; this data is held on the PNC and specialised software is required to determine the conviction status of individuals on the NDNAD. The cross comparison of both the NDNAD and the PNC was run for the purposes of this annual report. As of 15 April 2011 there were 1,187,249 individuals entered by English and Welsh police forces on the NDNAD without a current recorded conviction on PNC. However, this does not mean that these individuals have never had a conviction for a recordable offence due to the following factors:
- Up to 2006, police forces removed the records of individuals with less serious convictions and cautions after between 5-10 years from PNC but their DNA profile remained on the NDNAD.
 - Some individuals have been arrested for a recordable offence and proceedings are still on-going.

In December 2008 a tube worker at Balham station was spat at by an abusive commuter. The tube worker managed to collect evidence using a "spit kit". In April 2009 Alan Moore was arrested in Devizes, Wiltshire for a criminal damage offence. His DNA profile was taken on arrest and this matched with the samples obtained at the scene of the attack on the tube worker in Balham. In May 2009 Alan Moore was found in breach of a suspended sentence and sentenced to 120 hours of community service.

Volunteers' DNA profiles

- 2.8 As at 31 March 2010 42,123 of the subject profiles held on the database relate to volunteers. On 31 March 2011 there were 43,886 volunteer profiles held. Under the Police and Criminal Evidence Act (PACE) 1984, a volunteer DNA profile may only be retained on the NDNAD if the individual has given their written consent or if under 18 a parent or guardian may give their written consent on behalf of the individual.
- 2.9 The taking and retention of volunteer samples has been the subject of recommendations by the NDNAD Ethics Group. In response to the NDNAD Ethics Group recommendations, the Strategy Board reviewed current practices of sampling and loading of volunteer DNA samples onto the NDNAD. It has decided that in future, volunteers who consent to provide a DNA sample for elimination purposes should no longer be asked to provide consent for their profile to be loaded to the NDNAD and these profiles will not be loaded.
- 2.10 In certain circumstances, volunteer samples may also be requested from individuals, together with consent for the resulting profile to be searched and retained on a DNA database. Such samples are only requested in a relatively small number of cases, for example, in missing persons enquiries and from potential vulnerable persons. Where consent to retention is also provided, these volunteer profiles will be loaded to the Missing Persons DNA Database (MPDD) or the Vulnerable Persons Database (VPDD). Volunteer samples are also sometimes taken from previously unsampled registered sex offenders and the resulting profiles are loaded to the NDNAD.
- 2.11 In 2009-10 the DNA sampling kits were revised. A new Elimination form was introduced which no longer provides for consent to loading and retention on the NDNAD. Changes were also made to the volunteer sampling consent form used, for example, for taking volunteer samples in missing persons enquiries to ensure that the purpose of the consent to loading on a DNA database was clear.
- 2.12 In addition, further work is currently being undertaken on the 43,800 volunteer profiles retained on the NDNAD:
- working with police forces, legacy 'volunteer' records are being reviewed and removed where the samples were taken purely for elimination,

In May 2010 Paul Dyne pleaded guilty to the rape of an 18 year old girl on wasteland in 1986. The case remained open until 2009 when police were able to match DNA samples found at the crime scene to samples taken from Paul Dyne when he was arrested for an unrelated offence.

- transferring volunteer profiles taken in missing persons enquires and from potential vulnerable persons from the NDNAD to the Missing Persons DNA Database and the Vulnerable Persons Database. For further information, please see paragraphs 7.12-7.13.
- adoption of the 'Gillick principle' to ascertain whether a child or young person can consent for their DNA sample to be taken.

On completion of the review, the NDNAD will hold only volunteer records that relate to:

- volunteer samples taken in the past from convicted sex offenders; and
- volunteer samples taken under Scottish legislation.

Crime scene profiles

2.13 Crime scene profiles are obtained from samples of cellular material (for example, blood, hair, semen and saliva) which are recovered from a scene of crime or a victim and which are thought to have been left there by the offender.

In 2009-10 43,974 crime scene profiles were loaded to the NDNAD. This is a 12.4% decrease in the number loaded in 2008-09 (50,219).

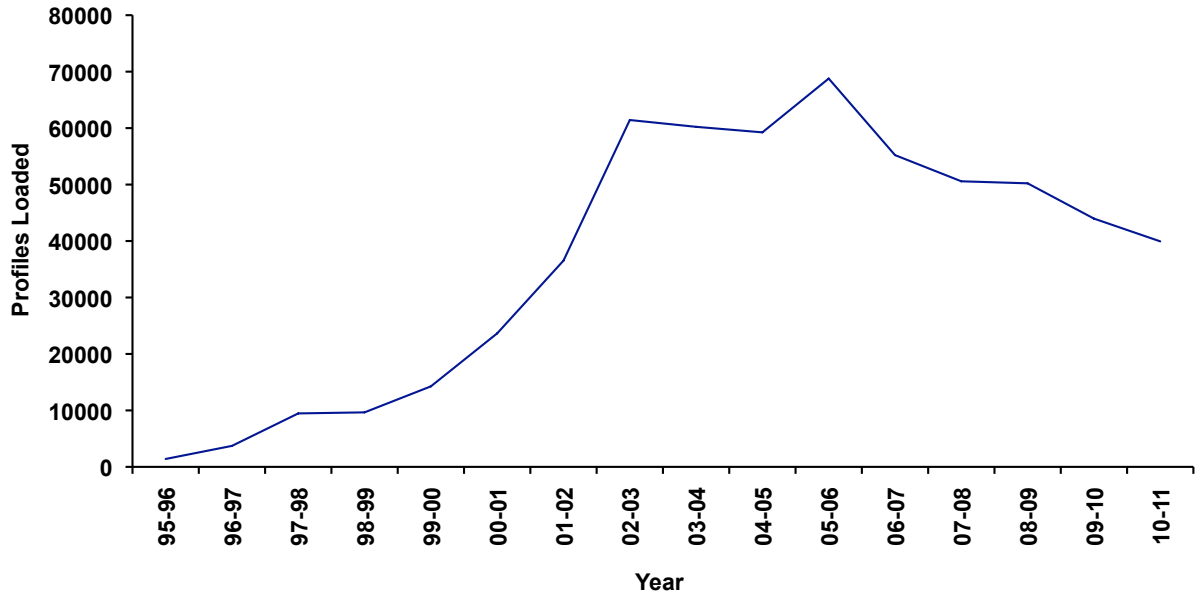
In 2010-11 39,939 crime scene profiles were loaded to the NDNAD. This is a 9% decrease in the number loaded in 2009-10.

Figure 2 shows the trend in crime scene profiles loaded to the NDNAD.

A breakdown of crime scene profiles loaded to the NDNAD by offence type is shown in Appendix B.

On June 30 2010 a 65 year old woman was attacked as she walked along Viking Way, Bracebridge Heath. A local neighbourhood police sergeant found the attacker's discarded white T-shirt. The T-shirt had the DNA of the offender and victim on it and was pivotal to the case. The DNA sample of the attacker was identified to be that of Christopher Marc Mettram. In October 2010 Christopher Marc Mettram appeared in court and pleaded guilty to attempted rape.

Figure 2: Number of crime scene profiles loaded to the NDNAD annually up to 31/03/11 for all law enforcement agencies³



Number of unmatched crime scene profiles retained on the NDNAD

2.14 At 31 March 2011, there were an estimated 162,387 crime scene profiles on the NDNAD which had not matched with any profile from a known subject. These crime scene profiles may have been added to the NDNAD at any time since its creation in 1995. The types of offence from which these crime scene profiles were retrieved are shown in Table 2 below.

³ The number of crime scene profiles loaded each year varies from those published in the last NDNAD annual report as some records have been removed from NDNAD and then re-loaded, overwriting the original load date. There are also a number of records held on the NDNAD for which the load date is unknown; these are not included in this chart.

In June 2010 Robert Carpenter was found guilty of rape and sentenced to six years and eight months' imprisonment. Robert Carpenter had attacked his victim as she walked along a quiet footpath in Scunthorpe on a March morning in 1979. Robert Carpenter was caught when forensic evidence taken from the victim in 1979 was matched to his profile on the National DNA Database collected after he was arrested for causing criminal damage in 1998.

Table 2: Number of unmatched crime scene profiles on the NDNAD as at 31 March 2011 by offence type

Offence type	Unmatched crime scene profiles (at 31/03/2011)
Burglary	67,391
Vehicle theft	39,921
Robbery	7,171
Other violence	3,789
Rape	2,648
Murder, manslaughter & suspicious death	2,500
Aggravated Burglary	1,286
Other sexual offences	939
Attempted murder	733
Abduction & kidnapping	431
Other	35,578
Total	162,387

Notes:

Since April 2002, records have been captured on the NDNAD match reporting Management Information Database (MID) on matches between crime scene profiles and subject profiles. The figures provided are estimates, as it is possible that some crime scene profiles were matched before 2002 and therefore not captured on the MID. The number of unmatched crime scene profiles may therefore be lower than indicated. It is also important to note that although a crime scene profile on the database has not matched to a subject profile, the crime may have been detected through other evidence. The data provided are management information and have not been formally assessed for compliance with the Code of Practice for Official Statistics.

The 'offence types' shown are those recorded by police forces when the DNA crime scene samples were retrieved from crime scenes. These offence types do not necessarily relate to the categorisation of offences used in published recorded crime statistics.

In October 2009 James Judge was making overnight deliveries in Leicester when he spotted a woman wearing a school girl fancy dress outfit. She was walking along Westcotes Drive on her way home after a night out. James Judge, who was naked, attacked her from behind. The woman's screams alerted neighbours who rushed to her aid. James Judge fled the scene collecting his clothes as he ran. Police discovered a sock that James Judge had left behind and were able to collect a DNA sample which was a match to James Judge. In January 2011 James Judge was found guilty of attempted rape and sexual assault.

Crime scene profiles removed from the NDNAD

- 2.15 Crime scene profiles can be removed from the NDNAD at the request of the police following a conviction for the offence or when a decision has been made that it will not be investigated further. During 2009-10 18,347 crime scene profiles were removed from the NDNAD. In 2010-11 16,316 crime scene profiles were removed from the NDNAD.

On the 30 September 2009 Acer O'Toole and accomplice Norman Fisher robbed the Bargain Booze store on Kingsway North. Acer O'Toole entered the store brandishing a knife above his head, the pair then threatened female staff and demanded cash from the till. The pair were both about to leave the store with more than £400 in cash when two men walking past the store noticed the robbery was happening. The two men blocked the door to prevent the robbers escaping, CCTV footage from inside the store showed one of the witnesses punching Norman Fisher several times in the head and blood was found inside the store. Police were able to obtain a DNA sample from the blood found and this was a match to Norman Fisher who was sentenced to four years' imprisonment.

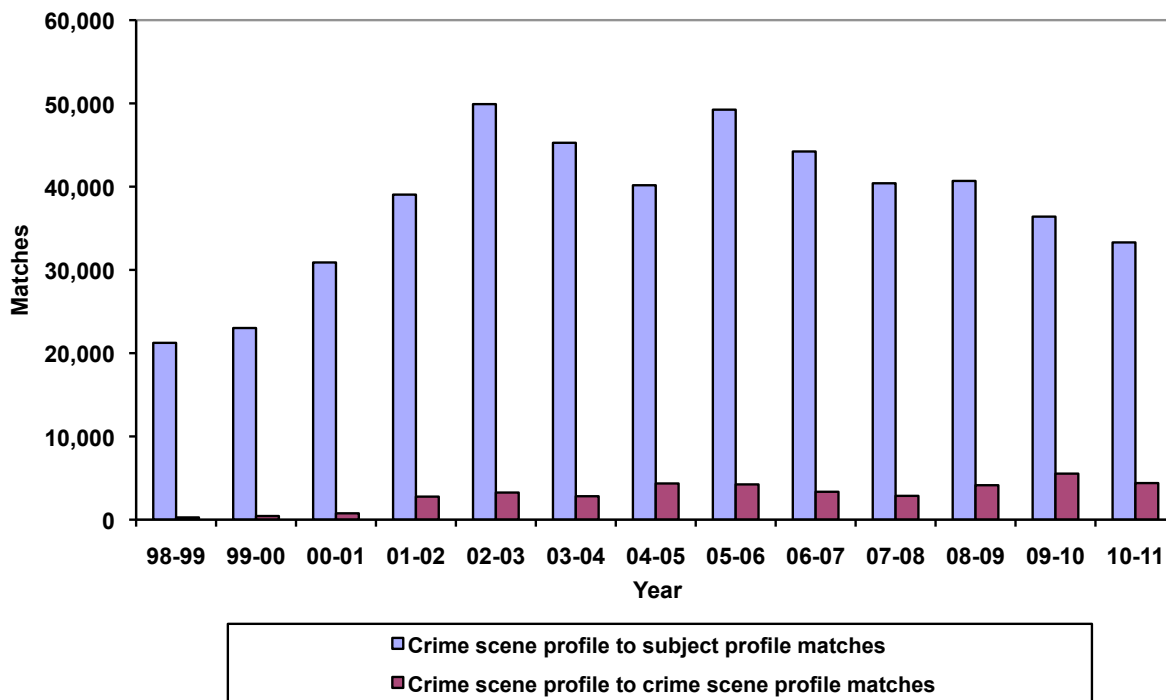
http://www.warringtonguardian.co.uk/news/whereilive/8761035.Knife_thug_jailed_for_four_years/

Section 3 - DNA Matches as a result of Routine Permanent Loading and Searching

3.1 The total number of subject profile to crime scene profile and crime scene profile to crime scene profile DNA matches generated by routine permanent loading and searching of the NDNAD in 2009-10 was 41,930; this is a reduction of 6.5% over the previous year. In 2010-11 the total number of matches was 37,697, a reduction of 10.1% from 2009-10.

The trend in subject profile to crime scene profile and crime scene profile to crime scene profile matches is shown in Figure 3 below.

Figure 3: Crime scene profile to subject profile matches and crime scene profile to crime scene profile matches 1998-99 to 2010-11

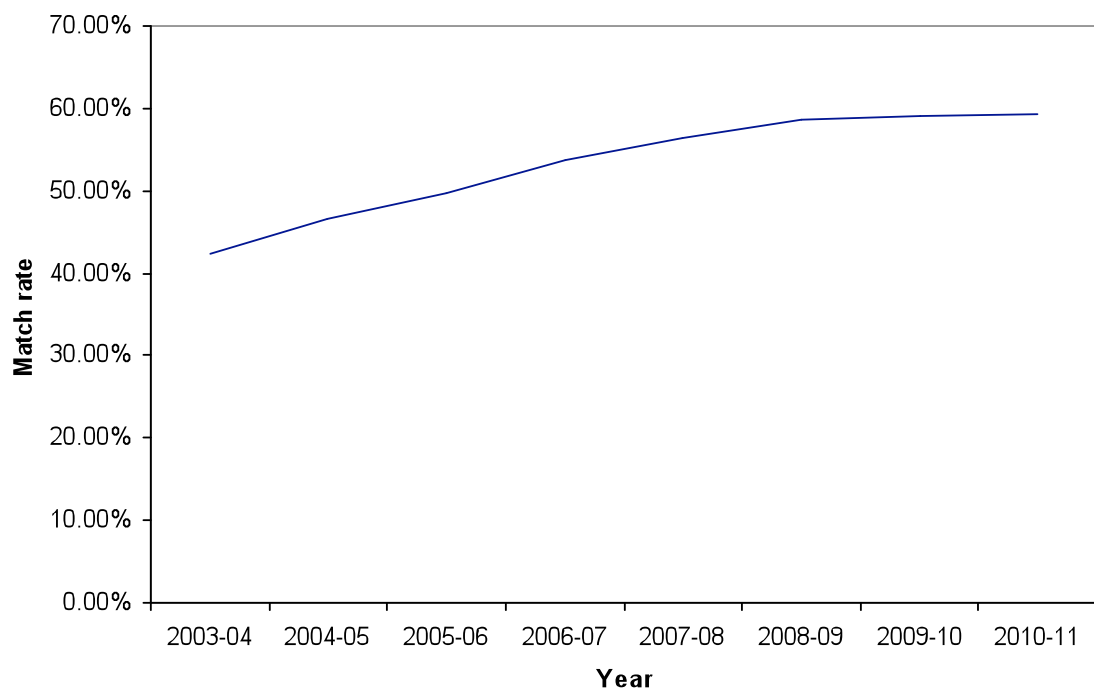


Keith Davison was jailed for eight years in March 2010 for the rape of a woman on the Isle of Wight in 1990. The case remained unsolved for almost 20 years until Keith Davison's daughter was arrested for a minor assault and had her DNA sample taken and added to the National DNA Database.

- 3.2 An indicator of the performance of the NDNAD is the match rate of crime scene profile to subject profile matches following routine loading of new DNA profiles. The match rate between crime scene profiles and subject profiles following routine searching in 2009-10 was 59.2%. In 2010-11 the match rate was also 59.2%.

A graph showing the trend of crime scene profile to subject profile match rate over time is shown in Figure 4.

Figure 4: Crime scene profile to subject profile match rate – April 2003 to March 2011



- 3.3 In simple terms, this means that in 2010-11 approximately six out of ten crime scene profiles searched against the NDNAD matched a subject profile on the NDNAD. This statistic includes matches to a subject profile when a partial crime scene profile is loaded to the NDNAD, but excludes matches found when a new subject profile was added, crime scene to crime scene matches and urgent speculative searches.

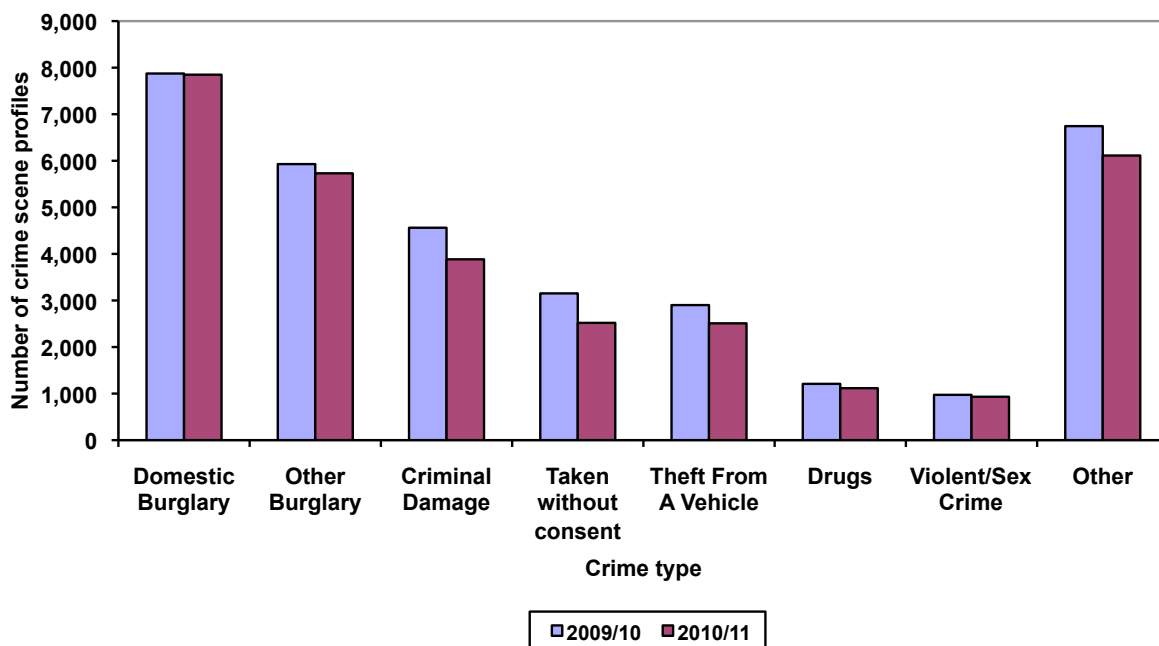
In November 2010 Hyung-Woo Pyo was sentenced to eight years' imprisonment for rape, robbery and possession of a bladed weapon. Hyung-Woo Pyo had broken into a house in Loughborough where he tied up and raped the female resident. He then stole a number of the victim's possessions. Hyung-Woo Pyo was identified as the attacker after a DNA sample was found and searched against the National DNA Database. This search provided a match to Hyung-Woo Pyo who was on the National DNA Database after being suspected of burglary.

- 3.4 Matches to crime scenes profiles also occur when a subject profile is loaded to the NDNAD and matches to a crime scene profile already retained on the database. The subject profile to crime scene profile match rate for 2010-11 was 3.1%. In 2009-10 it was 3.4% compared to 2.3% for 2008-09.

The increase in the match rate seen is due to an IT change which resulted in a higher number of matches to SGM crime scene profiles being produced when subject profiles were loaded to the NDNAD. The change led to an increase in matches involving partial profiles which have less investigative value.

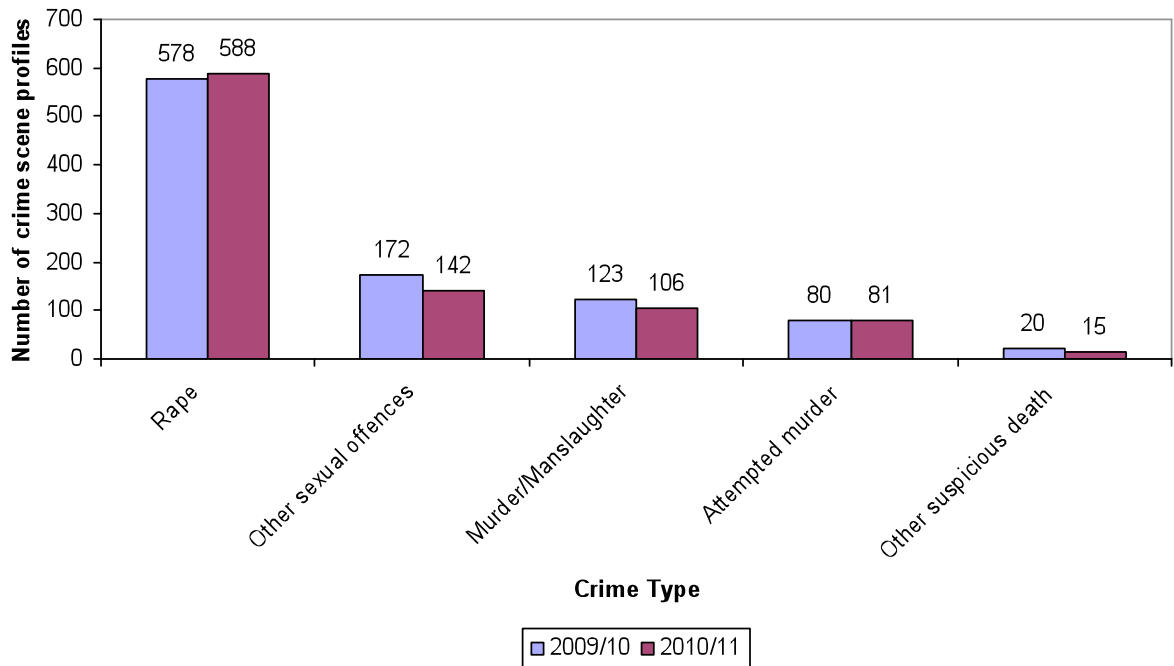
- 3.5 The following graphs show individual investigations by crime type for which one or more crime scene profile/s have been linked to one or more subject profile/s in 2009-10 and 2010-11, please see Figures 5A and 5B below. The other category includes traffic offences, arson, blackmail, kidnapping and some robbery offences.

Figure 5A: Number of crime scene profiles which have been linked to one or more subject profiles in 2009-10 and 2010-11



David Duthie Gillen forced his way into a house in Harraby on March 8 2009 armed with a knife before subjecting an elderly woman to a terrifying ordeal that lasted up to 30 minutes. Gillen raped, sexually assaulted, robbed and humiliated his elderly victim. Police launched a massive investigation that saw DNA swabs taken from 743 men, nearly 900 statements taken by officers and almost 250 houses visited in a 7-month probe. His victim had bravely fought back during her ordeal and bit him during the attack, leaving tell-tale blood stains and DNA evidence. It was this that would prove crucial in confirming David Duthie Gillen was the rapist. Gillen was found guilty and sentenced to 12 years' imprisonment.

Figure 5B: Number of crime scene profiles which have been linked to one or more subject profiles for serious crimes in 2009-10 and 2010-11⁴



Crime scene to crime scene DNA matches

3.6 There are also crime scene profile to crime scene profile matches between DNA samples retrieved from different crimes which provide valuable intelligence for investigators to link crimes and identify serial offending. Since May 2001, 37,631 crime scene profiles have been matched to another crime scene profile from a different crime.

In 2009-10 5,531 new crime scene profiles were linked to another crime scene profile. This is an increase of 34% over the previous year (4,139)

In 2010-11 4,396 new crime scene profiles were linked to another crime scene profile. This is a decrease of 21% over the previous year.

⁴ Figures 5A and 5B show DNA matches as a result of routine permanent loading and searching of profiles on the NDNAD; they do not include matches resulting from urgent speculative searches of the NDNAD which are used in the most serious violent crimes.

In 2003 Astor Murray approached a 22 year old student at a bus stop and offered to taxi her home; he then raped her. The crime remained unsolved for six years until Astor Murray was arrested by police for taxi touting. His DNA sample was collected and searched against the National DNA Database, and his sample matched one found from the rape in 2003. In September 2010 Astor Murray was convicted of rape; he was sentenced to eight years in prison.

The Scottish DNA Database and DNA match rate

- 3.7 Scotland operates its own separate DNA database with 290,770 crime scene profiles and subject profiles retained as at 31 March 2011. All of the subject profiles are also held on the NDNAD. Crime scene profiles which do not match on the Scottish DNA Database are loaded to the NDNAD.

In 2009-10, 3,569 crime scene profiles were loaded to the Scottish DNA Database by Scottish police forces and this generated 1,795 crime scene to subject profile matches. The average match rate between crime scene and subject profiles for routine searching of the Scottish DNA Database was 50.3%.

In 2010-11, 3,908 crime scene profiles were loaded to the Scottish DNA Database generating 2,044 matches, with an average match rate of 52.3%.

For both years, the match rates include matches to subject profiles when a partial crime scene profile is loaded but exclude matches found when a new subject profile is added, crime scene to crime scene profile matches and urgent speculative searches.

The Northern Ireland DNA Database and DNA match rate

- 3.8 Northern Ireland also operates its own separate DNA database with in excess of 113,000 DNA subject profiles as at 31 March 2011. The majority of these subject profiles are also held on the NDNAD. In 2009-10, 899 crime scene profiles were loaded to the Northern Ireland DNA Database by the Police Service of Northern Ireland generating over 550 crime scene to subject profile matches. The average match rate between crime scene and subject profiles for routine permanent searching of the Northern Ireland DNA Database was 62%. The remaining 38% of unmatched crime scene profiles were loaded to the NDNAD. No data is available as yet for 2010-11.

DNA matches as a result of urgent speculative searches

- 3.9 The NPIA NDNAD Delivery Unit (NDU) operates a 24/7 service to undertake urgent speculative searches in the most serious violent crimes where DNA from the perpetrator is recovered but the identity is not known. A significant example of this type of search was the identification of Stephen Wright as the donor of DNA found at the post-mortem of one of the five women murdered in Ipswich in 2006. In 2009-10 there were 571 urgent speculative

Raymond May was sentenced to five years' imprisonment in May 2010 for the rape of a woman in 1978. He had attacked his victim while she was walking home from a hotel in Durham. A DNA sample obtained at the scene of the 1978 attack matched a sample on the DNA database belonging to Raymond May, who had received a conviction in 2000 for being drunk and disorderly.

searches involving all police forces in England and Wales. In 2010-11 there were 449 urgent speculative searches. The results of these searches are shown in Table 3 below.

Table 3: Results from urgent speculative searches 2009-10 and 2010-11

Crime Type	Searches		Matches			
	2009-10	2010-11	2009-10		2010-11	
Murder / Manslaughter (including attempts)	167	96	107	(64.1%)	64	(66.7%)
Rape	149	142	101	(67.8%)	85	(59.9%)
Burglary (including aggravated)	52	23	29	(55.8%)	16	(69.6%)
Robbery	36	33	26	(72.2%)	21	(63.6%)
Explosives and Firearms	32	18	17	(53.1%)	10	(55.6%)
Other Sexual crimes	30	25	22	(73.3%)	22	(88.0%)
Total Urgent Speculative Searches	571	449	359	62.9%	274	61.0%

Standard speculative searches

3.10 Standard speculative searches of the NDNAD are where the DNA profile searched is not retained on the NDNAD. There were 5,205 standard speculative searches run against the DNA database in 2009-10 and 3,837 in 2010-11. The circumstances where a standard speculative search may apply include:

- a DNA profile with a minimum of four numeric allele designations has been obtained from a crime scene but does not meet the minimum criteria for loading profiles to the NDNAD;
- request for a repeat of a previous speculative search;
- International Search Requests; 610 search requests were sent to the NDNAD in 2009-10 to be one off speculatively searched. In 2010-11, 392 requests were received and speculatively searched against the NDNAD;

Ojai Miller was a member of a violent gang that burst into a McDonald's restaurant in Telford on March 23 2009, terrorising a young family who had been enjoying a meal.. They vaulted the counter before threatening the manager at knifepoint, forcing him to hand over £5,000 in takings. Footage from CCTV cameras showed that moments before the raid, Ojay Miller had finished a soft drink and thrown the bottle on the ground. Forensics experts found Miller's DNA on the neck of the bottle.

- the profile has been obtained by interpretation of a complex mixture of DNA in a crime scene sample and there is a reasonable doubt as to whether the derived profile originated from a single person; and
- the DNA profile is from a deceased person and the search is for the purpose of identification only.

Familial searching

- 3.11 Familial searching is the use of the NDNAD to identify potential close relatives of an individual whose DNA profile is **not** retained on the NDNAD. The familial searching approach is based on the principle that DNA is inherited and all members of a family will share some DNA. Children will share half of their DNA with their father and half with their mother. The extent to which siblings share their DNA is variable but they will tend to share a larger proportion of DNA than unrelated people.
- 3.12 In order to take a proportionate approach recognising data protection and human rights legislation, familial searching of the NDNAD is restricted to the most serious crime investigations only. The NDNAD does not routinely perform the familial searching procedure. If the initial search of a crime scene profile against the NDNAD does not produce any matches, a familial search may be undertaken if requested by an ACPO officer and approved by the Chair of the Strategy Board. Between 2003 and April 2011, data held by the NPIA indicates that forty three suspects have been identified as a result of a familial search of the NDNAD. Of the forty three suspects, six were deceased, the remaining thirty seven were charged with an offence and thirty five were convicted, with one case still before the courts. Since the inception of familial DNA searching as an investigative technique, the NPIA Crime Operational Support (COS) has developed considerable knowledge and experience in relation to the application of this technique and are consulted from the outset if familial DNA searching is being considered.
- 3.13 Sixteen cases were searched using the familial searching procedure during 2009-10. Two of these familial searches have since resulted in the cases being detected. The most notable is the case of the murder of Teresa de Simone in 1979. This was the case for which Sean Hodgson was wrongly convicted and then freed after DNA evidence proved he could not have committed the crime. The offender in this case was identified through familial searching. The murder of Colette Arum, the first case ever featured on the BBC's Crimewatch programme, was also solved through familial searching, after a DNA profile from the crime scene was linked to a family member on the NDNAD. In 2010-11 55 cases were searched against the NDNAD using familial searching.

Stephen Leonard pounced on a woman as she was making her way home from a night out in Manchester in January 1998. He grabbed her from behind and dragged her down an alleyway where he raped her. The victim reported the attack to police and swabs were found to have semen on them but at the time this was not enough to get a DNA profile. Greater Manchester Police's Cold Case Review Unit re-examined the evidence in 2007. Stephen Leonard had a history of driving convictions and when arrested in 2002 for driving while disqualified was required to provide a DNA sample, which matched that taken from his victim. Stephen Leonard was found guilty of rape and sentenced to seven and a half years' imprisonment.

Section 4 - The contribution of the NDNAD to Crime Investigation

Background

4.1 As reported in the preceding sections, the NDNAD Delivery Unit produces management information on the number and type of DNA profile matches generated on the NDNAD. It is not however able to provide information on the number of crimes which are detected following a match since the investigation and detection of crimes are a matter for the police. When a DNA scene to subject match report has been generated on the NDNAD, it is transmitted to the police force from which the crime scene profile was collected and, from that point onwards, it is their responsibility to investigate the information provided by the DNA match.

4.2 The source of data on the contribution of the NDNAD to crime investigation is police data on forensic activity and related detections. These data are collected by the Home Office from the 43 police forces in England and Wales and British Transport Police. The data are based on crimes and include:

- the number of crimes that have a crime scene examination
- the number of crimes with a DNA match
- the number of crimes with a DNA match which are detected⁵ and
- the number of additional crimes which are detected⁶.

4.3 The Forensic data do not provide a complete picture of the contribution of the NDNAD to investigations as they do not include 'crimes with matches' and 'crimes with matches which are detected' arising from urgent or standard speculative searches of the NDNAD. Nor do they include matches and detections arising from direct comparison of crime scene and subject profiles in a forensic laboratory.

5 A crime is detected when a suspect has been identified for that crime and there is sufficient evidence to charge the suspect. In such cases, the Crown Prosecution Service requires that, in addition to the DNA match, there must be supporting non-DNA evidence available. Convictions are achieved through integrated criminal investigation and evidence from a number of sources - not through a DNA match alone.

6 For example, a suspect on being presented with DNA match evidence linking him to one offence, may also confess to further offences.

Wayne Tack was jailed in July 2009 for attacking a lone woman in a Birmingham alleyway as she made her way home from Longbridge train station. He dragged the victim to the ground and said he would rape her unless she handed over her handbag. The woman struggled to fight him off as he sexually assaulted her and bit his fingers, traces of blood Wayne Tack left on the victim due to her biting him led to his identification. Within 48 hours of the attack, detectives had Tack's name and arrested him. Wayne Tack pleaded guilty to charges of robbery and sexual assault and was handed an indeterminate prison sentence.

General contribution

- 4.4 In previous annual reports the data provided on the contribution of the NDNAD has been primarily the number of detections of crime in which a DNA match was available. This provides an indication of the contribution of the NDNAD, but such data does not take into account several contextual and causational factors in achieving detections and reflecting the overall contribution of the NDNAD, including:
- the trends in total crimes committed and in specific types of crime such as acquisitive crime (burglary and vehicle crime), sexually motivated crime (rape and indecent assault) and serious violent crime including homicide,
 - the level of forensic intervention in total crime and specific types of crime. In the majority of recorded crime, such as illegal drug use, fraud and traffic offences, DNA profiling plays little or no part as there is limited opportunity for the transfer of DNA or it is not relevant to the commission of the crime that results in a detection,
 - the data presented in earlier annual reports only included the DNA matches from routine bulk searching of the NDNAD and did not include matches from urgent speculative searching and so does not include all of the most serious cases,
 - the investigation processes that follow a DNA match including the ability to locate the individual and interview them about the crime,
 - the decision as to whether the DNA match combined with other supporting evidence is sufficient for a prosecutor to agree to charge an individual with the offence from which the crime scene profile originated; a detection is only recorded following a match when an individual is charged, cautioned or there is an authorised disposal of the criminal investigation.
- 4.5 Most of the above factors are outside the direct control and remit of the NDNAD but it is important that the outcomes and use of the NDNAD are understood and provide a basis for improving the contribution of the NDNAD to crime investigation. The NDNAD is a constant source of debate with calls, notably from the Human Genetics Commission, that its contribution and impact should be better understood. The Strategy Board fully support this and have called for a wider study of the utility of DNA profiling to inform public understanding and policy making.

Mark Weston was cleared of murdering Vikki Thompson in 1996. He went on trial for a second time in 2010 following the discovery of new DNA evidence. Thames Valley Police reopened the investigation in 2005 after small amounts of Vikki Thompson's blood, which had been missed during the initial investigation, were discovered on a pair of Mark Weston's boots. Vikki Thompson had been hit repeatedly to the back of her head with a heavy blunt object. In 2010 Mark Weston was found guilty of the murder.

- 4.6 In 2009-10, there were 32,552⁷ crimes with a DNA match, 11.4% less than in 2008-09. In 2010-11 there were 30,315 crimes with a DNA match, 6.9% less than in 2009-10. The number of crimes detected in which a DNA match was available was 15,376 in 2009-10, which is a 12.7% reduction on 2008-09. In 2010-11 there were 14,228 crimes detected with a DNA match, a reduction of 7.5% on 2009-10. The full breakdown of recorded crime, crimes with DNA matches, crimes detected in which a match was available and total detections is set out in Table 4 below.

Table 4: Forensic activity and DNA-related detections in 2009-10 and 2010-11

Number of crimes						
Year	Recorded crime	DNA scene to subject match	Detected where a DNA match was available	Additional detections arising from DNA match	Total DNA-related detections	Total sanction detections (all evidence types)
2009-10	4,338,372	32,552	15,376	10,990	26,366	1,206,379
2010-11	4,150,097	30,315	14,228	8,974	23,202	1,153,051

Sources: Police data on forensic activity and related detections; HO stats bulletin Crime in England & Wales 2010-11

1. 'Detected where a DNA match was available' means that the crime was cleared up and a DNA match was available but it does not necessarily mean that the match led to the detection
2. 'Additional detections arising from DNA match' occur when, for example, a suspect, on being presented with DNA evidence linking the individual to one offence, confesses to further offences.
3. 'Total DNA-related detections' equals 'Detected where a DNA match was available' + 'Additional detections arising from DNA match'

- 4.7 The reduction in DNA matches from the NDNAD needs to be considered in the context of:
- a 7.7% reduction in total crime in 2009-10 compared to 2008-09, a 4.3% reduction between 2009-10 and 2010-11 and a 25.3% reduction over five years
 - a forensic intervention rate in total crime measured as the proportion of crimes with a scene examination of 16.6% in both 2009-10 and 2010-11

⁷ In some serious crimes, two or more DNA crime scene sample profiles may be loaded to the NDNAD and both may result in a DNA match on the NDNAD. For this reason, the number of individual DNA matches on the NDNAD is usually higher than the number of 'crimes with a DNA match'.

In the early hours of January 1 2010 Barrington Leroy Sinclair was thrown out of a New Years Eve party by his girlfriend. At the same time a 20 year old female was making her way home alone after celebrating the New Year. Barrington Leroy Sinclair dragged her down an alleyway before raping her. Police collected DNA evidence from the crime scene and this evidence aided police to track down Barrington Leroy Sinclair. In December 2010 Barrington Leroy Sinclair was found guilty of rape and sentenced to seven years' imprisonment.

- a 9.4% reduction in the total number of crime scenes examined in 2009-10 compared to 2008-09 and a 4.3% reduction between 2009-10 and 2010-11
- a 9.8% reduction in all sanctioned detections in 2009-10 compared to 2008-09 and a reduction of 4.4% between 2009-10 and 2010-11

4.8 Overall contribution of the NDNAD to crime investigation from permanently loading a DNA profile has reduced slightly more than the overall levels of crime and detections have reduced. However, the contribution of the NDNAD is different from one crime type to another and the following paragraphs set out the contribution in key areas of crime investigation. Numbers of DNA matches and detections vary by the type of crime being investigated.

Property based crime

- 4.9 Property crimes include burglary, vehicle crime and criminal damage. The NDNAD plays a role in identifying the offenders who commit these types of crime and this type of offending is characterised by limited opportunity to identify the offender from witnesses or the victim. Offenders tend to be prolific, committing many crimes and will seek to minimise the opportunities for detection. The primary role of DNA profiling and the NDNAD is to identify potential suspects for the crime from material left at the location of the burglary or on the vehicle that is stolen. The overall intervention rate for burglary is high and also for stolen vehicles where the vehicle is recovered but much lower for criminal damage, reflecting less opportunity for DNA to be transferred.
- 4.10 Over the two year period from 2008-09 to 2010-11, domestic burglary crimes have decreased by 9.3% and theft of vehicle crimes have decreased by 28%. Over the longer term i.e. over the last five years, there have been significant reductions in domestic burglary offences (a 14% decrease between 2005-06 and 2010-11) and theft of vehicle offences (50% decrease over the same five year period).
- 4.11 Table 5 presents the number of crimes detected in which a DNA match was available for both 2009-10 and 2010-11. The number of domestic burglary detections in which a DNA match was available decreased from 3,702 in 2008-09 to 3,226 in 2009-10, a fall of 13%; and then increased slightly by 3% to 3,320 in 2010-11. The number of theft of vehicle detections in which a DNA match was available decreased from 1,298 in 2008-09 to 948 in 2009-10, a fall of 27%; and decreased to 723 in 2010-11, a fall of 24%.

In March 2010 Ben Andrew disguised himself with a blue cloth mask with cut out mouth and eye holes. He entered a local store raising a metal bar and threatening the staff with violence. He left the store with £240 of stolen cash. When police searched the local area after the robbery they discovered the home made balaclava and forensically examined samples of saliva that were present. A DNA sample was obtained matching a sample on the National DNA Database for Ben Andrew. In December 2010 Ben Andrew was found guilty of robbery and sentenced to three years' imprisonment.

Table 5⁸ Forensic activity relating to property crimes and DNA related detections for 2009-10 and 2010-11

Number of crimes							
Crime type	Year	Recorded crime	Crime scene examinations	Crime scene profile loaded to the NDNAD	DNA matches	Detected where a DNA match was available	Total sanction detections (all evidence types)
Domestic Burglary	2009-10	268,610	247,431	9,236	7,522	3,226	42,423
	2010-11	258,148	241,429	9,168	7,384	3,320	43,908
Theft of vehicle	2009-10	117,687	40,088	2,893	2,697	948	19,742
	2010-11	106,228	32,853	2,299	2,244	723	17,322

Sources: Police status on forensic activity and related detections; Home Office stats Bulletin Crime in England and Wales 2010-11

4.12 DNA makes an important contribution to solving property based crime and in those cases where a DNA match is available the detection rate increases significantly. In 2009-10, while the overall domestic burglary detection rate was 16%⁹ where DNA was available and loaded on to the NDNAD, the detection rate rose to 35%¹⁰. In 2010-11, the overall domestic burglary detection rate was 17%, rising to 36% where DNA was loaded to the NDNAD.

4.13 Similarly, in 2009-10, while the overall theft of vehicle detection rate was 16.8%¹¹ where DNA was available and loaded on to the NDNAD, the detection rate rose to 33%¹². In 2010-11, the overall theft of vehicle detection rate was 16.3% rising to 31% where DNA was loaded to the NDNAD.

- 8 Table 5 shows the number of crimes where a crime scene examination took place. At a crime scene examination, Crime Scene Investigators look for and collect any evidence left by the offender which could include DNA evidence, fingerprints, footwear and other forensic evidence types.
- 9 In 2009-10 (2010-11), there were 268,610 (258,148) domestic burglary crimes and 42,423 (43,908) sanction detections, an overall detection rate of 16% (17%).
- 10 In 2009-10 (2010-11), there were 9,236 (9,168) domestic burglary crimes where a crime scene profile was loaded onto the NDNAD; and 3,226 (3,320) domestic burglary crimes detected in which a DNA match was available giving a detection rate where DNA was available of 35% (36%).
- 11 In 2009-10 (2010-11), there were 117,687 (106,228) theft of vehicle crimes, and 19,742 (17,322) sanction detections, an overall detection rate of 16.8% (16.3%).
- 12 In 2009-10 (2010-11), there were 2,893 (2,299) theft of vehicle crimes where a crime scene profile was loaded on to the NDNAD and 948 (723) theft of vehicle crimes detected in which a DNA match was available, giving a detection rate where DNA was available of 33% (31%).

In March 2010 Dennis Fitzgerald was sentenced to eight years' imprisonment for the rape of a woman in Poole in November 1987. At the time of the attack police were unable to identify the attacker. The case was reopened in 2004. Dennis Fitzgerald was arrested for a separate incident by Nottinghamshire Police and he provided a DNA sample on arrest. His sample matched the crime scene sample on the National DNA Database.

Sexually motivated crime

4.14 DNA profiling is a primary consideration in sexually motivated crime, as much of this type of crime involves the transfer of body fluids and physical violence towards the victim. It provides the potential for increased opportunities to assist investigations and bring offenders to justice.

It will always be the first consideration in cases where:

- the suspect is unknown and there is a requirement to identify the offender as a matter of urgency,
- to confirm a sexual act has taken place with a child,
- when sexual intercourse is denied or refuted, even if the parties are known to each other.

4.15 All victims of rape who report the crime are offered an immediate appointment at a Sexual Assault Referral Centre (SARC) staffed by health care professionals to ensure the effective retrieval of forensic evidence and document injuries. It is the quick, detailed and comprehensive collection of evidence from victims that provides crucial evidence in rape and other sexually motivated crime. In many cases the suspect is known to the victim but where the crime is committed by a “stranger” then the NDNAD can identify potential suspects. Given the seriousness of these cases, searching is often undertaken as an urgent speculative search and as set out in paragraph 3.9. In 2009-10, 149 urgent speculative searches were conducted in rape cases, resulting in 101 matches to a subject profile on the NDNAD; and in 2010-11, 142 urgent speculative searches were conducted in rape cases, resulting in 85 matches to a subject profile on the NDNAD.

4.16 The number of detections in which a DNA match identified through a routine search was available in rape investigations increased from 168 in 2008-09 to 190 in 2009-10 and increased again to 239 in 2010-11. These figures are likely to underestimate the actual number of rape offences detected where a DNA match is available as the outcome of cases where an urgent speculative search was used is not returned by forces and is therefore not included in these figures.

4.17 The NDNAD also plays an important role in cold case reviews in sexually motivated crime. This involves the re-examination of material from crimes committed many years ago to locate and obtain the DNA of the offender.

On 19 October 2008 a woman was dragged into a bedsit as she walked home from a night out, in Coventry, and repeatedly raped. A semen stain was submitted for comparison against the National DNA Database in December 2008, resulting in a full match to Abdirahman Ali Gudaal. In June 2009, Abdirahman Ali Gudaal, 28, was convicted of rape and kidnapping at Coventry Crown Court. He was sentenced to 10 years' imprisonment.

The Metropolitan Police Service cold case review team has been particularly successful in the re-examination of sexually motivated crime cases with;

- 364 historic cases re-examined
- 340 DNA profiles obtained and searched against the NDNAD
- 198 DNA matches obtained- 63 resulted in a prosecution with 45 individuals pleading guilty and 18 convicted by a jury
- 134 outstanding crimes have revealed DNA profiles that did not match any individual on the NDNAD and are permanently retained on the NDNAD

Case Study: Sexually Motivated Crime, MPS Operation Sapphire Cold Case Reviews

Wayne Liddy –pleaded guilty to rape and sexual assault on three women in east London between 1993 and 1994, he was sentenced to 12 years.

Homicide investigation

- 4.18 Every homicide investigation¹³ will involve a forensic intervention. A study carried out by the ACPO Forensic Performance and Standards Group found that DNA evidence featured in over 90% of murder investigations in 2009-10. The contribution of DNA profiling and the NDNAD in homicide investigation is much broader than that of acquisitive crime such as burglary. It will not only identify or eliminate potential suspects but can also identify the victim, it can confirm or refute the accounts of witnesses, establish the sequence of events and provide rapid results that can lead to a speedy outcome, reducing the duration that murder teams need to be applied to a specific investigation. It is in the murder investigations where the perpetrator is not known to the victim and the police have few investigative leads that identification by the NDNAD can have dramatic results. The Home Office Homicide Index for 2009-10 estimates that in 28% of homicide investigations the suspect was either a stranger to the victim or had no known relationship with the victim.
- 4.19 An analysis of NDNAD matches for murder and manslaughter crimes was carried out for the year 2009-10. It found that in 2009-10 the NDNAD produced 276 DNA matches in murder and manslaughter investigations.

¹³ 'Homicide' means the Home Office recorded crime category 'homicide' which covers murder, manslaughter and infanticide.

In May 1988 Lee Martin attacked and raped a 20 year old woman in the grounds of her nurses' accommodation in Bradford. The crime remained unsolved for over two decades. In 2009 detectives carried out a cold case review of the case. Police were able to obtain a new DNA profile which matched with Lee Martin, whose DNA sample had been collected after he was arrested for being drunk and disorderly. In June 2010 Lee Martin was found guilty.

The breakdown of these DNA matches, the search method and type of match was as follows;

- 107 DNA matches were the result of an urgent speculative search of a crime scene profile from the murder investigation,
- 169 DNA matches were from routine permanent searching, where 105 were immediate DNA matches between a crime scene profile and an existing subject profile and 64 were DNA matches between a crime scene and a subject profile that was subsequently added to the NDNAD.

4.20 The ability of the NDNAD to make connections across different areas of criminality is particularly pronounced in homicide investigations where individuals who have committed relatively minor crime will be identified in a murder investigation through a match to a crime scene profile from that investigation. In the 105 matches with an existing subject profile, referred to above, the most common offences in which the subject profile had been taken are shown in Table 6.

Table 6: Arrest offence for which a DNA subject profile is taken that subsequently matched a crime scene profile from a murder investigation during 2009-10

Arrest offence for which DNA taken	Number
Assault	12
Theft	11
Criminal Damage	11
Drugs	9
Theft of Vehicle	8
Robbery	7
Burglary (including aggravated)	7
Public Order	7
Excess Alcohol	3
Handling Stolen Property	3
Other	27
Total	105

Gavin Gordon was jailed indefinitely in May 2010 after being convicted of unlawful imprisonment, robbery, actual bodily harm and theft. He was part of a gang that targeted a 26 year old woman and her partner in their Clapham home. Gavin Gordon was caught after his DNA was found on a juice carton at the scene of the attack.

- 4.21 There are also many crime scene profiles from murder cases that remain unidentified and have the potential to produce a match in the future should a subject profile be searched against the NDNAD. As of 31 March 2010 and 2011, the crime scene profiles from murder investigations that were retained on the NDNAD are set out in Table 7.

Table 7: Crime scene profiles retained by offence type

Offence type	Crime scene profiles retained 31/03/10	Crime scene profiles retained 31/03/11
Attempted Murder	554	733
Murder/Manslaughter	2,088	2,344 ¹⁴
Other Suspicious Death	129	156

Intelligence led screens to eliminate individuals from murder investigations

- 4.22 The NDNAD may be used to eliminate individuals from murder investigations through the use of intelligence led screening. Where DNA is recovered from a crime scene or a victim and is believed to originate from the perpetrator an intelligence led screen can provide a rapid method of eliminating individuals as suspects. Intelligence led screens may be carried out where the police are unable to identify the offender for a serious crime but have reason to believe that they may reside in a particular area or population. The population may be further defined in terms of other information available from witnesses, such as age or ethnic appearance. Members of the target group are then approached to see if they will agree to provide a DNA sample for analysis to help eliminate them from the enquiry. Provision of a sample is wholly voluntary and it may only be used for the purpose of the investigation for which it was provided.
- 4.23 In England and Wales, in 2009-10 eighteen new intelligence led screens were undertaken and a further four in Scotland. Over 2,200 samples were processed and compared against a crime scene profile. Four DNA matches were obtained through intelligence led screening; two in England and Wales and two in Scotland.

¹⁴ In murder investigations, there are likely to be several crime scene profiles per crime.

The murder of a woman for which the Yorkshire Ripper had been blamed was carried out by Christopher Smith who was linked to the murder by DNA evidence. Joan Harrison was found battered and raped in a garage in Preston. Christopher Smith remained at large over the murder until the day he died of cancer aged 60 in 2008. Six days before he died his DNA was taken when he was breathalysed for drink-driving. It was his first appearance on the national DNA database after having stayed out of trouble for 18 years, and he was connected to evidence collected at the scene of the mother-of-two's death.

- 4.24 In England and Wales in 2010-11, eleven new intelligence led screens were undertaken and a further two in Scotland. Over 1,500 samples were processed and compared against a crime scene profile. One match was obtained through intelligence led screening in England and Wales.
- 4.25 The NDNAD also plays a role in elimination of individuals in all crime investigations. The usefulness of elimination is illustrated in the Operation Damespoint Case Example where two new suspects were identified and at the same time the original suspect was eliminated.

Case Example: Operation Damespoint - Murder of Dilip UNADKAT

In November 2008, police received a call from worried family members stating that they had been unable to contact Dilip UNADKAT. The police attended his home and found his body. He had been stabbed to death on the bedroom floor. The deceased had recently visited several jewellers to obtain valuations of jewellery that had been left to him and his siblings. This provided a possible line of enquiry.

Initially, the only suspect was a male acquaintance of the victim. There was no forced entry and few signs of anyone other than the victim having been in the premises. However, the Crime Scene Investigator recovered a number of cigarettes from the scene which produced DNA profiles. These matched two individuals Ahmed ABU-HAJAJ and Sami Mahmoud SALAMA who were not known acquaintances of the deceased. Following further enquiries, both persons were subsequently arrested and charged, and the original suspect was ruled out of the investigation.

On 14 October 2009 following a three week trial at the Old Bailey, Sami Mahmoud SALAMA was found guilty of murder and sentenced to 25 years. Ahmed ABU-HAJAJ was charged on lesser counts of theft of property and concealment of a crime and was found guilty.

In December 2010 Peter Hull was sentenced to six years' imprisonment for raping a woman in 1994. The case remained unsolved until a cold case review was undertaken in 2008. DNA evidence found at the crime scene was added to the National DNA Database. A match was found after Peter Hull was arrested by police on an unrelated matter.

Section 5 - External Scrutiny and Review

Human Genetics Commission (HGC) Report: Nothing to Hide, Nothing to Fear?

- 5.1 This report, published on 24 November 2009, followed the 2008 **Citizens' Inquiry** and the subsequent public **consultation** on the NDNAD. The HGC summarize the main arguments of the report as follows:
- whether profiles of unconvicted people should be recorded on the NDNAD is a fundamental question affecting the relationship between the individual, society and the state and decisions about this should therefore be informed by public debate and taken by Parliament;
 - the de facto purpose of the database has shifted over time and should now be set out and constrained in primary legislation;
 - robust evidence of the 'forensic utility' of the database should be produced to justify the resource cost and interference with individual privacy it represents;
 - this is particularly relevant to the question of which (assuming any) unconvicted people may have their profiles retained on the NDNAD;
 - more open and independent governance arrangements should be put in place to increase public confidence and co-operation, in particular: a wholly independent oversight board; regular publication of data reviews; independent appeals review board for applications to have subject profiles removed; enhanced role for the Ethics Group etc.

The report did not recommend a database of a particular size or scope, although it ruled out, at present, a population-wide database. In the HGC's view, the scope would depend on the acceptability of retaining profiles from unconvicted people (which should be decided explicitly by Parliament) and the robustly evaluated 'forensic utility' of doing so. A full response to HGC's recommendations is set out in Appendix C.

The National DNA Database Ethics Group Report

- 5.2 In September 2009, the Home Office announced the publication of the Second Annual Report of the NDNAD Ethics Group covering the period to April that year. Its Third Report, covering the period to April 2010, was published in July 2010. Both reports made a number of important recommendations and as stated above a full response to those recommendations by the Strategy Board is set out in Appendix C.

On the 12 June 2009 at about 2:30am Gary Grubb attacked two young women as they walked through Laycock Gardens. Police identified Gary Grubb as the attacker after a DNA sample at the crime scene matched a sample on the National DNA Database taken from Gary Grubb after he was arrested for drink driving in 2006. Gary Grubb was arrested by police as he tried to re enter the UK at Gatwick airport. In December 2010 Gary Grubb was found guilty and sentenced to 10 years' imprisonment.

- 5.3 Where the Ethics Group made recommendations in its Second Report based on their concerns about the issue of consent by either volunteers or children and young people, those concerns have, we believe, been met by changes in the law contained in the Protection of Freedoms Bill. Most importantly, volunteers will in the future be able to withdraw that consent at any time. (The position relating to volunteers is discussed in more detail in paragraphs 2.8-2.10). The Ethics Group also expressed concerns about the recording of ethnicity on the NDNAD and the proportion of young black men on the NDNAD. The Strategy Board acknowledges the need to provide the public with more easily available information about DNA and its forensic use. This Report is in part an attempt to do that, together with the recently upgraded NDNAD website. Concerns about the retention and destruction of DNA profiles and samples and the statutory basis of the Strategy Board are also dealt with in the Protection of Freedoms Bill.
- 5.4 In its Third Report, the Ethics Group highlighted the need for further studies to be undertaken into the proportionality and use of the NDNAD in respect of certain categories of individuals and the effectiveness of the NDNAD in helping to solve crime. Whilst the Strategy Board supports these recommendations, much will depend on what future funding is available to undertake additional research. The Strategy Board also accepts the need to consider ethical issues at each stage of the use, obtaining and retention of DNA samples and profiles and looks forward to its continuing collaboration with the Ethics Group in these considerations. Governance of the Strategy Board and its transparency and openness are covered by the Protection of Freedoms Bill.

Home Affairs Select Committee Report

- 5.5 In March 2010, the Home Affairs Select Committee (HASC) published a report on the NDNAD. The Report focuses on two main issues: the policy of retaining DNA taken from unconvicted persons and the lack of consistency in decisions taken by Chief Constables to remove an individual's DNA profile from the NDNAD. The Chair of the Strategy Board gave evidence to the Committee. Although the Select Committee Report raised a number of concerns about policy, the Committee nevertheless acknowledged their strong belief that DNA profiling and matching are vital tools in the fight against crime and the Committee did not question the taking of a DNA sample from everyone arrested for a recordable offence.

In September 2010, Jamie Smith admitted raping a 16 year old girl in September 1979. Jamie Smith punched the victim in the face before dragging her into a grassed area in Hornsea and raping her. The crime remained unsolved for more than 30 years until Jamie Smith had his DNA sample taken following an arrest in connection with running a cannabis factory. This sample was added to the National DNA Database and a match found from the 1979 rape.

Runnymede Trust

- 5.6 The Runnymede Trust organised a number of events looking at the disproportionate representation of black persons in the Criminal Justice System. Runnymede's work seeks to identify challenges to race equality in criminal justice and offer solutions to them. In September 2009, the Runnymede Trust invited a range of experts - including academics, campaigners, Government officials, the police and young people - to examine ethnic profiling in the UK. It subsequently published a report 'Ethnic Profiling: The Use of 'Race' in UK Law Enforcement' which presents the issue from different voices and perspectives, including the young people who may be the subject of stop and searches. The report included references to the representation of young black males on the NDNAD. In February 2010, the Runnymede Trust also hosted an online conference exploring ethnic profiling in the UK.

On 30 January 2010 Neil Varley returned home after a shopping trip. Jevgenij Kizajev forced Mr Varley into his flat where he held him captive for a six day period. CCTV footage later showed him using Mr Varley's bank card to make mobile phone top-ups and withdraw cash. A neighbour raised the alarm when she saw Jevgenij Kizajev leaving Mr Varley's flat. Police officers broke down the front door of Mr Varley's flat and found him lying seriously ill on his bed. Jevgenij Kizajev was caught after his DNA profile was found on cigarette stubs discovered in the property. In December 2010 Jevgenij Kizajev was found guilty of robbery and false imprisonment and sentenced to 10 years' imprisonment.

<http://www.thisishullandestrading.co.uk/Robber-gets-10-years-prison-slow-torture-pensioner/story-11947184-detail/story.html>

Section 6 – Equality and Diversity

The ethnic appearance of persons on the National DNA Database

6.1 The NDNAD is mainly populated with subject profiles derived from DNA samples taken from arrested persons in custody. The police officer taking the sample also records data about the arrested person; name, gender, date of birth etc and their ethnic appearance. This data is recorded on the Police National Computer (PNC) and transferred electronically to the NDNAD.

Table 8 shows the proportion of people whose profiles have been retained on the NDNAD since its inception in 1995 in each police defined ethnic classification¹⁵.

Table 8: Police defined ethnic appearance of all subject profiles held on the NDNAD as at 31 March 2010 and 31 March 2011

	At 31 March 2010 Percentages	At 31 March 2011 Percentages
White North European	74.8	74.7
Black	7.5	7.5
Asian	5.4	5.6
White South European	2.0	2.0
Middle Eastern	0.8	0.9
Chinese, Japanese or South East Asian	0.7	0.7
Unknown	8.8	8.6

6.2 Using police defined ethnicity classifications, in 2009-10¹⁶ of an estimated 1.4 million arrests, 80.2% were recorded as being of white people, 9.9% were recorded as being of black people, 6.0% Asian people; 2.6% of 'Chinese or Other' ethnic groups and 1.3% of unknown ethnicity. Comparative data on the ethnic appearance of subject profiles loaded onto the NDNAD in 2009-10 broadly reflects the breakdown of arrest figures,

¹⁵ The ethnic appearance data used for NDNAD subject profiles are based on the judgement of the police officer who takes the DNA sample as to which of 6+1 ethnic appearance categories he/she considers the person belongs (6 categories plus 'Unknown'), rather than the self-defined (16 + 1) system of ethnicity used in the Census population data. The ethnic appearance data are recorded to assist with identification.

¹⁶ Home Office Police Powers and Procedures 2009-10. Arrest statistics for 2010-11 are not yet available.

In December 2010 Craig Cudmore was found guilty of robbery after attacking an 87 year old woman. The elderly lady's bag was discovered dumped in a nearby garden and police were able to get a DNA sample from the handle that matched a profile on the National DNA Database belonging to Craig Cudmore, who had previous convictions for shoplifting and handling stolen goods.

please see Table 9 below¹⁷. Ministry of Justice Statistics on 'Race and the Criminal Justice System' show that there were more arrests in 2009-10 per 1,000 population of each BME group (except Chinese or other) than for people of white ethnicity which suggests that it is this interaction that means there is an over-representation of black and ethnic minorities on the NDNAD.

Table 9: Police defined ethnicity of subject profiles loaded onto the NDNAD and persons arrested in 2009-10

	Percent	Percent
Ethnic appearance	Subject profiles loaded (n=476, 418)	Arrestees (n=1,386,030)
White	79.2	80.2
Black	8.4	9.9
Asian	8.0	6.0
Chinese or other	2.6	2.6
Unknown	1.9	1.3

6.3 The issue of the ethnic make up of the NDNAD has been raised previously by the Equality and Human Rights Commission and also by the Home Affairs Select Committee in the report of its inquiry 'Young Black People and the Criminal Justice System'¹⁸. A full Equality Impact Assessment (EIA) was completed and published by the Strategy Board in January 2009. The EIA was undertaken due to the NDNAD being subject to duties contained within the Race Relations Act 2000, Disability Discrimination Act 2005 and Equality Act 2006. The EIA identified actions that could be taken to address inequality on the NDNAD. Updates on progress of the EIA have previously been included in the first and second annual reports to the Home Affairs Select Committee (HASC),¹⁹ made by the previous Government, which reported on the progress made in taking forward the recommendations of the HASC inquiry. In the future, progress will be reported on as part of the annual reporting of the NDNAD.

17 The ethnic breakdown of the subject profiles loaded to the NDNAD would not be identical to the arrest figures as not all arrestees would be sampled. Those arrestees who have been arrested previously are likely to already have their profiles on the NDNAD.

18 The report of the Home Affairs Select Committee's inquiry 'Young Black People and the Criminal Justice System' was published in June 2007.

19 <http://www.justice.gov.uk/young-black-people-cjs-dec09.pdf>; <http://www.justice.gov.uk/publications/docs/young-black-people-cjs-dec-08ii.pdf>; <http://www.publications.parliament.uk/pa/cm200910/cmselect/cmhaff/222/222i.pdf>

In March 2010 Samuel Scott was sentenced to 10 years' imprisonment after being found guilty of raping a woman in Bournemouth in 1992. Samuel Scott broke into the victim's home and raped her. In 2009 Dorset Police's Major Crime Investigation Team began a review of the case. A full DNA profile of the suspect was obtained and loaded on to the National DNA Database and Samuel Scott was identified.

- 6.4 Much has been said in the past about the ethnic make up of individuals whose DNA profiles are retained on the NDNAD and this issue continues to provoke discussion in Parliament, the media and in society in general. As reported in the annual reports to the HASC (please see footnotes on previous page) the work undertaken to date through the EIA process suggests that any bias in proportionality reflected on the NDNAD is likely to result from over representation in the Criminal Justice System as a whole and is not the result of inherent bias in the NDNAD processes. However, we are not complacent and we have identified a number of activities that have been progressed over the past year to address potential adverse impact that exists.

Proportion of young black men on the NDNAD

- 6.5 During 2010 the NPIA undertook further analysis to produce a more informed and accurate estimate of the percentage of young black men (15-34 years of age) in the population who are on the NDNAD. This analysis builds on previous estimates that have been cited in the media and Hansard and it suggests that, although it is not possible to provide a precise figure, the true proportion of young black men on the NDNAD is likely to be lower than the estimates calculated previously. Using Office for National Statistics population estimates for 2007 as a base for the young black male population, between 45 % and 61 % of this group were estimated to be on the NDNAD as at 13 December 2007.

A comparison of self-defined ethnicity and police assigned ethnic appearance for arrests in 2007/8²⁰ provides some indicative evidence that the actual proportion of young black men on the database is likely to fall at the lower end of this range (around 45-48 %). The number of young white males on the NDNAD is estimated to be 25 %. A full analysis is shown at Appendix D.

- 6.6 As explained in paragraph 6.1 above, the NDNAD is populated mainly with subject profiles taken from arrested persons who have a DNA sample taken in custody. The arrest figures given in Table 9 show a higher proportion of arrests of black people (9.9 %) than the corresponding proportion of black people in the general population (2.6 %), indicating that black people are over-represented at the arrest stage of the criminal justice process. It is therefore not unexpected that there should be differences in the proportion of black and other ethnic groups on the NDNAD.

²⁰ In 2007-08, the arrest data was published on both police-assigned ethnic appearance and self-defined ethnicity. Although it is more desirable to use self-defined ethnicity as a measure, the data on ethnic appearance was more complete.

On 11 August 2010 a 71 year old woman with dementia was reported missing from her care home. She was found in High Road, Willesden bruised with items of clothing missing. She stated that a man had come into her room and ripped her clothing. Police officers searched the area for the victim's missing clothing. DNA evidence recovered from the victim identified Michael Ramnel Williams. Michael Ramnel Williams admitted meeting the woman and taking her to a property in Angel Road, Willesden. The woman's missing items of clothing were found at the same address. In February 2011 he was charged with rape and sentenced to 11 years' imprisonment.

- 6.7 Looking forward, the Government is introducing a new retention framework for DNA following the European Court of Human Rights (ECtHR) judgment in the case of *S and Marper*²¹. This is contained in the Protection of Freedoms Bill (please see Section 1 above, paragraphs 1.13 and 1.14). Once a new framework is implemented, it will impact on the composition of the NDNAD over time. The profiles of persons who have not been convicted of an offence will be removed from the NDNAD in line with the new retention provisions and this will affect persons from each ethnic appearance group.

Work arising from the NDNAD Equality Impact Assessment

- 6.8 One of the issues identified in the EIA is how to address the social concerns about having a DNA profile on the NDNAD. The Strategy Board has been working towards addressing these through a programme of visits to Independent Advisory Groups across the country. A presentation has been given to these groups that explains what DNA is, how the NDNAD works and what legislation governs the sampling and retention of DNA. The key issues that have been fed back by these groups relate to the lack of communication or misinformation that exists in relation to the NDNAD. Whilst many groups had lively discussions on the ethical arguments in relation to the NDNAD there has been very little that has emerged in relation to adverse impact on minority groups. The sessions have highlighted other areas where the Strategy Board is able to implement action to reduce or remove adverse impact. These have included:
- Gender (including Transgender). There have been concerns raised by community groups that if subject profiles are not retained it could impact on solving cold cases and cases involving sexual violence which predominantly affect women. It should be noted, that whilst this may be the case, the number of persons arrested for sexually motivated offences is relatively small in relation to the number of persons arrested who are not subsequently convicted/have no conviction. The other issue identified is in relation to profiles of transgender people where their gender categorisation may differ from the gender of their actual DNA profile. During 2010-11, the Strategy Board began work, in the first instance, to address these issues on the Police Elimination Database and will be working with the National Trans Police Association to progress this issue.

²¹ The European Court of Human Rights (ECtHR) judgment in the case of *S and Marper* found that the blanket retention of DNA profiles and fingerprints indefinitely on the NDNAD where there had been no conviction represented a breach of Article 8 of the European Convention on Human Rights.

In 2009 Serghei Meriacri and Eduard Claihnet entered the home of an elderly couple in Kettering, armed with a pistol. During the attack the elderly gentleman managed to scratch the face of one of the attackers, Eduard Claihnet. A DNA sample was obtained from beneath the elderly gentleman's fingernails and this sample was a match to Eduard Claihnet.

- Disability (Mental Health). Through work and research on the EIA, concerns have been raised about the number of individuals on the NDNAD who suffer from mental ill health. During 2011/12 the Strategy Board worked with the health service to identify whether there was any disproportionality and what could be done to address it.
- 6.9 The benefits of undertaking this work is that the findings of the EIA very often echo the concerns of the Ethics Group and so there is now a link between the two which enables a stronger representation to be made to the Strategy Board when issues are identified. The Strategy Board has also found that the presentations to community groups are very well received and often provoke discussions that positively inform the EIA; there is also a strong interest to continue this work. In conclusion, the actions from the EIA are progressing well and as new issues or solutions are identified this programme of work will continue to support the Strategy Board to ensure that equality is given due regard throughout the operation of the NDNAD.

In January 2010 Leighton Morgan was convicted of the attempted rape of a woman at her home, in Barry, South Wales, in 1999. Leighton Morgan was caught after a routine DNA sample was taken from him after he had been arrested for an unconnected offence.

Section 7 - Data Security, Integrity and Development

7.1 The public have a right to expect the highest possible standards in the taking of DNA samples by the police, the analysis by forensic laboratories to produce DNA profiles and the security and integrity of all data on the NDNAD. The day-to-day management of the NDNAD is undertaken by the NPIA NDNAD Delivery Unit (NDU), who report to the Strategy Board on the accreditation of Forensic Service Providers (FSPs) and the operation, security and integrity of the NDNAD. As of 31 March 2010, 34 NPIA vetted staff had direct access to the NDNAD. On 31 March 2011, 40 vetted NPIA staff had access.

NDNAD Transition project

7.2 In 2007 the then Home Secretary approved a recommendation to end the NDNAD operations and maintenance agreement with the Forensic Science Service (FSS) and to transfer the management and the assets of the NDNAD into the NPIA to allow the police service to play a greater role in the management and development of the NDNAD. A project was commissioned by ACPO under the Forensics21 programme and, under the leadership of then Deputy Chief Constable David Shaw as Senior Responsible Officer, was implemented to transfer the NDNAD from the FSS into the NPIA. The project was completed and the NDNAD including the operations, services and dedicated staff were successfully transferred into the NPIA on 1 December 2009.

7.3 The Office of Government Commerce (OGC) Gateway 5 'Operations and benefits realisation' review of the NDNAD Transition project took place in June 2010. The review confirmed that the desired benefits of the NDNAD Transition project have been achieved and that the business changes are operating smoothly. The project received an Amber/Green rating for overall delivery. The project delivered the following benefits:

- **Benefit 1** – Improved database security
The transition of the NDNAD from FSS to NPIA control has enabled the mandated reclassification of the NDNAD from a Restricted to a Confidential system.
- **Benefit 2** – Improved database resilience
The move of the NDNAD from the FSS to the NPIA through the Transition project has greatly enhanced Disaster Recovery and also business continuity.

Andrew Thompson pleaded guilty to two counts of rape and was sentenced to 11 years' imprisonment on 5 November 2009. Andrew Thompson had attacked his victims in two south London blocks of flats in 1989. Forensic samples from both of the victims linked the attacks, however no suspect was identified. A match with Andrew Thompson was obtained after he was cautioned for a minor drugs offence in 2001.

- **Benefit 3** – Competitive service

The migration of the NDNAD system and service provision from the FSS into the NPJA has created a stable market for other Forensic Suppliers to compete for the provision of new and innovative NDNAD products and services and stimulate market development.

Service delivery

7.4 The NDNAD Service Delivery Team moved into the NPJA in November 2009 as part of the NDNAD Transition project. The team work within the governance rules of the NDNAD and to the ACPO Statement of Requirements for the NDNAD. They are responsible for, amongst other things, loading profiles to the NDNAD and issuing any resulting matches. Throughout the period of transition when IT systems were transferred the work of this team ensured that minimal disruption was seen by the FSPs and police forces that use the service. The performance of the Service Delivery team is assessed against 15 Key Performance Indicators, which ensure the work received from the FSPs and police forces is processed in a timely, efficient manner.

Privacy Impact Assessment

7.5 The move of the NDNAD from the FSS to the full ownership of the NPJA along with a refreshing of the security and operating procedures surrounding the NDNAD provided a stable environment in which full scale review of the Privacy Impact Assessment (PIA) of the NDNAD could be conducted. The risks identified within this PIA are reported to the Strategy Board and the Board will continue to assess and mitigate the identified risks through their work programme. The process is being managed to ensure that all relevant legislation and Information Commissioner's Office best practice, based on the eight principles of the Data Protection Act, is followed and that the necessary evidence to show this for public scrutiny is understood and recorded.

Accreditation of new Forensic Service Providers (FSPs)

7.6 All prospective new FSPs wishing to supply DNA profiles to the NDNAD must demonstrate to the NDU that they can provide reliable profiles that are compatible with the scientific and security standards defined by the NDNAD Delivery Unit. In order to do this, they are first required to satisfy the United Kingdom Accreditation Service (UKAS) that they meet the requirements of the international quality standard for testing laboratories, ISO 17025 and

In November 1985 Simon Murcott raped a woman in East Wood, South Yorkshire. Simon Murcott escaped detection for almost 25 years until South Yorkshire's cold case team reopened the case. DNA found at the crime scene was run through the National DNA Database and a match found to Simon Murcott who was on the database because he had been convicted of other violent offences.

the additional requirements of the NDU as set out in the UKAS document LAB 32. Prospective FSPs also have to satisfactorily complete one or more proficiency tests provided by the NDNAD Assurance Service (NAS). This team assesses the FSP's performance in the proficiency tests and, where appropriate, recommends to the Strategy Board their acceptance as an accredited FSP. Once accredited, FSPs are also required to participate in the on-going quarterly declared and undeclared proficiency testing programme provided by the NAS team. FSPs are also required to duplicate a proportion of their analyses to demonstrate process control and to report any errors to the NDU. Any existing FSP who wishes to change the scope of their accreditation or make significant changes to their accredited processes also has to satisfy the NDU that the changes proposed have been properly validated and will produce reliable profiles compatible with those held on the NDNAD.

- 7.7 The quality standards that apply to UK forensic science are set by the Forensic Science Regulator who has adopted accreditation against ISO 17025 (the standard for testing and calibration laboratories) as the basis for a quality standards framework for laboratory functions in forensic science. His role is limited to standards in England and Wales, however, he has reached agreements with the Scottish and Northern Irish authorities to collaborate such that his standards will have UK-wide application.
- 7.8 The Regulator works closely with the NDU and the NAS with scheduled quarterly meetings to share information on quality issues and FSP performance. He has also worked with the NDU to agree the NDU quality management systems that apply to the day-to-day operation of the NDNAD and is in the process of agreeing the NDU quality manual which incorporates certification against the ISO 9001 Quality Management Standard and the Tick IT scheme and compliance with the government information management requirements.
- 7.9 The Regulator's quality standard framework is published as Codes of Practice and Conduct which are currently undergoing testing, with the final version expected in the summer of 2011. Integral to the framework is the requirement for laboratory activities to be accredited to the ISO 17025 standard. The NDU already require the forensic service providers undertaking DNA laboratory processes, including searching and sampling as well as the analysis to be accredited. As other laboratories undertake all or parts of the laboratory processes with a view to DNA analysis and profiling they must adhere to the same robust standards designed to protect the integrity of the whole DNA process.

In April 2010 Eugene Douglas was found guilty of robbing a Guildford jewellers. In March 2009 four people wearing balaclavas attacked the store fleeing with £84,000 worth of jewellery and watches. Eugene Douglas escaped but was caught following forensic tests on a pile of clothes and a balaclava found discarded in a garden in Dorking. These items provided police with a complete match to Eugene Douglas after he was caught carrying out another robbery two months later.

7.10 In 2009-10, there was one new application from a new prospective FSP, who later chose not to pursue the application to become a DNA laboratory that could load profiles to the NDNAD. In 2010-11 there was another new application from a prospective FSP, which to date is still ongoing. In 2009-10 there were 15 applications for changes to scope to existing laboratories authorised to load to the NDNAD and in 2010-11 there were 21 such applications. All of these changes of scope were authorised by the Strategy Board.

DNA samples taken for a non-recordable offence

7.11 A regular report is produced from the NDNAD and PNC systems to highlight subject profile records retained on the NDNAD for which the offence(s) for the arrest event is detailed on PNC as being a non-recordable offence (there is no provision under PACE for the taking of a DNA sample where the arrest is for solely a non-recordable offence(s)). For the records highlighted in the report, the immediate action by the NDU is to amend the status of the records on the NDNAD to 'non-searchable', meaning that the records will be suspended from the matching process and will not be able to generate a match from a standard or speculative NDNAD search; the NDU Data Reconciliation Team then forwards details of the affected records to the owning forces with the request that the force either request deletion from the NDNAD, or amends the PNC to include the offence code for the recordable offence. During 2009-10, 1,630 subject profiles were deleted from the NDNAD due to the DNA samples being taken for solely a non-recordable offence. In 2010-11, 474 subject profiles were deleted due to the DNA being taken for a non-recordable offence.

Missing Persons DNA Database

7.12 During 2009-10, the Strategy Board agreed to the development of the Missing Persons DNA Database (MPDD) to support the Missing Persons Bureau that is operated by the NPIA. The NDU operate and maintain a database of DNA profiles from personal items belonging to missing persons based on risk assessment by police forces and DNA profiles from unidentified bodies and body parts. The profiles are held on a separate but compatible database from the NDNAD. The database of these profiles is used solely for checking for linkages between missing persons and unidentified bodies, when requested to do so by the police. The protocols and procedures for the use of the MPDD are based on ACPO guidelines. This service became fully operational in May 2010. Table 10 below shows the number of DNA profiles retained on the MPDD. Up to 31 March 2011, there were three UK matches and two international matches to the MPDD.

In May 2010 Geoffrey Davey admitted committing a rape in 1987. This rape had remained unsolved for 23 years. Geoffrey Davey was arrested in March 2010 after a cold case review by City of London Police. Forensic scientists examined the first victim's clothes and found DNA that matched to a profile on the National DNA Database belonging to Geoffrey Davey.

Table 10: DNA profiles on the Missing Persons DNA Database at 31 March 2011

Sample type loaded	Number retained	Number deleted	Total received for loading to MPDD
Missing person's reference	89	7	96
Crime scene stains	8	0	8
Unidentified bodies	33	2	35
Kinship samples	14	0	14
Kinship inferred profiles	31	0	31

UK matches on the MPDD

Case 1:

Subject A was reported missing on 9 April 2010, having last been seen by family members on the 29 March 2010. His DNA profile was obtained from a toothbrush. This profile was loaded to the MPDD on 22 June 2010. A decomposed body was found approximately four miles out to sea off the Whitstable Kent coast (Middle Sands) on 27 May 2010. This profile was loaded on the MPDD on 14 July 2010 and matched the surrogate profile of Subject A.

Case 2:

Subject B was reported missing on 24 February 2010. Her profile was obtained from a toothbrush and was loaded to the legacy database. On 30 June 2010, police received a report that a body had been seen in the River Wear. An area search resulted in a body being located in the river by a jetty at Coxgreen and was loaded to the MPDD on 3 August 2010, matching the profile of Subject B.

Case 3:

On 10 December 2010, the badly decomposed body of a white female was located on rocks, close to Wildersmouth Beach, Ilfracombe, North Devon. A post-mortem examination was conducted and muscle tissue was recovered for DNA profiling. The profile obtained was loaded to the MPDD on 23 December 2010. The last sighting of Subject C was on 16 November 2010 on the High Street, Weston Super Mare, North Somerset. She was reported as missing to the police on 18 November 2010. A toothbrush, believed to have belonged to her, was taken from the top of a chest of drawers in a bedroom at her home address. The DNA profile obtained was loaded to the MPDD on 30 December 2010 and matched the profile of the above decomposed body.

In 1980, Ronald Cheshire kidnapped and raped a 15 year old girl in Maidenhead. Seven years later in 1987 Ronald Cheshire murdered hitchhiker Rachael Partridge in Bledlow Ridge. After being convicted of murder Ronald Cheshire's DNA was retained on the National DNA Database. The 1980 rape was reopened by Thames Valley Police and samples found on the victim at the time of the attack were matched to Ronald Cheshire. In July 2010 Ronald Cheshire pleaded guilty to the 1980 rape.

International matches on the MPDD

Case 1:

On 26 June 2001, an unidentified male body was found in the North Sea near the Dutch Isle of Texel. A DNA profile was obtained from the deceased. Intelligence suggested that this body could be that of Subject D. On the 22 February 2011, the DNA profile of Subject D's son was submitted to the MPDD for comparison. A potential match was obtained. The forensic service provider stated: 'A statistical evaluation of these results shows that they are approximately 2,000 times more likely if the deceased is the biological father of Subject D's son rather than another person unrelated to him'.

Case 2:

A request was received to search a DNA profile that was obtained from an arm found on Dollymount Beach, Dublin, on 8 February 2011. This profile was speculatively searched on the NDNAD and MPDD and a match was obtained on the latter to a Subject E.

Vulnerable Persons DNA Database

7.13 The Vulnerable Persons DNA Database (VPDD) was launched on 1 March 2011 as a response to the NDNAD Ethics Group's recommendations on handling volunteer profiles on the NDNAD. The VPDD has been created to store DNA profiles provided by vulnerable individuals who are at some risk of harm, where consent has been given to add their profile to the database. These records are not routinely searched against the PACE and crime scene DNA profiles held on the NDNAD. If a police force believes that the individual has come to harm, the Strategy Board can authorise a VP profile to be made searchable against the NDNAD. To add additional precautions to the process, the profiles held on the VPDD are subject to a review after two years of loading to the VPDD, to ascertain if the individual is still considered at risk of harm. Vulnerable persons can ask for their profile to be removed from this database at any time. Examples of individuals who may be considered to be vulnerable include Honour Based Violence (HBV) victims, sex workers, those at risk of sexual exploitation, the mentally ill or where a law enforcement agency (LEA) considers the individual at risk. These examples are not exhaustive. The VPDD has the same level of security and control as the NDNAD. 129 VP samples had been loaded to the VPDD by 31 March 2011.

Jacob Trussler and an accomplice broke into the home of a 77 year old woman in March 2010. The victim was asleep in a downstairs bedroom at the time of the attack. Jacob Trussler stole a number of items including cash and the victim's car. DNA samples were collected at the scene of crime which matched samples on the National DNA Database belonging to Jacob Trussler, taken for offences of a similar nature. In July 2010 Jacob Trussler was found guilty and sentenced to 40 months imprisonment.

Volunteer samples

7.14 As part of new legislative proposals in 2009, the then Government reviewed the provisions in England and Wales in respect of volunteer samples. The review formed part of the general consideration of a new retention framework for DNA subject profiles. The review took account of recommendations made by the NDNAD Ethics Group about volunteer samples and profiles. Please also see paragraphs 1.8 and 2.8-2.12 above.

Future NDNAD development

7.15 During 2009-10, the Strategy Board agreed in principle to introduce new DNA profiling analysis methods based on 15 areas of comparison rather than the existing ten areas. At the end of 2009-10, the Chair of the Strategy Board outlined the two major challenges ahead. These were the move to incorporating the five new areas of DNA into the NDNAD and the acquisition of a new 'matching' algorithm for the NDNAD. During 2010-11, the NPIA commenced work to commission this project for developing the next generation NDNAD Service and this work is ongoing.

Leslie Marshall was arrested by Lancashire Police's cold case team in October 2009. In January 1989 a 22 year old woman was approached on Briercliffe Road, Burnley. She was forced into a car and attacked by two men before being left on a country road. DNA profiles were obtained at the time of the attack, the case was reopened in 2008 and these profiles were added to the National DNA Database which matched to a sample provided by Leslie Marshall when he was arrested for an unconnected offence. In July 2010 Leslie Marshall pleaded guilty to the rape. In August 2010 Leslie Marshall was sentenced to six and a half years' imprisonment.

<http://www.bbc.co.uk/news/uk-england-lancashire-10777509>

Section 8 - Research Requests

- 8.1 Research using DNA samples or DNA profiles taken and retained under PACE can only be for the purposes of prevention and detection of crime, the investigation of an offence, the conduct of a prosecution or, since April 2005, for the purposes of identifying a deceased person. The Strategy Board uses this legal basis for considering research requests and the need for a clear operational benefit to the police. DNA samples and DNA profiles that make up the NDNAD cannot be used for any other type of research including medical research. The NDU assesses all proposals to use stored DNA samples or information from the NDNAD for research purposes in respect of the value of the research for the prevention or detection of crime, compliance with the law, any ethical issues and any implications for the integrity and reputation of the NDNAD. All requests are authorised by the Strategy Board having taken advice from the NDNAD Ethics Group. The NDU manage the release (and subsequent recall) of the samples or data, monitor the use to which they have been put and advise the Strategy Board on the outcome of the research.
- 8.2 In 2009-10, the NDU received two requests of which one was authorised on 21 April 2010. The proposed research from an accredited forensic service provider involved the use of 100,000 DNA profiles to carry out the validation and testing of a new software application that interprets DNA fragments. The Strategy Board agreed to the use of this data on the basis that all DNA profile data was stripped of personal data and was therefore anonymised. The other request which was refused was not pursued. There were no research requests received in 2010-11.

Kevin Walters was 19 years old when he raped a woman in her home in March 1990. The crime remained unsolved for almost two decades until it was subject to a cold case review in 2009. Scientific advances enabled police to identify Kevin Walters as the attacker and he was arrested in April 2010. He subsequently pleaded guilty to rape and was sentenced to 13 years' imprisonment in July 2010.

Section 9 - Communication

- 9.1 The Strategy Board agreed in 2009-10 to provide more transparency to the general public. This involved presenting to specialist interest groups as referred to in Section 6.
- 9.2 One of the key developments within this area was the launch of a NDNAD website in October 2009.
- 9.3 The website can be found using the link <http://www.npia.police.uk/dna>
The sections on the website include:
- minutes from previous Strategy Board meetings
 - previous NDNAD Annual Reports
 - basic facts and Frequently Asked Questions
 - how to check if your DNA record is held on NDNAD
 - how to request the removal of your record and destruction of the DNA sample
 - case studies and statistics that are represented in this Report
 - statistics both nationally and by individual police force area

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- National DNA Database
- NPIA and the DNA Database
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- Case Studies
- Statistics

The National DNA Database

Between 01 April 11 and 30 September 11 the National DNA Database produced 62 matches to murder, 285 to rapes and 15,685 to other crime scenes

The National DNA Database continues to provide police with the most effective tool for the prevention and detection of crime since the development of fingerprint analysis over 100 years ago. Since 1998, more than 300,000 crimes have been detected with the aid of the Database, reassuring the public that offenders are more likely to be brought to justice.

Governance and oversight of the National DNA Database is provided by the National DNA Database Strategy Board. It operates under the tripartite arrangements for the governance of policing, comprising members from the Association of Chief Police Officers, the Home Office/ NPIA, the Association of Police Authorities. Representatives from the Human Genetics Commission and the Information Commissioners Office also sit on the Strategy Board.

The NPIA is responsible for overseeing the National DNA Database service, ensuring that it is operated in line with agreed standards and that the quality and integrity of the service is protected.

If you would like to be informed of updates to the National DNA Database website please email dna@npia.pnn.police.uk

Related Words

dna, dna database, evidence dna samples, dna matches, evidence, national dna, ndnad, dna profile, dna swab, dna fingerprint, genetic fingerprint, solving crime, S & Marper, forensics, SCH+, deoxyribonucleic acid, exceptional case procedure.

Press team

Customers

NPIA and the DNA Database
Find out more about NPIA's role. Read Annual Report and Strategy Board minutes.

Basic Facts - Frequently Asked Questions
This section provides an introduction to the DNA database for the general reader.

DNA Database and Me

Section 10 - Financial Data

10.1 The costs attributed to the operation and support of the NDNAD for 2009-10 and 2010-11 are shown in Table 11. This table also records the income which the NDNAD receives which has not been present in previous annual reports.

Table 11: Operating costs of the NDNAD

	2008-09	2009-10	2010-11
Income (£)	£1,345,483	£1,306,901	£1,232,706
Operating costs (£)	£3,330,500	£2,095,665	£1,864,107
Hosting of the NDNAD system (£)	Incorporated into the operating costs as this was provided through a contract from FSS	£686,265	£1,329,172
Development costs, Transition project and NDNAD enhancements (£) ²²	£960,000	£3,594,000	£385,095
Total (£)	£2,945,017	£5,069,029	£2,345,668

10.2 Development costs relate to enhancements to the NDNAD system, for example enabling the database to allow PACE samples with a unique identifier of a prefix '3' to be loaded successfully to the NDNAD. Previously the unique identifier used a '9' series identifier. The numbers of '9' series was diminishing and therefore there was an agreement to allow the sampling kits to use the identifier with a 3 series prefix.

²² It can be seen that there was a large increase in development costs from 2008 through to 2010. 2008-09 saw costs increase due to the preparation for the transition of the NDNAD from the FSS to the NPIA. Associated costs included funding an FSS Development Team, via a Commercial Contract for NDNAD enhancements. 2009-10 saw the majority of costs associated with actual transition of the database. Costs significantly reduced for 2010-11 as funding was now for an internal NPIA Development Team and therefore only salary based costs, following completion of the Transition Project.

In March 1991 Mike Dixon dragged an 18 year old female at knife point onto wasteland in Bransholme and raped her. He became known as the "Honiton Road Rapist". In June 2010 Mike Dixon was stopped and arrested for driving without insurance, at which point a DNA sample was taken by Essex police and added to the National DNA Database. Humberside police were conducting a cold case review of the 1991 rape and ran the DNA samples found at the crime scene through the National DNA Database producing a match to Mike Dixon. In August 2010 Mike Dixon pleaded guilty to rape.

Appendix A – Subject Profile Statistics

Analysis of subject profiles retained

Figures provided are for all UK forces and represent profiles on the NDNAD, not individuals. There may thus be some duplication, but this should not make material difference to the % breakdowns.

Location of police force/law enforcement agency providing subject sample records

The NDNAD does not hold any address information concerning those sampled. The only geographical information held is the police force that submitted the sample. This breakdown is therefore based on the geographical location of the police force that submitted the sample.

The breakdown by location of the police force/law enforcement agency providing the subject sample record at the end of March 2010 and the end of March 2011 is set out below in Table 12.

Table 12: Subject profiles held on the NDNAD by location of the law enforcement agency submitting the record as at 31 March 2010 & 31 March 2011

Numbers and percentages		Subject profiles held on NDNAD				
	Total number of subject profiles held at 31 March	England	Wales	Scotland	Northern Ireland	Other law enforcement agencies
Year	Numbers	Percentages				
2009-10	6,135,990	87.4	5.3	4.5	1.3	1.5
2010-11	6,595,295	87.4	5.3	4.5	1.3	1.5

By gender

The breakdown of subject profiles held on the NDNAD by gender at the end of March 2010 and the end of March 2011 is set out below in Table 13.

Table 13: Subject profiles held on the NDNAD as 31 March 2010 and 31 March 2011 by gender

Numbers and percentages			Subject profiles retained	
	Total number of subject profiles held at 31 March	Total number of subject profiles held where gender known [=100 %]	Males	Females
Year		Numbers	Percentages	
2009-10	6,135,990	6,093,387	79.1	20.9
2010-11	6,595,295	6,552,148	78.9	21.1

By age

When considering the age of people held on the NDNAD, the date of birth (DOB) recorded for a subject on the NDNAD is used. The DOB recorded on the NDNAD for a subject is provided by the individual to the police officer at the time of arrest. On occasions, this may not be their true DOB and for a very small percentage of records the DOB is unknown.

Age analysis of a profile held on the NDNAD can be carried out either based on the age that the person was when their profile was loaded to the NDNAD or their current age on a given date. Both types of age breakdown of the NDNAD are provided in Tables 14 & 15 below.

Table 14: Subject profiles held on the NDNAD by age on load at 31 March 2010 & 31 March 2011

Numbers and percentages			Subject profiles held on NDNAD (age at time of load)									
Year	Total number of subject profiles held at 31 March	Total number of subject profiles held where age known [=100%]	Under 10	10-15	16-17	18-20	21-24	25-34	35-44	45-54	55-64	65 & over
			Percentages									
2009-10	6,135,990	6,000,623	0.0	11.7	9.0	13.3	13.1	23.5	17.0	8.2	3.2	1.1
2010-11	6,595,295	6,428,820	0.0	11.5	8.9	13.2	13.0	23.5	17.1	8.4	3.3	1.1

As at 31 March 2011 there were 27 DNA profiles held on the National DNA Database (NDNAD) that were taken from subjects who were under 10 years of age at the time the profile was loaded to the NDNAD. All of these 27 samples were taken in Scotland where the age of criminal responsibility is 8 years of age.

Table 15: Subject profiles held on the NDNAD by current age at 31 March 2010 and 31 March 2011

Numbers and percentages			Subject profiles held on NDNAD (current age)									
Year	Total number of subject profiles held at 31 March	Total number of subject profiles held where age known [=100%]	Under 10	10-15	16-17	18-20	21-24	25-34	35-44	45-54	55-64	65 & over
			Percentages									
2009-10	6,135,990	6,135,187	0.0	1.6	2.9	7.7	13.5	31.4	21.9	13.5	5.4	2.3
2010-11	6,595,295	6,595,063	0.0	1.3	2.5	7.1	13.0	31.7	22.1	14.1	5.7	2.5

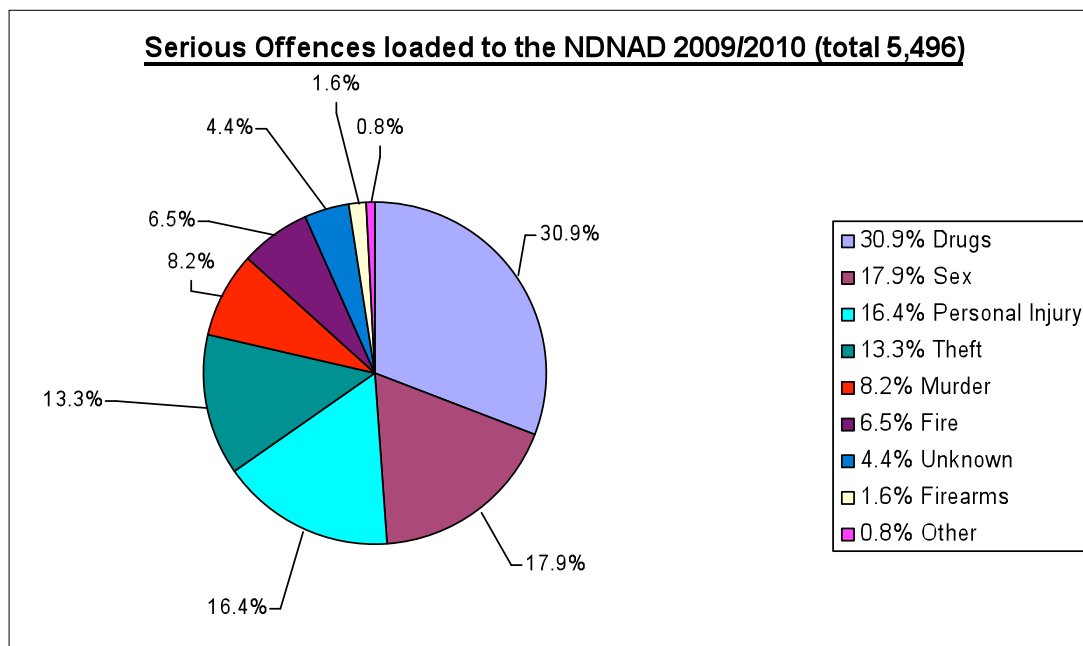
Appendix B – Crime Scene Profile Statistics

Crime scene profiles loaded to the NDNAD by offence type

The NDNAD uses approximately 40 offence codes for describing the offences or crimes from which the crime scene samples were collected. The offence codes are assigned by the police force which collected the crime scene sample before it is sent to a forensic laboratory for analysis to obtain a DNA crime scene profile.

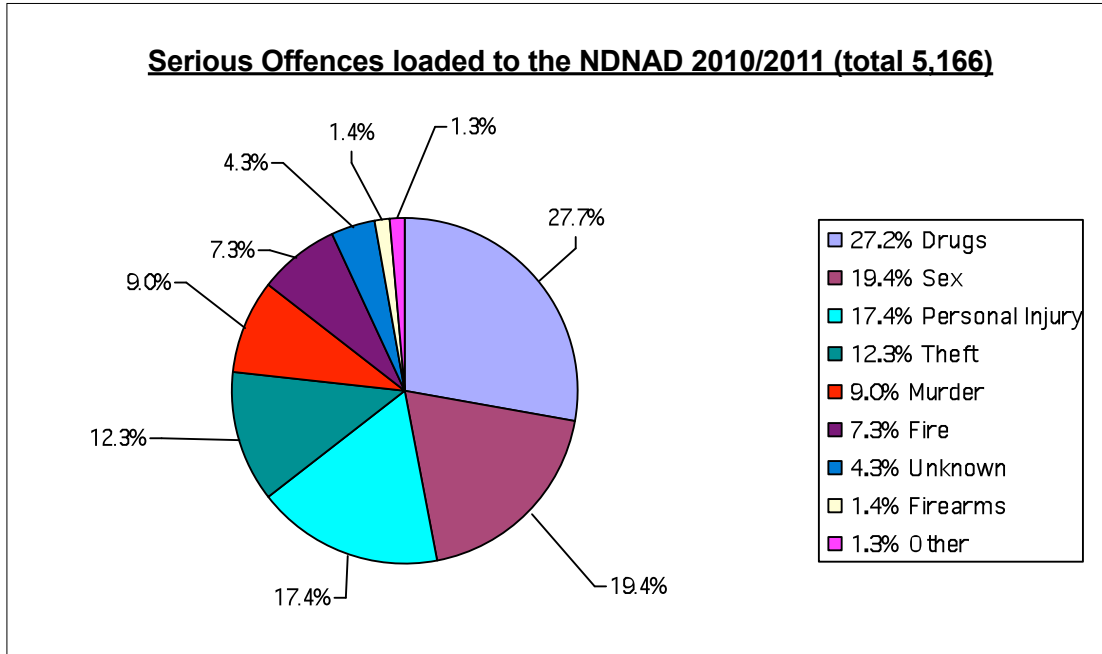
Figures 6A/B and 7A/B below show the breakdown by offence types of the crime scene profiles loaded in 2009-10 and 2010-11. The total number of serious and volume crime scenes loaded each year is less than the total number of crime scene profiles loaded for that year. This is because some crime scene profiles are loaded with 'unknown' offence classes.

Figure 6A: Number of crime scene profiles for serious offences loaded to the NDNAD in 2009-10 (Total 5,496)



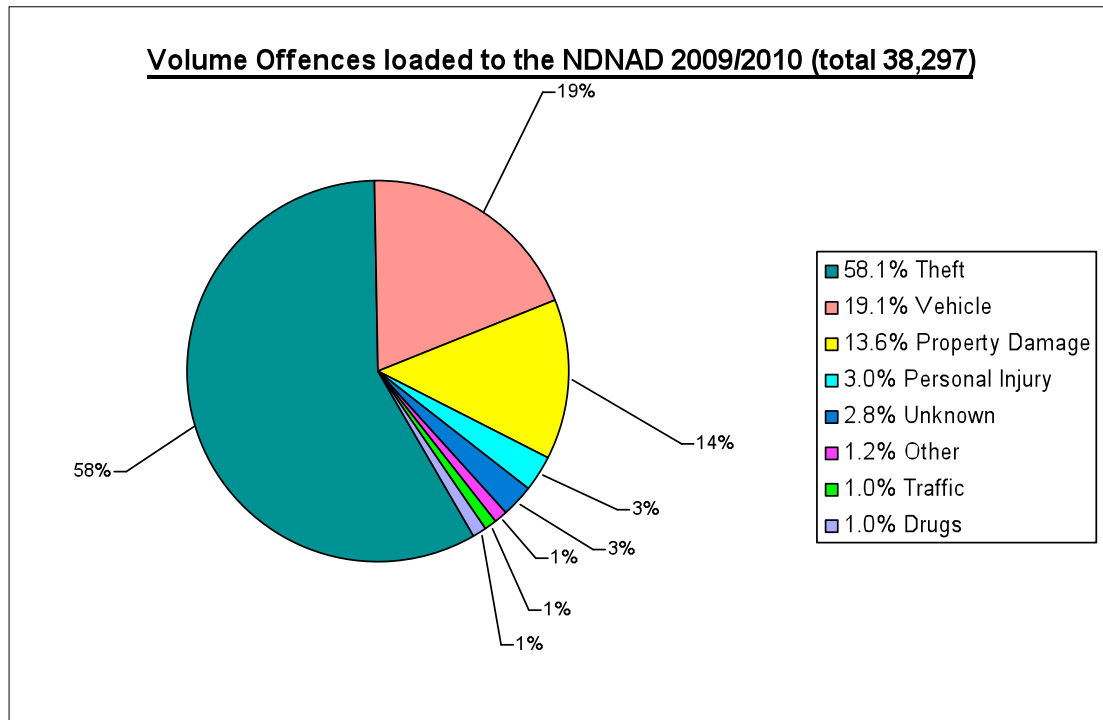
Other - Fraud, Property Damage, Terrorism, Traffic

Figure 6B: Number of crime scene profiles for serious offences loaded to the NDNAD in 2010-11 (Total 5,166)



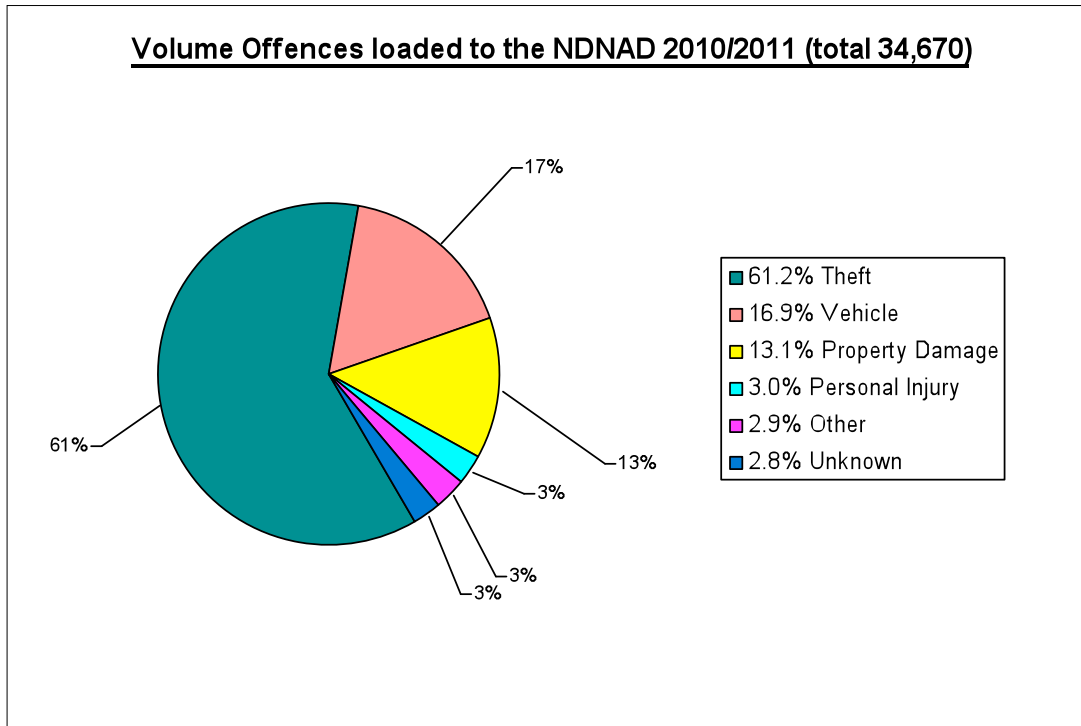
Other - Fraud, Property Damage, Terrorism, Traffic

Figure 7A: Number of crime scene profiles for volume offences loaded to the NDNAD in 2009-10 (Total 38,297)



Other - Alcohol, Firearms, Fraud, Public Order

Figure 7B: Number of crime scene profiles for volume offences loaded to the NDNAD in 2010-11 (Total 34,670)



Other - Alcohol, Firearms, Drugs, Fraud, Public Order, Traffic

Appendix C – NDNAD Strategy Board responses to HGC and Ethics Group recommendations.

HGC Report ‘Nothing to Hide, Nothing to Fear?’ published November 2009

Recommendation	Response
<p>1 We recommend that the National DNA Database should be established in law through new primary legislation. The permitted uses of the records constituting the National DNA Database should be simply, unambiguously and explicitly defined in legislation and any use of the database that falls outside those permitted uses should be made an offence subject to strict penalties. Any provision made for amending those uses through delegated legislation should be limited in scope in the primary legislation.</p>	<p>In February 2011, the Government introduced the Protection of Freedoms Bill¹, section 24 of which lays down the governance of the National DNA Database. The permitted uses of the records are laid down in section 64 of PACE.</p>
<p>2 We recommend that the legislation that establishes the National DNA Database should be accompanied by a full Privacy Impact Assessment with advice from the Information Commissioner, so that these impacts can be considered when the legislation is debated openly in Parliament.</p>	<p>An Impact Assessment and Equality Impact Assessment have been published on the section of the parliament.uk website dealing with the Protection of Freedoms Bill.</p>
<p>3 We recommend that new guidance is given on when it is appropriate to take a DNA sample following arrest and to record a resulting DNA profile on the National DNA Database; the guidance should have regard to the circumstances of the arrest (including the nature of the offence of which the arrestee is suspected).</p>	<p>The policy remains that DNA should be taken following all arrests for a recordable offence. This is not only to assist with the investigation of that particular offence, but also to check whether the person arrested is linked to other currently unsolved crimes. However, under the Protection of Freedoms Bill, profiles will be deleted if the person is not subject to any further action following the arrest or is found not guilty (deletion will be after three years if the person is arrested and charged with a qualifying – i.e. more serious offence).</p>

¹ Since February 2011, a number of amendments have been tabled to the Protection of Freedoms Bill during its passage through Parliament. These amendments were made after the period of this Biennial NDNAD Annual Report.

Recommendation	Response
<p>4 We recommend that an independent panel reviews, at regular intervals, evidence relating to arrests and the taking of DNA samples, in order to ensure that (1) the guidance is sufficiently robust and (2) the guidance is being appropriately followed.</p>	<p>As the policy remains that DNA should be taken following all arrests for a recordable offence, we do not agree with this recommendation.</p>
<p>5 We recommend that the legislation that establishes the National DNA Database should be accompanied by a full equality impact assessment so that these impacts can be considered when the legislation is debated openly in Parliament.</p>	<p>An Equality Impact Assessment will be published alongside the Bill.</p>
<p>6 We recommend that all serving police officers and those whose professional duties require or permit them to come into contact with crime scenes or crime-scene samples, should have their DNA profiles recorded on the Police Elimination Database and retained; this requirement should be a condition of employment.</p>	<p>It has been a requirement for newly appointed police officers to provide a DNA sample since 2002 and this requirement was later extended to police community support officers (PCSOs). This power is currently laid down in The Police Regulations 2003.</p> <p>There are no plans to require police officers recruited before that date to provide DNA samples.</p>
<p>7 We recommend that the statutory framework for the National DNA Database should include provisions relating to consent which, as a minimum, should make it unlawful for records derived from volunteer samples to be retained in the absence of a validly obtained and subsisting consent.</p>	<p>The Protection of Freedoms Bill section 11 adds a new section 63O (3) to PACE under which volunteers can withdraw their consent at any time.</p>
<p>8 We recommend that the National DNA Database Strategy Board should define and consult widely on an appropriate definition and acceptable measures of forensic utility. These should support the evaluation of the role played by the National DNA Database in the identification of offenders, while making it feasible to collect prospectively the evidence necessary for the evaluation in an operational context.</p>	<p>Data on the utility of the DNA database is currently produced from the NDNAD's own management information systems and from forces. While it may be desirable to extend the data collected, this must be placed in the context of government policy to reduce the demands on forces and tighter budgets which will focus work on police operational requirements.</p>

Recommendation	Response
<p>9 We support the efforts that are currently being made by the National DNA Database Strategy Board to identify and provide meaningful information that can be placed into the public domain and we recommend that data supporting evaluation of the forensic utility of the National DNA Database should be collected and published by the National DNA Database Strategy Board or the National Policing Improvement Agency National DNA Database Delivery Unit. An evaluation of such data should be conducted by an independent body and placed in the public domain.</p>	<p>See above.</p>
<p>10 We recommend that there should be a move towards the destruction of subject samples when profiles have been loaded to the National DNA Database; and that the UK should continue to support efforts to standardise sets of markers with other countries in Europe and elsewhere with whom the sharing of data for criminal intelligence purposes may be desirable.</p>	<p>The Protection of Freedoms Bill section 14 adds a new section 63R to PACE under which DNA samples must be destroyed within six months from the date on which the sample was taken.</p> <p>The new European Standard Set (ESS) of 12 Loci was agreed at EU level for exchange of DNA profiles between the 27 EU member states in 2009. Previously, the ESS contained seven loci</p>
<p>11 We recommend that robust processes should be developed to control international data sharing and that these should be subject to appropriate monitoring.</p>	<p>Robust processes have been approved by the Strategy Board.</p>
<p>12 We recommend that the Government supports continuing national debate, informed by the publication of relevant evidence that addresses explicitly the extent of and justification for the interference with personal privacy inherent in retaining personal DNA profiles. The debate should address the basis on which a distinction may be made among unconvicted individuals so that the collection and retention of DNA profiles of some of them, but not all, would be acceptable.</p>	<p>Evidence on matches and detections is published in NDNAD Annual Reports.</p> <p>The Protection of Freedoms Bill introduces a regime under which there will be much less retention of DNA profiles from unconvicted individuals.</p>

Recommendation	Response
13 We recommend the establishment of a Royal Commission on the National DNA Database to give focus to and to learn from, the public debate and to ensure that its outcomes will be taken forward.	This is not worthwhile given the cost and the fact that the government has introduced the Protection of Freedoms Bill.
14 We recommend that more and more reliable, information about the National DNA Database is made widely available, in particular evidence of its usefulness in investigating crime and leading to the conviction of offenders.	The NPIA website pages on the NDNAD (http://www.npia.police.uk/en/8934.htm) have been expanded so that they now include case studies where DNA evidence has contributed to the conviction of offenders, Annual Reports including reports on matches and detections achieved using DNA, NDNAD statistics and Frequently Asked Questions, Strategy Board minutes and Equality Impact Assessments.
15 We recommend that an independent body be established to oversee the management and use of the National DNA Database and that this body should conduct its business in an open and transparent way to the fullest extent that the operational sensitivities of policing will allow.	The Protection of Freedoms Bill puts the Strategy Board on a statutory basis and requires it to publish an Annual Report. The Board operates openly, publishing minutes of its meetings on the NPIA website. The Bill also creates the post of Biometrics Commissioner who is given the function of keeping under review the retention and use of biometric material. The NDNAD Ethics Group (http://www.homeoffice.gov.uk/agencies-public-bodies/fsr/ndnad-ethics-group) provides independent advice on ethical issues to Ministers and the Strategy Board. It operates openly, publishing its Annual Reports and minutes at the web address shown above.
16 We recommend that clear and explicit rules for the removal of samples/profiles from the database be drawn up so that consideration and, if necessary, argument can be addressed to whether a given case falls under that rule. Consistently with our other recommendations concerning the establishment of the database in law, we recommend that these rules should be stated in primary legislation.	Rules for the retention or deletion of profiles are laid out in the Protection of Freedoms Bill.
17 We recommend that an independent body be empowered to consider appeals against rejection by a Chief Officer of an application to remove a DNA profile from the National DNA Database.	The issue of appeals is now less significant because section 24 of the Protection of Freedoms Bill provides that the Strategy Board will issue guidance about the destruction of samples/ profiles which forces must obey and because the Bill also provides for less retention of profiles from those not convicted.

Recommendation	Response
<p>18 We recommend that the National DNA Database should have in-built reporting systems properly designed with the assistance of those with appropriate academic expertise to provide information necessary to demonstrate forensic utility and for equality and privacy impact assessments.</p>	<p>NPIA funding is currently being substantially reduced prior to the phasing out of the agency during 2012. No decision has been made on who will operate the NDNAD after that date, but it is very unlikely in the current financial climate that any extension to NDNAD functionality other than that required to maintain support to police operations will be fundable.</p>
<p>19 We further recommend that an annual review be undertaken, informed by the reporting systems we have recommended, of the forensic utility of the National DNA Database and that the review should draw out strategic and policy proposals for the management and use of the database.</p>	<p>Data on the utility of the DNA database is currently produced from the NDNAD's own management information systems and collected from forces. While it may be desirable to extend the data collected, this must be placed in the context of government policy to reduce data collection demands on forces and tighter budgets. The Strategy Board regularly considers the management of the database in the light of the data available.</p>
<p>20 We recommend that the National DNA Database Ethics Group be placed on a firmer footing: members should be remunerated (as for the majority of other public bodies) and the secretariat strengthened to support its work. Its independence from the Home Office should also be increased, as should its capacity to review and authorise research applications.</p>	<p>The government has shown commitment to the NDNAD Ethics Group by deciding that it should continue in being at a time when many other NDPBs (including NPIA and HGC) are being phased out. In the current financial climate the Home Office is not likely to increase the cost of running the Ethics Group by remunerating its members, increasing the size of its secretariat or funding research that it might commission.</p>

The Ethics Group

Annual Report April 2009

(‘Recommendations’ are as stated in the April 2009 Ethics Group Annual Report; ‘Progress Made’ is the commentary provided in the April 2010 Ethics Group Annual Report on those recommendations; ‘Response’ is the response given in the NDNAD 2009-11 Report)

Recommendations

<p>1 To ensure that the progress made on consent for adult volunteers is followed through to completion.</p>	<p>Progress Made: New sampling kits were rolled out for use for Elimination samples with effect from June 2010. There will be no ability to load these profiles derived from these kits onto the database. At present there will be no volunteer kit. This will be developed in line with the Missing Persons Database proposals. In the interim period if there is a need to load a volunteer profile onto the database the consent of the Chair of the Strategy Board will be required and old kits will be used.</p> <p>The decision that volunteers are no longer loaded to the NDNAD changes the basis upon consent needs to be sought and a new form is to be in place from June 2010.</p>
	<p>Response: The Protection of Freedoms Bill clause 11 adds a new section 630 (3) to PACE under which volunteers can withdraw their consent at any time. Also, it is now the policy of the NDNAD Strategy Board that volunteer elimination profiles can no longer be loaded to the NDNAD.</p>
<p>2 To accept and take forward the EG’s proposals on consent for children and young people.</p>	<p>Progress Made: At present the DNA sampling process does not take account of the Gillick Competency Principles which are prevalent in medicine and which, after thorough consultation, the EG recommended when DNA is taken from children and young people. The EG felt strongly about this issue and produced a paper specifically on this issue. It therefore remains the case that the EG’s recommendations have NOT been taken up to the satisfaction of EG. The key recommendations of EG are not repeated here but are contained within the paper “Volunteer sampling of DNA for policing in children and young people.” November 2008 (available from Home Office secretariat or EG chairman). It is conceded that since the new sampling policy which becomes effective Spring 2010 will seek to take DNA from children on an exceptional basis only, that far fewer children will be sampled than was previously the case. Nonetheless, there will be occasions where children are asked to consent to DNA being taken.</p>

	<p>Response: Under the Protection of Freedoms Bill, for under 18s on first conviction for a first minor offence, the profile will be retained for five years if the sentence is non-custodial or for the length of sentence plus five years for those sentenced to immediate youth custody. For those receiving a second conviction or where a custodial sentence of over five years is imposed for a first offence, the profile will be retained indefinitely. The Ethics Group has since commented that the issue of the use of Gillick competency principles by the police service is much wider than DNA.</p>
<p>3 To accept that the current data on ethnicity stored on the NDNAD is not fit for purpose and to press the CJS to move to a standardised and uniform recording system for ethnicity data (e.g. the 16 + 1).</p>	<p>Progress Made: Recording of ethnicity is no longer part of the sampling process. The Second Home Affairs Select Committee report indicated that three-quarters of young black males will soon be on the DNA database. Ethnicity data for the NDNAD will be downloaded from Police National Computer. The new Police National Database (PND) should be operationally effective from December 2010 and has the ability to obtain self reporting ethnicity data.</p>
	<p>Response: The Police National Database is designed to implement the recommendations of the Bichard enquiry, i.e. to allow forces to access for intelligence purposes custody, intelligence, crime, domestic and child abuse records held by other UK forces. It does not replace the Police National Computer which continues to use a 6+1 officer-reported system for describing ethnicity. Although the CJS is gradually migrating towards use of a 16+1 self-reported ethnicity system, there are no current plans to alter the system used for PNC records.</p> <p>The statement in the Second Home Affairs Select Committee Report that three-quarters of young black men are or will be soon in the NDNAD requires revision, as it compares 16+1 self-reported ethnicity data from the census with more recent 6+1 officer-reported ethnicity data from the NDNAD. Work by NPIA and HO statisticians shows that a more accurate figure is that 48% of black men between 15 and 34 are on the NDNAD compared with 26% of young white males.</p>

<p>4. To urgently improve the level of easily available and assimilated public information on the use of forensic DNA.</p>	<p>Progress Made: A website has been developed by the NPIA. This website is designed to give information to the public and professionals on the database. The EG supports this development however it does not go as far as the EG had asked in recommendations. There is a continued and widely acknowledged need to provide information to individuals who are being sampled at the time they are being sampled. Individuals may be in a state of increased anxiety and should be provided with basic information covering:</p> <ul style="list-style-type: none"> a) What DNA is (and what is it not – many people have a misperception from the media); b) How their sample will be taken; c) What will happen after their sample is taken; d) What their rights are. <p>The EG produced an information template sheet to sit on the back of the consent form. They based this template on an early prototype by NPIA which was believed to not fully meet the needs of the public. There has been acknowledgement as part of the recent procurement exercise for new sampling kits of the importance of providing people with information but there is currently no work underway to produce DNA information sheets.</p>
	<p>Response: Since the recommendation was made, the NPIA website has been developed to provide much more information. Those taken into custody are supplied with a 'Notice of rights and entitlements' (published on the Home Office website).</p>
<p>5 To monitor the research being undertaken on longitudinal crime careers and to take note of these results in balancing the individual against the public interest.</p>	<p>Progress Made: Research material was published as part of the consultation process on the response to S and Marper. No systematic programme of research evaluating the impact and proportionality of the database is in place.</p>
	<p>Response: This is a matter for the Home Office rather than the Strategy Board.</p>
<p>6 To work constructively with the Scottish CJS system in developing the rationale for retention policies</p>	<p>Progress Made: Neither retention policy has a substantial evidential base justifying the policy. The new Coalition Government has signalled its intention to follow the Scottish retention model.</p>

		Response: This is a matter for the Home Office rather than the Strategy Board.
7	To ensure that the NDNADSB urgently reviews the need for the retention of DNA samples as well as profiles.	Progress Made: The Crime and Security Act requires the destruction of samples. The Strategy Board intends in any event to proceed with a systematic destruction of samples.
		Response: The Protection of Freedoms Bill section 14 adds a new section 63R to PACE under which DNA samples must be destroyed within six months from the date on which the sample was taken.
8	To continue to press for an improved statutory base for the NDNAD and its operation and for a simpler appeals process.	Progress Made: The Crime and Security Act has been passed by Parliament. The provisions within the act for an appeals process are inadequate.
		Response: The issue of appeals is now less significant because section 24 of the Protection of Freedoms Bill provides that the Strategy Board will issue guidance about the destruction of samples/profiles which forces must obey and because the Bill also provides for less retention of profiles from those not convicted.
9	To support (at present) a moratorium on the use of coding section DNA for forensic purposes and to set up a short-life working group to advise on the value and consequences of moving into this area.	Progress Made: A working party has been set up.
		Response: The Chair of the Ethics Groups sits on the working group.
10	To note the judgment in the S & Marper case and to interpret and advise on its consequences for England and Wales.	Progress Made: The Crime and Security Act has been passed by Parliament.
		Response: Sections 2 to 7 of the Crime and Security Act were implemented on 7 March 2011. The other sections have been replaced by provisions of the Protection of Freedoms Bill.

The Ethics Group

Annual Report April 2010

('Recommendations' are as stated in the April 2010 Ethics Group Annual Report; 'Response' is the response given in the NDNAD 2009-11 Report)

Recommendations

<p>1 To accept the fundamental need for prospective studies to ensure that key issues of the proportionality and relevance of the various uses/ categories of individuals within the DNA database are illuminated by robust statistical information.</p>	<p>Progress Made: The Home Office has informed the EG that the case for retention regimes proposed in the Protection of Freedoms Bill has been based on a further analysis of the evidence used for the Crime and Security Act. The EG understands that this analysis has been peer-reviewed and will be published in due course.</p>
	<p>Response: Data on the utility of the NDNAD is currently produced from its own Management Information Systems and from forces. While it may be desirable to extend the data collected, this must be placed in the context of government policy to reduce the demands on forces and tighter budgets which will focus work on police operational requirements.</p> <p>The Home Office published this analysis in September 2011 at:</p> <p>http://www.homeoffice.gov.uk/publications/about-us/legislation/freedom-bill/dna-retention-policy?view=Binary</p>
<p>2 The effectiveness of the NDNAD in solving crime needs to be addressed with a proper statistical/ evidence basis for any conclusions.</p>	<p>Progress Made: The Strategy Board supports the principle of further research in this area. However, the EG is not aware of any such research being commissioned</p>
	<p>Response: This is a matter for the Home Office rather than the NDNAD Strategy Board though see response to recommendation 1.</p>

<p>3 The National DNA Database Strategy Board and the NPIA should work with the EG towards an embedding of ethical considerations at all stages in the use, obtaining and retention of DNA samples and profiles.</p>	<p>Progress Made: EG members are actively involved in Strategy Board work-streams so that ethical considerations are brought to the fore from the early stages of projects</p>
	<p>Response: Agreed, subject to the ultimate determination of policy by Ministers.</p>
<p>4 The appeals process against decisions not to delete a profile from the database should be reviewed to ensure that the cost of an application does not act as an unreasonable bar to redress. Consideration should be given to referring such decisions to a specialist tribunal (such as that under the Regulation of Investigatory Powers Act) rather than panels of magistrates across the country who may very rarely consider such a case in practice.</p>	<p>Progress Made: The Protection of Freedoms Bill introduces a new retention framework that destroys the profiles of those arrested but not charged or not convicted of minor offences. Those arrested and charged for serious offences will have their profiles retained for three years. It is expected that those provisions will result in the removal of the majority of the one million plus records relating to un-convicted individuals currently on the NDNAD. When this is viewed alongside the expanded categories in which the police will be expected to delete material, as set out in the Strategy Board's guidance, the Government does not believe that a further independent appeal mechanism is either necessary or cost effective. However conviction for a minor recordable offence will still mean indefinite retention which the EG believes is not compatible with the Human Rights Act 1998.</p>
	<p>Response: This is a matter for the Home Office rather than the NDNAD Strategy Board.</p>
<p>5 The database should be supported by a strong governance framework and there should be a clear and transparent accountability for its operations.</p>	<p>Progress Made: The Protection of Freedoms Bill puts the NDNAD and the Strategy Board on a statutory footing, with the board overseeing the operations of the NDNAD. The Board reports to the Home Secretary, who is accountable to Parliament and must lay the Strategy Board's Annual Report before Parliament.</p>
	<p>Response: No comment needed.</p>

Appendix D - Estimate of the percentage of young black men on the National DNA Database

The National Policing Improvement Agency has undertaken analysis to produce a more informed estimate of the percentage of young black men (defined as aged between 15 and 34 years) in the population who are on the National DNA Database (NDNAD).

This analysis builds on previous estimates that have been cited in the media and Hansard and it suggests that although it is not possible to provide a precise figure the true proportion of young black men on the NDNAD is likely to be lower than the estimates that have been calculated previously.

Summary of the findings

Using Office for National Statistics population figures for 2007 as a base for the young (15-34 years) black male population, between **45 per cent and 61 per cent of this group were estimated to be on the National DNA Database as at 13/12/07.**

A comparison of self-defined ethnicity and police defined ethnicity for arrests in 2007-08 provides some indicative evidence that the **actual proportion of young black men on the database is likely to fall at the lower end of this range (around 45% to 48%).**

The estimations have been calculated using a number of assumptions which seek to account for some fundamental issues with the comparability of the data (see below for more detail). The assumptions and related estimates are outlined in Table 16 below.

Table 16: Estimates of the percentage of young black and white men (aged 15-34) on the NDNAD (England only)

	Assumptions about unknown ethnicity	
	None of those recorded by the police in the NDNAD as having 'unknown' ethnicity would self-define as black or white	Those recorded on the NDNAD as having 'unknown' ethnicity are assumed to be distributed across the ethnic groups in the same proportions as the remaining young men on the database (whose ethnicity was recorded)*
Proportion of young black men on the NDNAD as % of the black population aged 15-34 in England	58 %	61 %
Proportion of young black men on the NDNAD as % of the black and 'mixed race' population aged 15-34 in England	45 %	48 %
Proportion of young white men on the NDNAD as % of the white population aged 15-34 in England	24 %	26 %
Proportion of young white men on the NDNAD as % of the white and 'mixed race' population aged 15-34 in England	24 %	25 %

* ethnic group as % of NDNAD age group, 9% black / 82% white

Calculation of the estimate

The estimate of the percentage of young black men on the NDNAD presented in this paper updates earlier work carried out by the NPIA. It seeks to provide a more reliable and transparent estimate by refining and clearly articulating the assumptions on which the analysis has been based.

The estimate is calculated using the following data sources:

Office for National Statistics (ONS) 2007 mid-year population estimates for young men between 15 and 34 years in England – the most recent population data available with ethnic breakdown¹ (see table 1). The estimates are calculated by ONS for England only and equivalent data were not available for the population in Wales.

Download of data from the NDNAD as at 13/12/2007 on the number of profiles of people on the entire database meeting the following three criteria:

- those loaded onto the database by English forces only (as population data is only available for England)

¹ The ONS mid-year population estimates are calculated for the resident population and only include international migrants staying for 12 months or more.

- those who on the date of the download (13/12/07) were calculated using their date of birth to be aged between 15 and 34 years
- males only

The nature of these two data sources mean that adjustments need to be made to make them more comparable. In particular, the ONS population data uses the 16+1 self-defined ethnicity codes whereas the NDNAD uses 6+1 officer-defined ethnicity codes as recorded on the Police National Computer (PNC)². The differences in how ethnicity is recorded means that the analysis set out in this paper is comparing ascribed ethnicity with described ethnicity which research has shown can be very different³.

In order to inform the adjustments that need to be applied to the data a number of assumptions have been developed. These assumptions are described below as are their principal limitations. Possible ways of refining the estimates further and the associated problems are also set out.

Assumptions to be applied to the data

a) **Accounting for those on the NDNAD who would self-define their ethnicity as 'mixed race'**

As described above, the ONS population data is based on self-defined ethnicity using the 16+1 codes whereas the NDNAD data uses police defined 6+1 ethnicity codes. A particular problem that arises when comparing these two sets of data is that unlike the 16+1 self-defined codes, the officer-defined codes do not include a Mixed Race category. Consideration therefore needs to be given to how people who define themselves as Mixed Race are coded on the PNC and by extension the NDNAD.

Given the lack of reliable data on which to estimate the proportion of profiles on the NDNAD in the African Caribbean ethnicity category who would self-define as mixed race two broad assumptions have been applied to the analysis:

- None of the profiles categorised on the NDNAD as Black would self-define as Mixed White/Black Caribbean or Mixed White/Black African – i.e. the estimate is based on those on the database in the Black category as a percentage of the Black population only.
- The profiles categorised on the NDNAD as Black include all of those individuals who would define themselves as Mixed White/Black Caribbean or Mixed White/Black African – i.e. the estimate is based on those on the database in the 'Black' category as a percentage of the black and mixed race (White/Black Caribbean and White/Black African) population.

² Under the 16+1 ethnicity codes people can define themselves as Black Caribbean, Black African or Other Black for the purposes of this analysis these three categories have been aggregated. Under the 6+1 police-defined ethnicity codes there is just one category which is defined as 'black'.

³ Bland, N., Miller, J. and Quinton, P. (2000) Upping the PACE? An evaluation of the recommendations of the Stephen Lawrence Inquiry on stops and search. Police Research Series Paper 128. London: Home Office.

The true value is likely to lie somewhere in between.

b) Accounting for those on the NDNAD whose ethnicity is coded as 'unknown'

A proportion of the young people on the database have been recorded with 'unknown' ethnicity (5% as at 13/12/07). Making different assumptions about the ethnicity of individuals included in this category will impact on the calculation of the proportion of young black men in the population who are on the NDNAD.

Two different assumptions have been applied to the analysis:

- None of the individuals classified on the NDNAD as 'unknown' ethnicity would self-define as Black or White – i.e. the estimate is based on the numbers of individuals defined as White or Black from the original download and no adjustments have been made.
- The ethnic make up of those grouped under the 'unknown' category is distributed across the ethnic groups in the same proportions as the remaining young men on the database – i.e. the estimate is based on the numbers of individuals defined as White in the original download plus 82 per cent of the number of 'unknowns' and the number of individuals defined as Black in the original download plus 9 per cent of the number of 'unknowns'.

It is possible that both of these calculations underestimate the actual number of individuals with 'unknown' ethnicity who would define themselves as Black Caribbean or Black African in the census, which would result in an underestimate of the proportion of young black men on the NDNAD; however there is little information on which a more realistic estimate can be based.

c) Accounting for the replication of profiles on the NDNAD.

A proportion of profiles on the DNA database are replicates – that is they could be from the same individual but are loaded as unique profiles on the database. Replicates occur on the database for a variety of reasons, for example, if an individual has given different names when arrested on different occasions. It is not possible to simply remove those profiles that are duplicates as some of these may actually relate to different individuals, for example if twins, triplets and so on have been loaded to the database. The data from the NDNAD therefore needs to be adjusted to take account of replicates so that as far as possible only unique individuals are included in the estimate.

Figures for the overall replication rate of profiles across each of the forces as of 2009 were obtained. Data on replication rates by age or ethnicity were not available as there were difficulties in interpreting these data e.g. for some replicated profiles different ethnicities were recorded. The replication rate for each force has been used to adjust the number of profiles loaded in each force providing an estimate of the number of unique profiles from young males on the DNA database at the end of 2007.

Results of the analyses

Table 17 presents the population estimates for young males in England. These estimates are derived from the Estimated resident population by ethnic group, age and sex, mid-2007 – Table EE4) (experimental statistics) from ONS. It should be noted that these figures are for England only; comparable figures are not available for Wales. These population estimates for England are used in the tables that follow.

Table 17: Population estimates – 2007 - England only

Males aged 15-34	
White	5,670,700
Black	247,000
Mixed (Black Caribbean/white and Black African/ White)	71,000
Black + mixed	318,000
White + mixed	5,741,700

Source: ONS mid year population estimates 2007 (Table EE4)

Table 18: presents the range of estimates of the percentage of young black men in the population who were on the NDNAD as of 13/12/07 based on the different assumptions detailed above.

Table 18: Estimates of the percentage of young black men (15-34) on the NDNAD (England only)

	Profiles on NDNAD (13/12/07)	Profiles on NDNAD (13/12/07) excluding replicates	Assumptions about unknown ethnicity	
			No 'unknowns' would self-define as black or white	'Unknowns' distributed in the same proportion as those with known ethnicity on NDNAD*
Unknown 15-34	104,325	88,565		
Black 15-34	168,254	143,106	143,106	151,077
White 15-34	1,571,827	1,384,007	1,384,007	1,456,630
black as % England black popn.			58 %	61 %
black as % England black + mixed popn.			45 %	48 %
white as % white popn.			24 %	26 %
White as % of the white and mixed pop			24 %	25 %

* Ethnic group as % of NDNAD age group, 9 % black / 82 % white

From these analyses, an estimated 45% to 61% of the young black male population was on the NDNAD as of 13/12/07. The lower estimate assumes that the replication rate overall across forces applies equally to young black and young white males, that none of those of 'unknown' ethnicity would self-define as Black or White and uses the population of black and 'mixed' young men as the denominator. The higher estimate assumes that the replication rate overall across forces applies equally to young black and young white males, that those of unknown ethnicity were distributed in the same pattern as those on the database whose ethnicity was known and uses the black population only as the denominator.

The best estimate is likely to fall between these two figures.

Principal limitations

There are still problems with these estimates and the assumptions used to calculate them. In order to produce more precise estimates we would need more information about:

- Recent population estimates by age, ethnicity and gender that include all of England and Wales.
- The replication rates for profiles of young men on the NDNAD and replication rates for different ethnic groups.
- The ethnic appearance of those who are classified as unknown on the NDNAD – little is known about the ethnicity breakdown of those classified as unknown on the database. Further work to refine these assumptions could include observational work in custody suites to give an indication of the likely ethnic breakdown of 'unknowns'.
- The number of young men defined by the police as Black who may classify themselves as Mixed White and Black Caribbean or Mixed White and Black African as used in the census definitions;

Possible approach for refining the estimates in relation to those with 'mixed White and Black Caribbean or mixed White and Black African'

A potential data source which could be used to estimate the proportion of people defined by the police as Black who would define themselves as Mixed White and Black Caribbean or Mixed White and Black African is the Home Office arrest data. Since 2009, data collected on the ethnicity of people arrested have been reported using the 16+1 self-defined codes as well as the 4+1 police defined codes. By comparing the two sets of classifications it might be possible to derive an indicative estimate of the proportion of arrestees who were defined by the police as Black using the 4+1 ethnicity codes who also self-defined as 'black'. This estimate could then be applied to the NDNAD data to estimate the number of young Black men on the NDNAD excluding those who would self-define as Mixed Race or other non-Black classifications. This estimate would provide an indication as to what end of the range given above the 'true' proportion is likely to lie.

Table 19: Comparison of total arrests with the 16+1 self-defined ethnicity classification 'black' or 'white' with the total arrests with the 4+1 police defined ethnicity of 'black' or 'white'*

	Total arrests for notifiable offences by self-defined ethnicity (16+1 classification)	Total arrests for notifiable offences by police defined ethnicity (4+1 classification)	Total arrests in the 16+1 group as a proportion of total arrests in the 4+ 1 group
Black	107,806	136,546	79%
White	1,073,050	1,115,730	96%

* Data excludes Cleveland and Suffolk as they were not able to provide the ethnic breakdown under both classifications or were only able to provide partial data

By using the comparison of the 16+1 arrest data with the 4+1 arrest data an assumption could be made that 79% of the individuals on the NDNAD who are defined by the police as Black would also self-define in one of the Black categories (see Table 19). That is the remaining 21% would self-define in one of the other categories (and would not define themselves as Black in the census). The comparison can also be used to provide an indication of the proportion of individuals on the NDNAD who are defined by the police as White who would self-define in one of the other categories – 4%. Using these assumptions, an estimate can be made of the number of people on the NDNAD who would self-define as Black as a proportion of the Black population (see Table 20).

Table 20: Estimates of the percentage of young black men (15-34) on the NDNAD accounting for those who may self-define in a non-black category (England only)

	Profiles on NDNAD (13/12/07)	Profiles on NDNAD (13/12/07) excluding replicates	Assumptions about unknown ethnicity	
			No 'unknowns' would self-define as black or white	'Unknowns' distributed in the same proportion as those with known ethnicity on NDNAD*
Unknown 15-34	104,325	88,565		
Black 15-34	168,254	143,106	143,106	151,077
White 15-34	1,571,827	1,384,007	1,384,007	1,456,630
Black 15-34 (excluding the estimated proportion who would self define in a non-black category)		113,054	113,054	119,351
White 15-34 (excluding the estimated proportion who would self define in a non-white category)		1,328,647	1,328,647	1,398,365
black as % England black popn.			46%	48%
white as % white popn.			23%	25%

* Ethnic group as % of NDNAD age group, 9% black / 82% white

Principal limitations

There are risks associated with this approach particularly in relation to accounting for those who chose not to state their ethnicity. Research which compared self-defined ethnicity with officer defined ethnicity for a sample of people stopped and searched in Chapeltown (West Yorkshire) and Ipswich (Suffolk) found data quality problems with the self-defined ethnicity codes, particularly for those individuals grouped under the African Caribbean police defined 6+1⁴ code. Almost a quarter of those who officers defined as African Caribbean either refused to provide details or did not know how to classify themselves when asked. In addition, in Chapeltown 4% of those defined by officers as Asian described themselves as Black Caribbean.

Although these findings were only from two areas they suggest that there are difficulties with using the 16+1 and 6+1 codes to allow meaningful conclusions to be made about how the sets of data are related. More work would be required to understand better how the two codes are linked before they could be used to estimate the proportion of the profiles classified as Black under the 6+1 police defined code that would self-define as Mixed White and Black Caribbean or Mixed White and Black African.

In addition to the data comparison issue highlighted above there are a number of other problems in using the arrest data to refine the data from the NDNAD, these include the following:

- The data relate to arrest events rather than to individuals (i.e. the same person could have been arrested multiple times but would be recorded as separate events in the data so there is likely to be double counting of individuals)
- The data measure all arrestees including those who have been arrested or charged/convicted previously and so do not relate specifically to the population loaded onto the NDNAD.

⁴ Bland, N., Miller, J. and Quinton, P. (2000) Upping the PACE? An evaluation of the recommendations of the Stephen Lawrence Inquiry on stops and searches. Police Research Series Paper 128. London: Home Office.

Appendix E

Glossary

ACPO

The Association of Chief Police Officers, an independent, professionally led strategic body, which in the public interest and in equal and active partnership with Government and the Association of Police Authorities leads and co-ordinates the direction and development of the police service in England and Wales.

APA

The Association of Police Authorities, an organisation set up on 1st April 1997 to represent Police Authorities in England and Wales and Northern Ireland, both on the national stage and locally. It influences policy on policing and supports local Police Authorities in their important role.

CJS

Criminal Justice System

Crime scene sample

A DNA sample recovered from the scene of a crime.

Crime scene profile

The DNA profile derived from analysing a crime scene sample.

DNA

Deoxyribonucleic acid, a substance found in most cells of all people and in the cells of animals, plants and other organic matter. Variations in the DNA code are responsible for physical differences between individuals including their sex, height and eye colour. Except for identical siblings each person's DNA is unique.

DNA sample

A physical sample of an individual's DNA.

DNA profile

A numerical representation following analysis of a DNA sample.

Ethics Group

An advisory non-Departmental Public Body set up to provide independent advice on ethical issues concerning the NDNAD to Ministers and the Strategy Board.

Exceptional Case Procedure

The Exceptional Case Procedure allows for the removal of specific data on the PNC, together with the associated fingerprints and DNA samples, at the discretion of the Chief Constable "owning" the data, in exceptional cases only.

Forensics21

An overarching programme of work within the National Policing Improvement Agency with the aim of creating a police led forensic service. Strategic direction for the programme is provided through the Association of Chief Police Officers Forensics Portfolio Board

Forensic Service Provider

An organisation that has been granted authority by the Strategy Board to process DNA samples or interpret the results from processing.

FSS

Forensic Science Service Limited, a Government Owned Company.

Human Genetics Commission

An advisory body set up by the Government at the end of 1999 to consider the public interest issues in relation to developments in genetic science.

Independent Advisory Groups

IAGs are a representative group of community members who act as 'critical friends' to the police service. They are entirely independent of the police, are voluntary and have their own meetings with an independent chair and secretariat. There is two way communication in that the police are invited to attend IAG meetings and IAGs may be invited to sit on Gold Groups or asked to comment on certain areas of policing. Hence IAGs can raise community issues and in turn the police can share information with IAGs.

Match Group

A match group consists of two or more profiles that are indistinguishable or compatible, in so far as comparison is possible. A match group may comprise any combination of profiles, for example, two or more subject profiles, two or more crime scene profiles or a mix of subject and crime scene profiles.

NDNAD

National DNA Database

NDNAD Delivery Unit

A Unit within the National Policing Improvement Agency that offers two services; maintenance and operation NDNAD including the provision of data to police forces and forensic suppliers and assurance of the integrity of the data held on the NDNAD. Any forensic laboratories wishing to submit profiles to the NDNAD must have gone through an accreditation process which involves the NDNAD Assurance Service. The Service Delivery team will load DNA profiles onto the NDNAD and report any resulting DNA matches to their stakeholders.

NPIA

National Policing Improvement Agency

PACE

Police and Criminal Evidence Act 1984

PNC

The Police National Computer, which holds extensive data on arrested individuals, vehicles and property and is accessible from over 120,000 police terminals across the country. In particular, it contains details of persons from whom DNA samples have been taken under PACE. A subset of these details is transferred electronically to create a stub record on the NDNAD to which the DNA profile is subsequently attached.

Police Elimination Database

Regulation 19 of the Police Regulations 2003 requires all new police officers and police community support officers to provide a DNA sample on appointment. Serving officers do on a voluntary basis. DNA profiles derived from these samples are stored on the Police Elimination Database. DNA profiles on the PED are searched against DNA profiles obtained from crime scenes if the Senior Investigating Officer in a case believes that there may have been innocent contamination of the crime scene by the police.

Recordable (and hence Non Recordable) Offence

A Recordable offence is one listed in The National Police Records (Recordable Offences) Regulations 2000. The police may only take a DNA sample from a person who has been arrested, charged or convicted of one of these offences.

SGM

The Second Generation Multiplex DNA profiling system, introduced in 1995, which allows the simultaneous analysis of six loci and a gender marker to produce a DNA profile with an average match probability of about one on fifty million. SGM was the original DNA system used for the NDNAD.

SGM Plus

The current system of DNA profiling used in the UK, known as SGM Plus examines 10 areas of DNA plus a gender test and produces a numeric DNA profile that can be loaded electronically onto the NDNAD. This contains two numerical representations of the DNA at each area examined, one inherited from the mother and the other from the father. Although each person's DNA is unique (apart from identical siblings) DNA profiling does not examine all variations between individuals and is therefore not unique to an individual. It does, however, examine those areas of the DNA that discriminate widely between individuals and the chance of two unrelated individuals having matching full SGM profiles is less than one in a 1,000 million.

NDNAD Strategy Board

The Strategy Board provides governance and oversight of the operation of the NDNAD. It operates under the tripartite arrangements for the governance of policing, comprising members from the ACPO, Home Office/NPIA and the APA. It also includes lay representation.

Subject sample

A DNA sample taken from a known individual, usually following arrest.

Subject profile

The DNA profile derived from analysing a subject sample.