



**Forensic Science Advisory Council (FSAC)**

Minutes of the meeting held on 29 April 2016  
at Home Office, 2 Marsham Street, London SW1P 4DF

**1. Welcome and apologies**

1.1 The Forensic Science Regulator (FSR/Regulator) Gill Tully welcomed those present to the meeting. See Annex A for the list of attendees and apologies.

**2. Minutes of the last meeting, actions and matters arising**

2.1 The minutes of the last FSAC meeting had already been reviewed by members via e-mail and published on the website of the Regulator.

*Matters arising*

2.2 The actions from the FSAC meeting on 13 November 2015 were reviewed. A number of the actions were either completed or on the agenda to be dealt with in the meeting. The remaining actions were discussed:

- Action 1: Mark Pearse to facilitate Association of Forensic Science Providers' (AFSP) support for a DNA mixture study to explore differences across providers when undertaking DNA analysis and interpretation of mixed DNA profiles following the implementation of DNA-17 chemistries. Mark Pearse informed the group that AFSP would support any future DNA mixtures study.
- Action 5: Katherine Monnery to invite Jeff Adams to the UKAS meeting on the drugs analysis standards. Background to this action was provided; following the introduction of the drugs driving offence a drugs analysis standard had been written to ensure a common reporting method was adopted across Forensic Science Providers (FSPs). However, there had been uncertainty amongst the FSPs as to the interpretation of a number of requirements including what "replicate" meant. It had been clarified that the intent had been for "replicate" to apply to both extraction and analysis. Whilst each provider had validated their methods and been successful in gaining accreditation, to ensure consistency across providers, the standard would be updated with requirements that are clearer. There had also been a challenge to the operation of the offence as to whether tetrahydrocannabinol is controlled under the Misuse of Drugs Act (1971), however as derivatives of cannabinol are clearly covered under the Act, this was not considered to be a robust challenge.
- Action 6: In relation to the draft fingerprint primer for use in courts, the Council

heard that the production of primers for court purposes had been taken over by a committee chaired by Lord Hughes (Justice of the Supreme Court) and supported by the Royal Society. The Regulator had offered her support and will ask that the primers are shared with FSAC prior to being signed off.

- Actions 7&8: For Adrian Foster and Mark Wall to provide the Regulator with examples of good and poor rape cases for the case review pilot. It was reported that none had been found and both agreed to investigate this action further.
- Action 11: UKAS provided an update on the review of the ISO/IEC 17025 standard; the revision is at ISO Committee draft stage. Major changes to the standard were not anticipated however the standard will be updated to reflect changes to technology and reporting and to include options regarding the management system requirements (in line with other ISO 17000 series standards). It had been debated whether the standard could be used by organisations that only carry out sampling (as the current version is used), it is expected that this will continue to be included within the scope. The revised standard is expected to be published towards late 2017/early 2018.

### **3. Guidance and Standards**

#### *Interim guidance for Sexual Assault Referral Centres (SARCs) and Custody for approval*

3.1 The Council heard that once the interim guidance for SARCs and Custody was published it would be implemented with immediate effect. The interim guidance had been developed due to concerns raised that forensic medical examiners were being requested to examine both victims and suspects or multiple victims, in the same case. In addition, a cross contamination incident had been identified as occurring at one SARC where the profile of one victim had been identified on a sample taken from a victim in another case. The consequences of the contamination had been significant and it had not been possible to proceed with the scientific evidence in this case. Since the reported incident, members of the FSR Unit had performed an audit of the SARC and the findings from the audit would be published to maximise learning by other SARCs. An audit had also been commissioned by the NHS.

3.2 A query was raised about section 9.4.2 (a) which states 'Items not suitable for immersion in fluid without damaging them should be thoroughly cleaned using disposable cleaning roll or wipes liberally wetted with a chemical that destroys DNA'. It was suggested that without aiming to limit the detergents which could be used, the chemical and its applications need to be more clearly specified including; efficacy of the chemical and its ability to destroy DNA, the appropriate concentration of any chemical to be used and the time needed for the solution to be in contact with the surfaces for decontamination to be assured.

3.3 Forensic Science Northern Ireland is trialling a monitoring method involving ATP and Stan Brown agreed to circulate a paper on this method.

**Action 1: Stan Brown to circulate a reference paper on a monitoring method which uses ATP.**

3.4 When the SARC standard is published, centres will be able to seek accreditation to ISO 15189. The FSR Unit is working with the Care Quality Commission, which regulates the medical aspects of SARCs, to ensure there are no gaps between the regulatory regimes, and that inspection burden is minimised.

**Action 2: Members to provide feedback on the interim guidance for Sexual Assault Referral Centres and Custody by 13 May 2016.**

*Cell site analysis standard (pilot version) for approval*

3.5 The Regulator had previously expressed concerns about practices in the area of cell site analysis, particularly in regards to bias in the reporting of some cases. A cell site analysis standard had been prepared to be used in an accreditation pilot involving 7 cell site providers, including commercial companies and police. The pilot version of the standard was provided to members for their approval.

3.6 It was highlighted that mapping is mentioned in the document on a few occasions but there is no specifications as to what mapping is actually used for. Analysis or presentation of cell site data using mapping (either digital or paper) must demonstrably ensure that this is carried out using a common Mapping Projection so as to correct any potential distortions in location, area and distance. This can be achieved using a Geographical Information System (GIS) software on which the mapping and the overlying data are analysed and present, however the operator needs to have a good understanding of digital mapping to ensure no anomalous positions are introduced.

**Action 3: Stan Brown to provide text to explain cell site data using mapping to be included in the cell site analysis standard.**

3.7 It was noted that cell site analysis is regularly conducted again from scratch by defence experts, and that this commands a substantial fee through legal aid. The value provided by the complete re-work, as opposed to re-interpretation, should be considered.

**Action 4: Members to provide feedback on the cell site analysis standard (pilot version) by 13 May 2016.**

*Digital forensics validation guidance for approval*

3.8 Members heard that the digital forensics validation guidance had been out for consultation twice and had evoked considerable responses. Where applicable, the guidance had been updated to take account of the comments provided in response to the consultation. With approval from FSAC members the document was ready to be published.

**Action 5: Members to provide feedback on the digital forensics validation guidance by 6 May 2016.**

*Speech and audio forensic services*

3.9 At the commencement of the process of drafting a standard for speech and audio analysis, an open meeting had been held by the previous Regulator for all practitioners in the field, during which there had been unanimous support for a speech and audio standard based on ISO 17025. Since then a draft speech and audio services appendix has been developed and amended by the speech and audio sub-group of the Digital Forensics Specialist Group, in responses to comments made during the consultation. During the consultation, a few practitioners had objected strongly to the standard, and particularly the need for peer review, which they felt was unworkable and unnecessary due to the adversarial process. The Regulator emphasised the importance of the standard and that reliance on defence examinations to pick up fundamental flaws in forensic processes was not acceptable. The Regulator will be speaking at a conference on acoustics and phonetics and will use the opportunity to present the standard again to the community. FSAC members supported proceeding with the standard.

3.10 The Digital Forensics Specialist Group has been closed down in its current form and would be reformed with the skill set necessary to tackle current issues in the area of digital forensics, such as increase in open source analysis.

**Action 6: Simon Iveson to collate a list of FSPs which attended the open meeting on a speech and audio appendix and confirm which attendees responded to the consultation on the appendix.**

*Legal obligations of expert witnesses*

3.11 The Regulators paper on legal obligations of expert witnesses had been published on the website with the aim of increasing awareness amongst FSPs of the criminal procedure rules, practice directions and relevant case law, and to ensure statements and oral evidence complied with these obligations.

3.12 It was queried whether using the word 'legal' was appropriate and whether this excluded other obligations of expert witnesses. However, it was noted that the document had been reviewed on a regular basis by a practicing barrister and distributed widely with colleagues in the judiciary. There were also numerous professional obligations not covered by the document and therefore the use of the word legal was considered appropriate.

*Fingerprint dispute resolution process*

3.13 The fingerprint dispute resolution process would be published as an annex to the fingerprint standard and outlines the process to be followed when a dispute is raised in relation to fingerprint interpretation. The process would ensure that if a dispute is raised in relation to fingerprint interpretation then a panel would be

convened to review the disputed mark and the findings of the panel would be disclosed to the court and to the Regulator.

#### **4. Case Review Pilot**

4.1 The Regulator provided an update on progress of a pilot which aimed to map rape cases right through to the outcome at court. The pilot aims to review whether or not there is an impact of fragmentation and/or poor case strategy on the quality of forensic science provided to the Criminal Justice System (CJS) for rape cases. The Regulator was in correspondence with CPS, to ensure that the pilot was conducted in a manner that was acceptable to all parties; final agreement was expected shortly.

4.2 The preliminary results for the pilot were as follows; out of a total of thirteen cases, nine complainants were medically examined and four were not. The reasons for no medical examination taking place were either refusal from the complainant or because of the time that had elapsed since the rape. Five suspects had been medically examined and forensic testing had been undertaken in ten of the cases. In four of the cases a prosecution was mounted, with the defendant found guilty in two, and not guilty in the other two. In depth analysis is now required in order to answer questions about the forensic strategy; were the right analyses undertaken in the first place, was communication to a sufficient level, was there simply insufficient forensic material present in the first place. The pilot will determine whether a wider review should be undertaken in the future.

4.3 It was noted that Northumbria Police and Crime Commissioner had undertaken a review of rape cases which hadn't resulted in successful prosecutions and the results of this review might be of relevance to the pilot study.

#### **5. Update on Quality Risks**

5.1 Members were invited to review a paper which provided an outline of the most pressing risks to quality in forensic science. The Regulator had previously outlined these risks to the Rt Hon Mike Penning MP.

##### *Digital Forensics*

5.2 The risk in the area is reducing due to a substantial effort in policing which is coordinated by the Digital Portfolio Board under the leadership of DCC Nick Baker. The date set for providers of digital forensic services to become accredited is October 2017. The requirements on providers and UKAS are substantial and whilst this date will not be pushed back, there is a risk that some providers will not be accredited by this date. Therefore, providers and UKAS have been requested to prioritise accreditation for high volume areas where the volume of work would be prohibitive to out sourcing.

5.3 A number of small and medium enterprises (SMEs) do not appear to be committed to gaining accreditation at this point and the Regulator emphasised

that she will be pushing to gain statutory powers quicker in order to ensure compliance amongst providers with the standards.

5.4 It was noted that law enforcement and government agencies might not have specified the requirement for accreditation with sufficient force within their tenders. The Regulator agreed to write to law enforcement agencies to ensure that they are conducting necessary due diligence on their providers to ensure that they are compliant with the standards by the deadline.

**Action 7: Regulator to write to law enforcement and government agencies to ensure that they are conducting necessary due diligence on their providers to ensure that they are compliant with the FSR standards by the deadline of October 2017.**

*Firearms classification*

5.5 The risk in the area of firearms classification had risen due to armourers not appropriately accounting for uncertainty of measurements in relation to the velocity of projectiles. In addition, the calibration certificates for some common chronoscopes appear not to be to any traceable standard. The Regulator has been working with one FSP which is determining acceptable levels of uncertainty with a particular chronoscope. The Regulator has written to DCC Mark Hopkins, as Chair of the NPCC Forensic Portfolio's Performance & Standards Group, to request that measurements outside of these acceptable levels should cease forthwith. As a result, DCC Hopkins has written to all forces and raised the issue of risk with firearms classifications and asked for them to outline the action they intend to take. It is possible that a review of previous convictions might be required, depending on the outcome of the current work on quantifying uncertainty.

*Commissioning not always meeting the needs of the CJS*

5.6 An increase in risk was noted for the commissioning of Forensic Medical Examiners as some were being recruited without a requirement for substantial extra training. The recently published forensic science strategy was discussed and the Regulator's submission to the House of Commons Select Committee had raised the issue that the implementation of the strategy should be led by more inclusive group across the CJS.

*Interpretation standard not yet in place and paucity of data to support interpretation*

5.7 The interpretation standard, which would ensure that all forensic interpretation is covered by the accreditation framework, has been delayed due to limited resources. The risk for interpretation remains the same amid concerns that forensic experts are frequently writing 'in my opinion' in statements without providing the reference data to support that opinion, even though in most situations, a substantial body of literature is available for reference. There are concerns that FSPs may be overly focused on turnaround times and completing cases, to the detriment of keeping up to date with relevant research and literature.

The Regulator had highlighted in her latest annual report that the generation of data to support interpretation is critical yet it is not an activity that has a commercial return on investment. The Regulator had also fed key research requirements on to Home Office officials following concerns raised by the House of Commons Select Committee.

5.8 It was highlighted that forensic experts are not able to access research papers which were developed by the Forensic Science Service but were never published. It was agreed that it should be investigated whether there were research papers within the forensic archive which could be retrieved that would be of benefit to the forensic community.

**Action 8: Jeff Adams to investigate whether there are research papers within the forensic archive which could be retrieved that would be of benefit to the forensic community.**

5.9 There is work on-going to develop standards for DNA interpretation and the work developed so far will be presented to the DNA Specialist Group at its forthcoming meeting. There are sophisticated interpretation models available for mixed DNA samples but they are not widely used and the standard will move towards use of these models as the norm rather than the exception. Minimum standards and guidance will also be developed for the validation of mixture interpretation software.

#### *Contamination*

5.10 Good progress has been made with the central elimination database with around 30 police forces having profiled their officers who are in high risk roles and purged the profiles against the National DNA Database<sup>®</sup> (NDNAD). So far, there have been around 1000 matches against unsolved crimes. The results of this exercise will be beneficial to scene of crime officers to develop their understanding in relation to the reduction of contamination.

5.11 The Regulator and Head of the National DNA Database Unit have written to all manufacturers of consumables outlining the requirement for regular searching of manufacturing staff against DNA profiles generated for the NDNAD, and asking them to highlight any legal or contractual barriers to participation in a manufacturers' elimination database.

5.12 A new international standard ISO 18385 was available for certification of DNA consumables as forensic grade ("DNA free"). In the first instance, there might be self-certification to this standard. In addition, the standard PAS 377 was still available for all other consumables.

5.13 The risk of contamination in SARCs remained high due to reasons discussed earlier and the Regulator had been in touch with the National Police Chiefs Council (NPCC) lead for custody in relation to the interim guidance.

#### *Forensic market instability issues*

5.14 The risk in relation to instability in the forensic market has risen due to uncertainties that exist until a national approach is clarified. Concerns were raised that if a supplier left the market whether another supplier would step in to take over the work. There is also a requirement for legislation to protect the continuity of items and records which might be of value to the CJS, should a supplier leave the market.

5.15 Further concerns were expressed that the industrialisation of forensics had reduced its attractiveness as a career and the profession was experiencing difficulties retaining staff. The current spiral of making cost savings made it difficult to provide a career path for employees. Members thought that the solution was longer term contracts and sustainability so that money could be invested in scientist and science. It was suggested that the tenders for future forensic work should be designed to allow research and development and training.

#### *Toxicology*

5.16 The risks in the field of toxicology had risen due to one supplier duplicating analysis but not the extraction step. This may have an impact on levels of analytical uncertainty, although as the system was validated and accredited, the impact should have been characterised and be relatively low.

5.17 A further issue had risen in relation to a single expert who had been giving evidence which raised concern, particularly in relation to alcohol back-calculation. The Regulator had written to the expert and was waiting for a full response prior to writing to the NPCC lead for road policing.

#### *Legal Aid Agency funding*

5.18 Legal Aid Agency funding is £72 per hour which makes establishing a sustainable and accredited business offering high quality scientific advice, largely to the defence, very difficult.

## **6. Forensic Science Environment**

### *Home Office Forensic Science Strategy*

6.1 The Regulator submitted written and oral evidence to the House of Commons Science and Technology Select Committee's review of the Forensic Science Strategy. The Select Committee had expressed concern that the timeline for statutory powers for the Regulator was not clear and the potential that research and development in forensic science was being compromised. Going forward the Rt Hon Mike Penning MP would be giving evidence to the Committee. Members heard that the Select Committee would be visiting the forensic provider LGC, and also that the Minister wished to visit a FSP. The Association of Forensic Science Providers was invited to ask FSPs whether they would be willing to host a visit from the Minister.



**Action 9: Tom Nelson to ask members of the Association of Forensic Science Providers whether they would be willing to host a visit from the Minister.**

6.2 The introduction of statutory powers for the Regulator was discussed. A suitable parliamentary bill must be identified in order to introduce statutory powers for the Regulator and there is currently uncertainty as to when a suitable bill will be presented to Parliament. It was highlighted that the introduction of statutory powers for the Regulator could be complex and involve the following; defining the scope of forensic science, determination of whether the Regulator should be subject to the Freedom of Information Act and determination of whether the Regulator will have similar powers in the devolved administrations.

*Department of Justice Northern Ireland Forensic Science Strategy*

6.3 Members were provided with an overview of forensic science in Northern Ireland (NI). The executive board for Forensic Science Northern Ireland includes a chief superintendent and a high court judge as a non-executive director. A forensic science strategy has been developed involving all stakeholders which has been agreed and ratified by the CJS in NI. The strategy includes a number of principles for forensic science in NI and an agreement on core services. There is considerable overlap of private and police forensic services with parallel activities and the strategy will propose solutions.

**Action 10: Stan Brown to circulate the Northern Ireland Forensic Strategy when published.**

*Government Chief Scientific Adviser, Sir Mark Walport's, Report on Forensic Science and Beyond*

6.4 The Regulator had met with Sir Mark Walport and they had discussed recommendations made in his report, *Forensic Science and Beyond*. One recommendation was for a forum to be established to provide for discussion between different participants within the criminal justice system. Whilst FSAC might contain the appropriate individuals for such a forum, its focus is to advise the Regulator and Sir Mark Walport had envisaged a forum with a wider scope. Also discussed was how to address the bifurcated model in forensic science (with services paid for by the police but end users are the courts) to create a structure which encourages innovation. Fragmentation in the forensic science landscape was raised and the impact on the use of data and databases with different players using their own data. Finally, the lack of regulation in the civil and family justice systems was discussed, as the Regulator only covers standards within the Criminal Justice System. Sir Mark Walport, would be holding a meeting with the Lord Chief Justice, the Regulator and other members of the judiciary, the Home Office and academics to discuss these issues further.

**7. AOB and date of the next meeting**

7.1 The Regulator had held discussion with the Forensic and Policing Services Association (FAPSA) and the Chartered Society of Forensic Sciences (CSFS),

about how the Regulator can assist small FSPs to reach the standards. An engagement workshop had been held in Birmingham for FSPs who were sole traders or from SMEs to identify the barriers preventing the standards being reached and the resources required to bridge the gaps. Those present at the conference were engaged with the need for standards for forensic science however it had been raised that for some small FSPs, meeting the standards and gaining accreditation would be prohibitively expensive. The CSFS was working with UKAS to develop ways to assist small providers with gaining accreditation; an example might be a central management system for all FSPs to access when gaining accreditation and the Regulator was considering whether she would be able to provide some funding towards this system. The CSFS would need to recover their costs and so FSPs would be charged for the tools which they purchased.

7.2 Members queried whether the Regulator should be contributing towards the funding of a central quality management system and whether this is unfair towards those companies which have already gained accreditation at a significant cost. However, the Regulator noted that accreditation costs proportionately were greater for small companies and her priority was to ensure that all FSPs complied with the standards and until she has statutory powers a range of approaches to encourage this needed to be considered.

7.3 The Psychoactive substances Act 2016 was discussed and the role that FSPs would play in cases involving psychoactive substances. Members heard that the Home Office was organising a methodology for production of evidence on the psychoactive properties of a substance and therefore the FSPs would only be required to identify the compound which was present.

7.4 The group were informed that the Home Office had now published its proposals for the UK to join Prüm, which would allow for rapid sharing of DNA profiles and fingerprints with other countries within Europe which have joined Prüm. The proposed legislation for joining Prüm is complex and is likely to involve the adoption of EU Framework Decision 2009/905/JHA. The Framework Decision is not as clear as might be hoped so the draft legislation provides that guidance may be issued as to the interpretation of the Decision. The likely implement of the legislation is 2017.

7.5 Members heard that the European Union had agreed to push forward with a number proposals in the area of forensic science linked to the concept of the European Forensic Science Area 2020. Documents had been issued which set out the view that accreditation is the route to standard setting, supported by best practice manuals. A number of FSAC members did not agree with this approach as best practice manuals can create arguments in court as there is often not a single best practice approach. The Netherlands Presidency of the EU has arranged a meeting in Amsterdam to discuss these proposals and the Home Office would be represented at that meeting.

7.6 The date of the next meeting is 9 September 2016.

Annex A

**Present:**

Gill Tully (Chair)	Forensic Science Regulator
Mark Bishop	Crown Prosecution Service
Stan Brown	Forensic Science Northern Ireland
Martin Evison	The Chartered Society of Forensic Sciences
Adrian Foster	Crown Prosecution Service
Karen Georgiou (via telecom)	National Police Chiefs' Council
Anya Hunt	The Chartered Society of Forensic Sciences
Kathryn Mashiter	Lancashire Constabulary
Tom Nelson	Scottish Police Authority
Mark Pearse	Association of Forensic Science Providers
Ann Priston	The Chartered Society of Forensic Sciences
Roger Robson	Forensic Access
Lorraine Turner	UK Accreditation Service
Mark Wall	Judiciary

**In attendance:**

Jeff Adams	Forensic Science Regulation Unit (FSRU), HO
Emma Burton-Graham	Science Secretariat, HO
Mike Taylor	Science Secretariat, HO

**Apologies:**

Derek Winter	Coroners' Society of England and Wales
Julie Goulding	Criminal Cases Review Commission (CCRC)
Mark Hopkins	National Police Chiefs' Council (NPCC)
Mohammed Khamisa	Mishcon de Reya