Executive Summary

Background
The National DNA Database (NDNAD) of England & Wales is a forensic intelligence database which was established in 1995. On July 31st 2004 it contained 2,396,429 DNA profiles obtained from samples taken from individuals suspected of involvement in a recordable offence and a further 227,010 profiles obtained from samples collected at scenes of crime. All profiles loaded onto the database are continuously searched against the existing collection of profiles in support of the investigation of crime. This report represents the first systematic overview of the many legal, ethical and investigative issues that are raised by the routine use of the NDNAD by the police. It describes the development and implementation of DNA profiling and databasing within England & Wales, assesses the current contribution of the NDNAD to the Government’s aim of preventing, detecting and reducing crime, examines the arrangements for managing and governing this large collection of human tissue samples and derived profiles, considers the ethical issues which arise from the expansion and continuing use of DNA samples and profiles taken from widening groups of individuals, and discusses the potential future developments in DNA profiling and databasing which may impact upon the organization and application of the NDNAD.

Aims
The report aims to provide an account of the NDNAD and its uses that will stimulate discussion and debate among and across a range of stakeholders (including forensic scientists, crime scene personnel, police officers, policy makers, and members of the legal profession) who contribute to making the NDNAD ‘work’, and among other interested parties (including human rights groups, academics, and bio-ethicists) who respond to, and sometimes influence, understandings and applications of this forensic instrument. It also aims to promote an understanding of the NDNAD beyond those with a ‘hands on’ interest in its use.

Context and sources
The report draws upon a large number of policy and operational documents produced by the Home Office and individual Police Forces as well as documentary material from a variety of other stakeholders including the Human Genetics Commission, the Information Commissioner and several organizations and groups who have an interest in the state collection and use of different kinds of genetic information. In addition it is informed by data from 60 semi-structured interviews with individuals from organizations directly involved in either using, or commenting upon the use of, DNA profiling in the criminal justice system - the police, forensic scientists, crime scene examiners, legal professionals, legislators, and those concerned with human rights issues.
Summary discussion and recommendations

1. The initial contributions of DNA evidence to prosecutorial case work in the late 1980s, alongside early uses of DNA profiling in police investigations, were fundamental in ensuring the speedy acceptance of DNA profiling as a robust, reliable, and credible instrument suitable for use within the criminal justice system. By the early 1990s DNA profiling was established as a key forensic technology. In England & Wales a small number of cases have raised issues about how DNA evidence should be presented in court, but these have been settled by judicial rulings. However, no comprehensive review of the robustness of the scientific and technical practices central to the operation of the NDNAD has ever been published in scientific peer reviewed literature. In light of this:

*We recommend that there should be an authoritative review of the scientific and technological foundations of the NDNAD which explores the robustness of the current methods used for STR profiling, the adequacy of the current numbers of STR markers in the light of the expanding size of the database, and the nature of the 'duplicate samples' currently known to be held on the database. The review should also consider the scientific case for fully independent re-testing of 'evidential samples' along with the potential effects on public confidence of a move to abandoning the routine second sample testing where evidence is not required to support criminal prosecutions.*

2. The current character and uses of the NDNAD have been established during a relatively short period of time in which a series of inter-related scientific, governmental and policing innovations have encouraged the now routine investigative use of the database. Central to this has been the development of the legislative framework supporting the NDNAD. This legislative history can be characterized as a series of multiple and continuous changes to the ways in which the police can legitimately obtain, store and use DNA samples and profiles. The current legislative provisions are the foundations on which the Government has pursued specific policy ambitions to construct an increasingly extensive forensic archive of the so called ‘active criminal population’. Recent changes in the law to permit the retention of profiles derived from the non-consensual sampling of individuals who have not been convicted or charged of any criminal offence is a significant expansion which may affect the public understanding of police uses of the NDNAD. In light of this:

*We recommend that future policy discussions of the further expansion and developing uses of the NDNAD should involve wider political and public debate to ensure continuing support for its legitimate operation.*

3. Since April 2000, the ‘Home Office DNA Expansion Programme’ has delivered approximately two hundred million pounds of dedicated funding for the enlargement of the NDNAD. This high level of Government spending has been accompanied by demands on the police to measure and maximise the ‘efficiency, effectiveness and cost-effectiveness’ of their uses of the NDNAD. Since 1995 key agencies have gradually constructed and implemented an agreed series of measurements capable of representing the performance of all police forces in their effective and efficient deployment of DNA technology. There has been a history of model building, of the establishment of ‘good practice’, and the encouragement of common data capture and operational systems, all aimed at improving the use of DNA and other forms of physical evidence amongst the 43 Police Forces of England & Wales. Despite this there are continued variations between forces in their collection and use of DNA samples and profiles. This makes all generalisations about ‘police uses of DNA’ subject to qualification and it remains difficult to estimate the contribution of the NDNAD to the larger aim of increasing the proportion of crimes detected (and therefore its impact on crime reduction). Most of the available data suggest that the performance of forces has routinely fallen short of the high expectations used to justify the massive expansion of the NDNAD. There remain no publicly available independent evaluations of the NDNAD almost ten years after its establishment. In light of this:
We recommend that more priority and resources should be given to an independent evaluation of the effectiveness of police uses of the NDNAD for detecting crime. The widespread public dissemination of such an evaluation is important since continued support for its operation will depend on a clear demonstration that the erosion of civil liberties involved in expanded forensic DNA databasing can be justified by corresponding improvements in public security.

4. Of particular importance to the NDNAD are the current arrangements and relationships which have developed between several public and private sector agencies involved in its custodianship and governance. Recent critical commentaries of these arrangements have been reflected in a review of the FSS. While it seems that the Government has accepted the bulk of this review there has been no public announcement of the process by which a new model will be developed or who will be involved in any process once it is established. The degree to which discussions of changes in the NDNAD governance structure are themselves open, transparent, accountable and inclusive is important. In light of this:

We recommend the creation of an independent oversight body with lay members to scrutinise the workings of the NDNAD. This would monitor the management, use and future development of this key forensic resource, as well as promote openness and transparency in accordance with the principles underpinning the Freedom of Information Act (2000) which comes into force in January 2005.

An important subsidiary area of the NDNAD is the conduct of genetic research carried out by the Custodian or any of the laboratories who are storing samples from which genetic profiles have been obtained. Such research activities are especially in need of improved governance arrangements. Research findings will play a key role in shaping the future trajectory of the NDNAD and should therefore be the subject of greater scientific and public scrutiny. In light of this:

We recommend the establishment of arrangements for the independent scrutiny of research projects based on forensic genetic data held by the Custodian or derived from CJ and crime scene samples held in profiling laboratories.

5. Since the 1993 Royal Commission on Criminal Justice recommended the introduction of legislation to support forensic DNA databasing in England & Wales, enthusiasm for DNA profiling has been fuelled by affirmations of the social benefits promised by its use. Central to this is the potential for DNA profiling to ensure greater fairness and parity within the criminal justice system through the ‘scientific objectivity’ it adds to existing investigative methods and prosecutorial resources. Yet what have also been recognized are a number of additional ethical concerns, most notably: the potential assaults on individual liberty arising from the compulsory taking of bodily samples and the retention and continuous speculative searching of DNA profiles. These issues need to be framed in terms of the important ‘balance’ between individual rights and civil security. On-going questions in relation to ‘balance’ are: whose profiles should be retained on the database for continuous speculative searching, the arrangements for the retention of biological samples in addition to profiles, and the proper uses of the personal information derivable from any analysis of the genetic information contained in profiles and samples. In light of this:

We recommend that the independent oversight body proposed above has a responsibility for ensuring that these issues are fully addressed (in consultation with key stakeholders and other public bodies such as the Human Genetics Commission and the Information Commissioner).
The indefinite retention of samples taken from individuals is of particular concern because of the potential to derive sensitive genetic information from them and the possible misuse of such information. This raises issues about the security and confidentiality of the samples themselves. In addition, the status of the information contained in profiles may change over time as knowledge grows about the particular STR loci currently used. In light of this:

We recommend that, despite arguments for the practical usefulness of sample retention, samples should be retained for a limited period only (in the case of matched crime scene samples this should be until the end of any sentence served by individuals whose prosecution involved the use of DNA evidence). In addition the Information Commissioner should be invited to consider whether profiles themselves should be treated as potentially sensitive personal information.

The most contentious aspect of the current uses of the NDNAD is the practice of retaining, and continuously speculatively searching, the DNA profiles of those never convicted or charged with a recordable offence. The recent House of Lords ruling in the case of Marper & S reflections the Government’s own argument for the legitimacy of extending police powers to retain DNA from those arrested or charged but not convicted. It is an argument which relies on a set of judgements about the moral character of persons who come into contact with the police but who are not proven to have committed any crime. The assurance that there is ‘nothing to fear’ from the retention of samples and profiles – because they are used only for the purposes of preventing and detecting crime – is a Government attempt to allay concerns about NDNAD security and confidentiality. Yet this is a different matter to the privacy related criticism that the removal of individual autonomous control over one’s bodily samples is unjustified in relation to people who have never been convicted of a recordable criminal offence. In light of this:

We recommend that urgent legal and political consideration should be given to the ongoing practice of including on the database those arrested but not charged with a recordable offence. Clearly developed principles and strong evidence-based justifications need to be established if this practice is to be continued.

Issues of informed consent arise under the current arrangements for the retention of both profiles and samples given voluntarily to the police during intelligence led mass screens and other occasions when police seek to use DNA samples to eliminate individuals from further investigation. The practice of seeking ‘irrevocable consent’ is especially troubling and has no parallel in other research or medical settings in which tissue samples are donated. In light of this:

We recommend that improved protection is provided for voluntary donors to ensure that consent is fully informed, freely given and subject to revocation on the part of the donor. Further consent should be sought when samples and profiles are to be used for research purposes in addition to the normal practices of speculative searching.

6. There are a range of possible developments which may significantly alter both the future form and police uses of the NDNAD. A number of potential technological, organisational and legislative changes would, if realised, raise significant issues for the NDNAD in terms of both its investigative usefulness and its ethical and social viability as a permanent collection of genetic material. There are three key areas where possible growth in police uses of the NDNAD may occur. The first is in front-end developments where changes in the collection and analysis of DNA at crime scenes may impact upon both the content and interrogation of the database. Issues include the development of portable equipment to enable scene of crime DNA analysis, new forms of crime scene sample collection, the identification of phenotypical characteristics from crime scene samples, and the remote interrogation of the NDNAD. Each of these raises important issues which may limit their adoption. Both portable DNA analysis and new forms of
sample collection raises questions regarding the validity and admissibility of the evidence collected. The remote interrogation of the NDNAD by crime scene personnel creates issues in relation to the confidentiality and security of profile data. In light of this:

*We recommend that early attention is given to these emerging issues in order to safeguard the evidential quality of crime scene samples and matches derived from them along with the confidentiality of the genetic and other information.*

The second area of potential change is based on developments in laboratory applications of DNA analysis where technological advances may allow a range of new ways to analyse genetic material. Familial and partial match searching are already being used and show significant promise. ACPO has acknowledged that a number of ethical issues need to be considered in this context, including the risk that a previously unknown genetic link between individuals might be revealed or, conversely, the absence of previously assumed genetics links may be shown. Both cases may violate current understandings of appropriate levels of respect for private and family life. In light of this:

*We recommend that current ACPO guidelines for the investigative use of familial and partial matches are kept under continuous review so that new developments in this technology are properly understood and deployed by investigating officers.*

Another potentially important and controversial development is the derivation of a suspect’s physical characteristics from DNA samples. At present this is restricted to the identification of hair colour and varying inferences concerning ‘genetic ancestry’. These are used to aid the police to define a target population of suspects. However, little evidence is publicly available to assess the effectiveness or value of these services. There are also very serious problems in trying to operationalize concepts of race and ethnicity in this manner. In the long term the possibility of platform alteration and the introduction of SNP-based genotyping will greatly facilitate the derivation of suspect characteristics. It could also be used to derive profiles from much more degraded samples and offer the potential to produce highly discriminating profiles using a greater number of loci. However, this would also raise many more serious concerns about the sensitive nature of the genetic information contained in the profiles. In light of this:

*We recommend that all such applications of forensic DNA profiling and the NDNAD are fully informed by knowledge of public attitudes to these issues and that a precautionary principle is exercised in order that public confidence in the use of the NDNAD is maintained.*

There are possible modifications to the form of the database either in terms of the expansion of its content or through the extension of its connections with other forensic or non-forensic databases. Under the current remit of targeting the ‘active criminal population’ there is relatively little scope for the expansion of the NDNAD. Attention is likely to be focused on exploiting the present collection further and more effectively. In particular, this is likely to involve much greater data sharing and exchange by linking the NDNAD to other intelligence sources. This might include more efficient ‘joined-up’ police record keeping, co-joining the NDNAD to databases in other jurisdictions, and mechanisms for data access and exchange with non-forensic DNA (medical) databases. In addition, there are also ambitious plans to allow data-sharing between forensic databases throughout Europe. This raises very significant political and ethical issues which have not yet been fully considered by the Government. In light of this:

*We recommend that the current exploration of the scientific and legislative underpinnings of such data-sharing is supplemented by a more thorough consideration of the social and ethical issues that are raised by these developments, especially those that involve the interoperability of database searching across national jurisdictions.*
The extension of the current collection of DNA profiles and samples held on the NDNAD to cover the entire population has been continually debated since the mid-1990s. No universal forensic database has ever existed in England & Wales despite earlier suggestions for the establishment of a fingerprint database in the Inter-War period. Yet the trajectory of the NDNAD development has been to steadily increase the types and numbers of people contained on it through a process of policy, legal, and organisational ‘creep’. Consequently, the NDNAD is substantially different from when it was first created. In light of this:

We recommend that proposals for the further extension of the NDNAD to become a universal database are not pursued by the Government since the continuous speculative searching of such a database is likely to be ruled a disproportionate breach of private and family life under Article 8 of the ECHR.