

Justice Committee Briefing – Forensic Science Northern Ireland

Introduction

1. Good afternoon and thank you for the opportunity to update the Committee on the services provided by Forensic Science Northern Ireland (FSNI) and the preparatory work underway ahead of the enactment of the Justice Bill to amend the law about retention and destruction of fingerprints and DNA profiles under Part 6 of the Police and Criminal Evidence (Northern Ireland) Order 1989. Today, I am joined by Stephen Campbell, Director of Laboratory Services, who leads the DNA Section, and Ian Craig, Head of the Biology Reporting Team.
2. FSNI is very much an operational organisation whose purpose is to provide objective scientific advice and support to enhance the delivery of justice. The Department of Justice has lead on the development of the legislation on biometric retention periods and FSNI's role is to support the implementation of the legislation.
3. We will provide detail on FSNI's role in operating and managing the NI DNA Database but it is important to stress, at this early stage, that profile deletion will only occur when notifications are received from the PSNI to do so. FSNI currently delete a small number of DNA profiles and associated biometrics from both the NI and National DNA databases. This process is initiated through a deletion instruction from the PSNI biometrics team to remove a DNA profile.

4. Firstly, I would like to brief the Committee on the services FSNI provides in relation to fingerprints, Biology and DNA, this presentation is somewhat technical in nature.

FSNI Specialist Fingerprints Unit

1. The role of FSNI's Specialised Fingerprint Unit (SFU) is to detect, enhance and record fingerprint ridge detail at the crime scene, but more commonly on submitted items, in combination of other evidence types, usually in the most serious of crimes.
2. Latent prints are those that cannot be readily seen and are visualised using specialised lighting techniques in conjunction with multi-stage chemical treatments. Once visualised, highly trained photographers capture images of these marks, producing digital prints. The prints are subsequently forwarded to PSNI's Fingerprint Bureau for comparison.
3. FSNI do not hold any searchable fingerprint databases.

FSNI Biology Team

1. The Biology Team comprises 15 Court Reporting Officers who provide Expert Witness to the Court. They are supported by two laboratory-based teams, the Evidence Recovery Unit (ERU) and the DNA Unit. In addition to carrying out examinations at the crime scene, the Biology Team are responsible for case assessment, evaluation and interpretation of results and reporting the case to either advance the investigation or for presentation in court as required.
2. The role of the ERU is to recover biological evidence in conjunction with other evidence types, at the request of the Biology Reporting Officers. This evidence can be in the form of a body fluid, such as blood, semen or saliva, or in the form of trace DNA. This evidence is submitted in the form of items, such as items of clothing, or perhaps swabs that have been taken at a crime scene.

3. The types of cases involving these teams would include:

Offences against the person, such as:

- Terrorism
- Murder
- Rape/ Sexual Assaults
- Assaults

Volume Crime, such as:

- Theft/ Burglaries
- Drugs Offences
- Car crime

FSNI DNA Section

1. DNA profiling has become a routine source of key evidence in criminal investigations. The work of the DNA Unit is to analyse samples taken from those who have been arrested as well as the analysis of samples recovered from items submitted to the laboratory by ERU.
2. Samples are analysed using modern, technologically advanced recovery, purification, amplification, separation and detection techniques. FSNI was the first DNA lab in the UK to operate using DNA17, an extremely sensitive analysis process that allows profiles to be extracted from very small quantities of DNA and from those of poorer quality.
3. The ability to translate biological DNA profiles into a simple digital format allows for the rapid matching of profiles on large databases. Crime profiles are matched against each other (to link multiple separate crime scenes) and against subject profiles to link offenders to crime related items/materials.
4. In relation to DNA databasing, samples submitted for DNA profiling fall into two categories. Subject samples are those taken from an individual arrested for a recordable offence or who is directly linked to a specific offence. These samples are taken as a mouth swab, with approximately 8000 samples processed by FSNI per year.

5. Crime stain samples contain DNA from a range of biological sources such as blood, semen and saliva and are often from an unknown source and relate to both serious and volume crime. These samples are processed using the same DNA profiling chemistry as subject samples, with approximately 9000 crime stain samples submitted per year.

The majority of samples are submitted by the PSNI with capacity and timeliness requirements agreed through an annual Memorandum of Understanding.

Northern Ireland DNA Database (NIDNAD)

1. The Northern Ireland DNA Database (NIDNAD) was first established in 1996 to create a database of suspect DNA profiles and crime scene stains to identify possible suspects for further investigation by the police.
2. The existing framework for the taking, retention and destruction of fingerprints, DNA samples and the profiles derived from such samples is set out in Part VI of the Police and Criminal Evidence (Northern Ireland) Order 1989 (PACE). Amendments to PACE made by the Police (Amendment)(NI) Order 1995 enabled DNA samples to be taken from anyone charged with, reported for or convicted of a recordable offence, and allowed profiles obtained from such samples to be retained and checked for matches against other profiles obtained from victims or scenes of crime.
3. The Criminal Justice and Police Act 2001 further amended PACE so as to remove the obligation to destroy fingerprints, DNA samples or profiles when a suspect was not prosecuted for, or was acquitted of, the offence with which he or she was charged. The power to take and retain fingerprints, DNA samples and profiles was further widened by the Criminal Justice Act 2003, which allowed a DNA sample to be taken from any person arrested for a recordable offence and detained in a police station, whether or not they were subsequently charged. Any such sample, and the profile derived from it, could be retained indefinitely.
4. FSNi acts as the custodian of the Northern Ireland DNA database (NIDNAD) and regularly uploads NI DNA profiles with the UKs Forensic Information

Database Services (FINDS). The stand-alone nature of the NI database allows for faster local searching and as we share the same DNA17 system as England and Wales as well as Republic of Ireland, it allows for data exchange, when appropriate.

5. Samples from detained persons (usually taken by mouth swabbing) under the terms of PACE and under the Terrorism Provisions (TACT) are processed and the resulting profiles which are complete single source profiles attributed to the individual are loaded to the local database. Similarly, profiles derived from crime stain samples recovered as part of the investigation of offences (e.g. by swabbing surfaces of scenes and exhibits) are uploaded to the local database. These profiles may be complete or partial (incomplete) depending on the quality and quantity of the DNA recovered. It is often the case that the same profile, of an unknown individual, is recovered from multiple crimes, scenes or exhibits, indicating a possible link.
6. These crime profiles are then searched against the local database in the hope of detecting a link between crimes, etc. (as mentioned above) or of identifying (or indeed eliminating) potential suspects.
Routinely, matches between any of these profiles are reported to PSNI facilitating on-going police investigation.
7. The local database, as part of its service, forwards a single profile of each subject to the National DNA Database. Additionally, crime stain profiles which do not trigger a match on the local database will also be forwarded for loading to and searching against the National DNA Database. As a demonstrable outcome, around 60% of crime stain profiles result in a hit or match on the local Database and therefore do not require a further search on the national database. FSNi process on average 650 subject and 750 crime stain samples per month.
8. At present the NIDNAD holds circa 250,000 DNA profiles. This is a cumulative number which has built up over many years since the Database came into being. Subject samples taken under both PACE and TACT account for 225,000 profiles and are linked to demographic data, with 23,600 crime stain profiles held.
9. Within the local DNA database profiles are uploaded from subjects who have DNA samples taken under PACE and TACT legislation. Profiles taken under

TACT are retained on the NIDNAD and exported for upload and searching to the Counter terrorism database managed and operated by the Metropolitan Police. Samples taken under TACT account for less than 1% of subject samples processed per year.

10. The NIDNAD is an accredited software system with restricted user access to a number of staff within FSNIs DNA Unit and members of the Biology Reporting Team. FSNIs DNA processes are accredited by the United Kingdom Accreditation Service (UKAS) to the ISO 17025:2017 standard. Stringent operating protocols dictate who has access to key systems, with full logging capability built in to track any changes or amendments by operators.
11. As a supplier to the National DNA database, FSNI is subject to an annual inspection by FINDS and accredited against their requirements.

Preparation for NI Justice Bill

1. FSNIs ability to meet obligations will be dependent on PSNI system development and successful user acceptance testing.
2. FSNI has redesigned several workflows to facilitate timely sample destruction and DNA profile deletion, from both the local and national DNA databases. Sample storage has been reconfigured to differentiate between material covered by the Criminal Procedure and Investigations Act 1996, which allows samples to be retained for longer periods in line with the provisions of the proposed Bill to facilitate further testing.
3. FSNIs software systems are currently being updated to enable automated deletion requests, which has been estimated as an initial bulk deletion of circa 40,000 subject profiles and a projected monthly deletion rate of 500 profiles per month. Profiles will only be deleted when instruction to do so is received from the PSNI biometrics team.
4. FSNI will sit on the PSNI Biometrics Project Board to enable a joined-up approach for compliance with the new Bill. As the PSNIs forensic service provider, FSNI will advise on the best approach to manage profile deletion requests for both the local and national DNA Databases.

5. Although FSNI operate and manage the NI DNA Database, profile deletion will only occur when notification is received from the PSNI to do so.
6. FSNI will configure its own systems to accept bulk deletion requests from the PSNI biometrics unit and produce a deletion confirmation receipt to evidence compliance with the instruction.
7. FSNI already delete a small number of DNA profiles and associated biometrics from both the NI and national DNA databases. The process is initiated through a deletion instruction from the PSNI biometrics team to remove a DNA profile.
8. FSNI will confirm receipt of the deletion request from the local system and instruct the National DNA Database to delete the relevant profile. The National DNA database will supply FSNI with a deletion confirmation notice when the request has been actioned.

I would like to thank you for the opportunity to brief you today and I hope this has been helpful. Obviously, we are happy to take any questions.

If there are any queries that we are unable to answer today I would be more than happy to take these away and provide follow up responses.

