



Annual Report

November 2016 – November 2017

Dr Gillian Tully
19 January 2018

Foreword

Since January 2017 activity in forensic science regulation has been dominated by the impact of the malpractice uncovered at Randox Testing Services (RTS). With such a small team supporting the work of regulation, it is inevitable that other work has been delayed. It is also important to recognise that although the impact of these issues has been large, they arose from the actions of a very small number of individuals and should not be taken as a reflection on forensic scientists more widely. Once police investigations are complete, a more thorough evaluation of the root causes and recommendations for avoiding similar situations can be published, but until then, speculation is unhelpful. Suffice to say that any individual or organisation with concerns about integrity or quality has a responsibility to escalate this concern to me without delay.

It is perhaps inevitable that public confidence in forensic science will be shaken. However, the vast majority of forensic science practitioners, whether working within commercial organisations, government-funded organisations (including policing) or elsewhere, are committed to providing high quality scientific work to support the Criminal Justice System.

Not all of these scientists and practitioners are well supported by the systems within which they work. Continuing downward pressure on cost, which affects both commercial and government-funded organisations, has eroded the time available for professional development and even the availability of scientific literature. This has left individual scientists exposed to potential criticism for failing to keep up to date with scientific developments and for failing to provide the courts with up to date information regarding the range of scientific opinions in their field. Increased workloads caused by rising levels of crime, exacerbated in some areas by terrorist attacks and the Grenfell Tower fire investigation, have resulted in pressure on practitioners over prolonged periods. The tardiness of many organisations in commencing the process of implementing the required quality standards, coupled with insufficient investment of resources to support quality managers and practitioners, has further increased pressure on individuals, as they attempt to meet deadlines for accreditation alongside their day jobs.

Despite the call in 2016 from the House of Commons Science and Technology Select Committee that “*the Government must be clear that, while some police forces may face particular challenges in securing accreditation, there must be no failure to meet the Regulator’s deadlines*”,¹ there has been just such a failure by many police forces in relation to digital forensics. If there were to be a similar failure to meet the standards for fingerprint comparison by October 2018, it would inevitably cast doubt on the competence of policing to deliver quality-assured forensic science. Policing is,

¹ Science and Technology Committee (Commons) 4th Report of 2016–17, *Forensic Science Strategy*, available at: <https://publications.parliament.uk/pa/cm201617/cmselect/cmsctech/501/50102.htm>

however, committed to attaining the standards and I recognise the challenges in achieving fundamental change. In contrast, without statutory backing for my role, a number of small and micro-businesses have chosen, for financial reasons, not to move towards gaining accreditation and those that have met the quality standards have not yet been fully rewarded through the contracting process.

Despite the foregoing paragraphs, there should be no doubt that progress is being made. The number of organisations now able to demonstrate objectively the scientific validity of their methods and the competence of their staff has increased vastly. Many organisations are well on their way to achieving the required quality standards, albeit that is only the start of an ongoing process of improvement. In contrast to a number of other countries, the standards are being applied not only to large laboratories, but equally across the spectrum of service provision, including policing. There are now additional requirements for transparency regarding what standards have or have not been met. Drawing on the requirements of the Criminal Practice Directions, my Code of Conduct has been strengthened and guidance has been issued on declaring whether or not the work in any particular case has been carried out in compliance with that Code. Transparency regarding the limitations of any scientific work presented as evidence is critical, and enables proper court scrutiny. Those not moving towards compliance should be in no doubt that their services will gradually receive fewer commissions and their practitioners will face more challenges in court.

It is easy to criticise and a great deal more difficult to effect change. Over the forthcoming year, I will continue, supported by my team and specialist advisory groups, to support and challenge those working towards achieving the quality standards, in order to build on the progress made thus far.

A handwritten signature in black ink, appearing to read 'G. Tully', with a stylized flourish at the end.

Dr Gillian Tully

Forensic Science Regulator

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Introduction: Updating Risks to Forensic Science Quality

As in previous years, this report starts with an analysis of risks to forensic science quality. In addition to risks, a major issue in toxicology testing was uncovered at Randox Testing Services (RTS) during the year, the impact of which is discussed.

Issues in Forensic Toxicology

In January 2017 the Regulator was informed by RTS that improper manipulation of quality control data had been discovered at its Manchester laboratory. This manipulation was apparently primarily undertaken to give the impression that batches of work that had failed quality checks would instead appear as if they had passed. The consequence was that results were provided to the Criminal Justice System (CJS) when they should not have been – the analysis should have been repeated. Two members of staff apparently implicated in the manipulation were immediately suspended and have since been dismissed. Forensic toxicology work was suspended at the Manchester site.

An extensive investigation into the manipulation was initiated, involving the national accreditation body (the United Kingdom Accreditation Service, UKAS) and the Forensic Science Regulator. Greater Manchester Police (GMP) was also informed and began a major criminal investigation into the matter.

Between January and April the investigations uncovered increasingly extensive data manipulation. In April the Regulator advised the National Police Chiefs' Council (NPCC)-led Gold Group, which is coordinating the police response to the issue, that no results (from the relevant drug analysis methods over the affected period) from RTS from either site (Manchester or Belfast) could be considered to be sufficiently reliable for use in the CJS. As further investigations were carried out, this advice was updated to confirm that the period in which the testing was considered to be unreliable was from November 2013 onwards, and to confirm that there was sufficient confidence in RTS alcohol testing and initial screening of drugs for these activities to be considered reliable.

Following discussions with RTS, the company agreed to fund like-for-like retesting at an independent laboratory. There was sufficient sample remaining for retesting for the vast majority of affected samples. The approximate number of cases affected is 10,000, although in a proportion of these cases, toxicology will have played no part in a prosecution. In such cases, retesting is unlikely to be carried out.

However, it is clear that the limited capacity for forensic toxicology in the commercial forensic science sector means that the retesting process is likely to take 2-3 years to complete. It is anticipated that the highest priority samples (where an individual is in prison or where a court date is imminent) will be completed by mid-2018.

The instability of some of the drugs combined with the different analytical approaches between laboratories means that there is likely to be a degree of difference between the original results and those obtained on retesting. This may have an impact on some cases. A simple example is where degradation of the drug

means that a sample that was, at the point of the original test, in excess of the legal limit, may now be under the limit.

Although RTS held accreditation to the appropriate quality standard, the malpractice was not discovered by the usual quality checks. This raised a number of questions including:

- a. whether or not potential malpractice is more widespread than at RTS, particularly given the movement of staff between forensic service providers; and
- b. whether or not the quality standards need to be strengthened.

The Regulator asked all major forensic science suppliers to the CJS to review their practices and safeguards against the potential for malpractice, and all major forensic toxicology providers to the CJS to conduct a detailed audit of a random selection of cases, to determine whether or not the issues could be more widespread. The results from all of these audits were reported to the Regulator and no data manipulation was found. Clearly each audit was only a small sample of the overall number of samples processed, so if data manipulation is occurring in a small minority of cases, such audits would be unlikely to detect it. However, if data manipulation is occurring at an appreciable level, it would be likely to have been uncovered during this exercise.

The Forensic Science Advisory Council (FSAC) considered a number of measures to strengthen provisions to reduce the risk of malpractice and/or increase the probability of rapid detection. However, no reasonable set of quality standards could guarantee to prevent determined (and potentially criminal) malpractice by skilled but corrupt personnel if this were to occur. The inevitable cost of adding additional safeguards should be balanced against risk.

From October 2017 there has been a pre-planned additional requirement on forensic science providers (whether public sector, private sector or within policing) to demonstrate compliance with the Regulator's *Codes of Practice and Conduct for Forensic Science Providers and Practitioners in the Criminal Justice System*² (the Codes), through a formal accreditation process carried out by UKAS. These Codes contain requirements in relation to data security that are additional to those specified in the international standard (ISO 17025³) against which providers have been accredited for some years. The Regulator and FSAC are continuing to evaluate measures taken in other professions to reduce the potential for malpractice. One such measure is strengthening the whistleblowing provisions. Although there is already provision for anyone to report concerns to the Regulator, there may be no statutory protection under the Employment Rights Act 1996, as amended by the Public Interest Disclosure Act 1998. The Regulator is not a prescribed person under the provisions of s43F of the 1996 Act (see the Public Interest Disclosure [Prescribed Persons] Order 2014) and there is no guarantee that the provisions of s43G would apply. The Regulator will work with the Government to seek to rectify this situation.

² Available at: www.gov.uk/government/publications/forensic-science-providers-codes-of-practice-and-conduct-2017

³ BS EN ISO/IEC 17025:2005 *General requirements for the competence of testing and calibration laboratories*, now replaced by BS EN ISO/IEC 17025:2017.

Whilst it is easier to investigate concerns when they are raised by a known and contactable individual, the Regulator recognises that there may be circumstances when an individual would like to raise a concern while keeping their identity confidential. The Regulator has therefore commissioned work to design an anonymous reporting facility and will produce further guidance on when and how to raise concerns. The Regulator has also approached the Government Office of Science about the potential for research into methods that have proved to be effective and proportionate in preventing and detecting malpractice in other fields.

The accreditation system is predicated on organisations being:

- a. accountable for the quality of their work; and
- b. able to demonstrate through regular audit and through evidence of staff competence and method validity that they are sustainably competent to produce reliable results.

In certain situations it may still be possible for improper data manipulation to be concealed. UKAS has been conducting an internal review into the accreditation of toxicology providers (more widely than in the CJS) and whether any changes to the assessment process could make discovering deliberately concealed manipulation of data more likely. The Regulator is being kept informed of UKAS's findings. One immediate change that UKAS has introduced is to increase the emphasis on 'vertical audit', where the information on specific cases is followed from beginning to end. Vertical audit is more likely to uncover evidence of inappropriate data manipulation than is witnessing of a range of laboratory activities.

The criminal investigation has expanded from RTS to include a now-defunct company, Trimega. RTS had bought laboratory equipment from the receiver handling the closure of Trimega and the suspected individuals had previously worked for that company. There is no indication that any of the individuals were under pressure from RTS management to decrease the number of batches that were repeated, and no indication of any inappropriate incentives at RTS that may have induced the data manipulation activity. When the criminal investigation into the activities of individuals at both companies has been completed, there will be an opportunity to consider in more detail the potential root causes of these actions and the motivation of those concerned, in order to protect the CJS against similar occurrences in the future.

Market-Related Risks

On 10 April 2017 a digital forensics supplier, Forensic Telecommunications Services Ltd, ceased trading. Substantial effort is being expended within policing to retrieve data, but a clear chain of custody may not have been maintained after the company closure. Cases commissioned by defence solicitors and other agencies are also affected.

When considering the potential for suppliers to make either managed or uncontrolled exits from the forensic science market, loss of chain of custody for exhibits and data is a risk, as is loss of the skills base in forensic science in the UK. This has been exemplified by toxicology in the light of the RTS retesting requirements; with 12 fully qualified toxicology reporting officers in England and Wales capable of reporting

casework, the level of resilience is very low. There are other disciplines where the number of skilled reporting officers is limited and there are reports of trainees leaving forensic science before becoming fully competent. With significant levels of work being sub-contracted between providers it is not always clear what impact on the skills base a particular tender award will have. Further work is ongoing within policing and the Home Office to establish contingency plans for supplier exits from the forensic science market. However, ensuring that competitive procurement processes do not drive prices down to the extent that supplier exits are more likely would be a more effective and efficient use of resources than the costly planning and execution of contingency plans following company failures.

Value for money is of course an important and legitimate aim, but achieving the lowest cost does not always equate to the best value for money. Where cost is over half of the weighted evaluation of tender responses, there is a significant risk that the quality of forensic science provision will be compromised. Quality should be seen in a more rounded way than a tick-box qualifying criterion of 'has accreditation' or 'does not have accreditation'.

Although much commentary has surrounded whether a commercial market is the correct model, the Regulator's perspective is that the bigger issue is that too much money has been and is continuing to be driven out of forensic science provision. The Regulator is encouraged that work is being undertaken, under the auspices of the Transforming Forensics programme,⁴ to evaluate the value of forensic science. However, it is unlikely that sufficient data and metrics exist to make an effective evaluation at the present time. Greater focus on value than on cost is urgently required.

Contracts have been awarded to low-cost digital forensics companies, without sufficient due diligence about whether or not they will meet the accreditation deadline. Many have failed to do so, resulting in risk to the CJS and companies that have invested in accreditation being commercially disadvantaged. This is not acceptable, and while the Regulator has been assured that all more recent tenders have required compliance with the standards, there is evidence that *ad hoc* purchasing of digital forensic services from suppliers without the required level of accreditation is continuing.

Providers of forensic medical services have reported to the Regulator that it is not possible to meet the quality requirements within the expected cost envelope for delivery. It is of course incumbent on all suppliers of scientific services to the CJS to ensure that they bid at prices that enable them to deliver work of the required quality. Equally, the cost expectations in procurement exercises must not compromise the provision of a service of the appropriate quality.

Legal Aid Agency (LAA) rates continue to present a barrier to the adoption of standards by defence practitioners, a situation exacerbated by the tardiness of payments to individual experts by a proportion of instructing solicitors. The LAA fees for forensic science work have fallen to between 38% and 73% of their pre-October 2011 levels, depending on discipline, before accounting for inflation. Some providers have attributed their reluctance to participate in a pilot scheme to evaluate the

⁴ Transforming Forensics is an NPCC programme, funded by the Home Office.

effectiveness and proportionality of the standard ISO 17020⁵ to this funding position, and concerns over the costs of adopting the standard. Minimising the cost impact of regulation is of course legitimate, and the cost of accreditation continues to be an issue of concern across the sector. A reduction in costs would be welcomed by all, but there is a need for recognition that forensic science must be funded at a level that enables the standards to be met.

Investment in Quality

With the multitude of competing pressures on senior police leaders such as safeguarding, anti-terrorism and serious crime, it is clear that ensuring quality has sufficient priority and attention has not yet been consistently achieved. There is a substantially different dynamic in large forensic science providers, whose only business is forensic science provision. Whilst it is understandable that senior police leaders have a wide range of priorities, if quality of forensic science provision is of insufficient priority to enable risks to be managed effectively and quality standards to be achieved, the logical result is that it will become unsustainable for any forensic services to be managed within some police forces. A letter has been distributed to all Chief Officers and Police and Crime Commissioners, jointly from the Regulator and Chief Constable Debbie Simpson, the NPCC Forensic Portfolio lead, to highlight the need for sufficient priority to be given to achieving quality standards and the risks of failing to do so.

Policing has not yet established how to provide senior leadership support for areas of forensic science activity that are managed outside what was traditionally considered to be 'forensic services' and quality managers still report a lack of support and influence within forces. These issues are exemplified by the fact that each time a new discipline is assessed for accreditation, many of the problematic issues highlighted when previous disciplines were assessed are occurring again; there is insufficient learning and continuous improvement between the disciplines. In some instances, the same senior officer has signed to acknowledge the issue and need for action in one discipline, only to sign to acknowledge precisely the same issue in another discipline. Not only does this represent a risk to quality, but it is also inefficient and costly.

Accreditation to demonstrate compliance with the Codes was required across a range of disciplines by October this year. At the time of writing (November 2017), 12 police forces in England and Wales have not gained accreditation to the Codes, or a recommendation for accreditation. This is in contrast to large accredited commercial organisations, where all have gained accreditation to the Codes or a recommendation for accreditation.

It is a clear expectation of the courts that expert evidence is presented by people who are indeed experts in their field. This necessitates an up to date knowledge of developments in the relevant field, which in turn necessitates access to scientific literature and sufficient time to ensure that each expert has the current relevant knowledge that they need. It is a specific requirement in the Criminal Procedure

⁵ BS EN ISO/IEC 17020:2012 *Conformity assessment. Requirements for the operation of various types of bodies performing inspection.*

Rules (CrimPR) that experts state the range of scientific opinion on matters within their reports and justify their position within that range. If experts are not up to date with the scientific literature in their field, this requirement cannot be met. It has been reported to the Regulator that access to scientific journals and time for professional development are very restricted or even completely absent within some police forces and some forensic science providers. This is not consistent with the duties of experts or the expectations of forensic science as a profession that takes quality of service seriously.

Digital Forensics

In the Regulator's previous two annual reports, digital forensics was highlighted as a high risk area, because few methods were validated and there was little objective evidence of staff competence. There has been significant progress in this area, driven largely by the requirement to achieve accreditation to ISO 17025 and the Codes by October 2017.

Many methods can now be objectively demonstrated to be fit for purpose, and many staff have been able to demonstrate their competence. However, the majority of organisations failed to achieve accreditation across the range of digital forensics activities undertaken in time for the October deadline, and work is continuing to achieve compliance.

Within law enforcement, the current picture of compliance is as follows:

- a. 12 legal entities (of a total of approximately 46, including police forces, counter terrorism units, regional organised crime units, Her Majesty's Customs and Excise and others) have been granted accreditation for imaging of conventional hard drives, solid state devices and peripheries;
- b. 3 legal entities have been granted accreditation for data extraction and analysis of the same types of drives; and
- c. 6 legal entities have been granted accreditation for logical and physical capture, analysis and processing of data from mobile phones.
- d. 2 legal entities have been granted accreditation for processing and enhancement of CCTV.

Out of around 20 to 30 commercial organisations known to be actively offering services in the CJS, 4 have gained accreditation to ISO 17025 for digital forensics. Of particular concern is the micro-business and sole trader sector in digital forensics. With notable exceptions, many such companies have made no progress towards achieving the standards and have no plans to do so until the Regulator gains statutory powers. The Regulator acknowledges that the costs of gaining accreditation are proportionately higher for smaller businesses. However, whilst there are small business exemptions to regulation in some sectors, the impact of failures in forensic science provided to the CJS can be just as great when made by a sole trader as when made by a large organisation. Arguably, the risks are higher for sole traders, some of whom may not be in regular scientific debate with colleagues and may over time become outdated or even marginalised in their opinions.

Understanding of Quality Across the Criminal Justice System

There is an ongoing risk that quality and quality standards are not fully understood across the CJS. There is a tendency for quality to be seen unidimensionally in terms of accreditation, and for risks to be focused around whether or not accreditation will be achieved in the required timescales. In the meantime, the leadership of some organisations continue to pay little attention to issues such as:

- a. loss of exhibits;
- b. compromise of exhibit integrity;
- c. method failures;
- d. poor performance in proficiency tests; and
- e. internal inconsistencies in reports not being identified.

Accreditation should be only the final, independent check that quality is being effectively managed in an organisation. Instead, some organisations appear to be using the accreditation process as their only real check of performance. A robust quality framework should be in place irrespective of any need for accreditation, in order for an organisation to be proactive in managing the quality of its work.

Quality standards, properly applied, provide assurance of sustainable competence to produce valid results (although they cannot guarantee that there will never again be an error or indeed malpractice). Without statutory powers to enforce compliance, the Regulator cannot guarantee that all science being used in the CJS is being carried out to the required quality standards. The CrimPR and Criminal Practice Directions (CrimPD) set out a firm foundation for the use of expert evidence in the CJS, and if applied rigorously, would further decrease the risk of erroneous results being relied upon in a criminal case. However, there is little evidence thus far that the Rules are being consistently applied. This increases risks that unsound science will be accepted as expert evidence without the requisite scrutiny, and that organisations that have not achieved the required standards will carry on providing scientific evidence without further scrutiny.

Particular issues include inappropriate use of stage 1 streamlined forensic reports (SFR1) in court proceedings; such reports should only be admitted when the evidence is accepted as fact by all parties. It has been reported to the Regulator that some police forces have refused to pay for the scientist to produce an admissible statement of evidence and that extracts from abbreviated reports, which were specifically marked up as being for investigative use and not for evidence, have been pasted into evidential statement format within policing and produced as evidence. Such actions are entirely unacceptable. The police, the Crown Prosecution Service (CPS) and courts all have a role to play in scrutinising evidence and ensuring that the rules of evidence are consistently applied.

In the light of recent Court of Appeal rulings (including *R. v. FNC*⁶ and *R. v. Tsekiri*⁷), there is an increasing possibility of cases being progressed, albeit infrequently, on

⁶ *R. v. FNC* [2015] EWCA Crim 1732

the basis of DNA evidence alone. The potential for contamination or other errors to result in a miscarriage of justice is consequently greater, and it is necessary to consider what, if any, additional safeguards are needed. Given current practices for sample collection, triage and sampling, the reporting scientist may have little or no information regarding the collection and handling of the exhibit prior to a swab arriving in their laboratory. Consideration is therefore being given, by the Forensic Science Advisory Council, to the need for additional information to be provided to the courts by the police.

Whilst work on the Contamination Elimination Database (CED) is proceeding, the refusal of the Police Staff Council to accept mandatory inclusion of high risk staff in the CED is highly disappointing and exacerbates the risk of a contaminating DNA profile being assumed to be evidentially significant.

Priorities

The risk overview was used to update the Regulator's priorities for action. The priorities are given below. Progress against each of these priorities, together with the next steps required, is reviewed in sections 1 to 3 of this report. The sections mirror the aims and requirements for forensic science quality set out by the Regulator in previous annual reports.

Ongoing High Priority Areas of Work⁸

- a. Digital forensics: The Regulator will continue to support and challenge the digital forensics community to achieve compliance with the standards that should have been reached by October 2017 (section 2.2). The Digital Forensics Specialist Group will continue its work to define appropriate standards for network capture and analysis, open source investigations and analysis of communications data (section 1.10).
- b. The Regulator will continue to work with stakeholders in the police, CPS and courts to ensure that scientists are no longer required to give expert evidence on the basis of inadmissible interim or streamlined forensic reports (section 2.9).
- c. Standards for Sexual Assault Referral Centres (SARCs) and custody suites: The Regulator will appoint a new Chair of the Medical Forensics Specialist Group and work towards publication of the delayed standard for the collection of forensic evidence at SARCs for public consultation. Thereafter, the Regulator's Medical Forensics Specialist Group will begin work on a standard for forensic recovery in custody suites (section 1.3).
- d. The Regulator will continue to support the expansion and implementation of the Contamination Elimination Database (section 2.4).
- e. Support for adoption of the fingerprint comparison standard (section 2.6) and the crime scene standard (including fire and collision investigation) will

⁷ *R v. Tsekiri* [2017] EWCA Crim 40

⁸ Not listed in priority order.

continue, as will development of the evaluative interpretation standard (section 1.2).

- f. The Regulator will continue to support the NPCC-led Gold Group managing the aftermath of the data manipulation at RTS. When all the investigations, including the criminal investigation and any resultant legal proceedings are complete, a report detailing lessons learned from the issues at RTS and Trimega will be published.
- g. The NPCC has still not yet implemented an alternative quality framework for a simple classification of firearms, but the Regulator will work with relevant NPCC and National Ballistic Intelligence Service (NaBIS) colleagues to ensure that either it is progressed or accreditation is sought (section 2.3).
- h. Guidance documents for DNA mixture interpretation and for validation of interpretation software have been published for consultation and will be finalised (section 1.6).
- i. The annual pathology audit will be conducted (section 2.5).
- j. Continuing to support developing a less cost prohibitive route for small businesses to reach the standards will continue to be a high priority, as will liaison with the Legal Aid Agency, with the aim of changing the system for selection and payment of experts (section 1.13).
- k. Development of a standard for facial comparison (and/or enhancement of the current standard for video analysis) will continue. There are currently significant limitations to the underpinning scientific basis for elements of facial comparison, and development and implementation of a standard will as a minimum ensure that courts are made aware of the limitations (section 1.8).
- l. Alongside development and implementation of standards, review of the effectiveness of the quality standards will be a priority.

Medium Priority Work

- a. Continuing to ensure quality-related research priorities are articulated and institutions are supported, where appropriate, in funding applications for high quality research in line with these priorities (section 3.2).
- b. Continuing to work with the Home Office Biometrics Programme (HOB) to ensure that validation of the outputs meets the needs of users in the CJS (section 2.10).
- c. Completion of the anthropology and gait analysis standards (section 1.5).
- d. The Regulator will continue to engage with the development of international standards through the technical committee of the International Organization for Standardization (ISO), particularly in relation to development of a standard for forensic grade consumables (section 1.11).

Section 1: Quality Standards in Place for all Forensic Science Disciplines

Requirement 1⁹: That appropriate quality standards are in place for all forensic science disciplines, which apply equally whether the services are delivered by small or large organisations, private companies, public laboratories, police forces or individuals.

1.1. Forensic Science Quality Standards in the UK

During the year from November 2016 to November 2017 the following standards and guidance documents have been published (Table 1).

Table 1: Standards and Guidance Published, November 2016 to November 2017

Publication	Date
<u>Drug driving: use of legal limits</u> FSR-G-221	Guidance published (issue 2) 1 February 2017
<u>Legal obligations</u> FSR-I-400	Guidance published (issue 5) 2 August 2017
<u>Fingerprint examination: terminology, definitions and acronyms</u> FSR-C-126	Code published (issue 2) 16 August 2017
<u>Fingermark visualisation and imaging</u> FSR-C-127	Code published (issue 1) 16 August 2017
<u>Fingerprint comparison</u> FSR-C-128	Code published (issue 2) 16 August 2017
<u>DNA mixture interpretation: draft guidance</u> FSR-G-222	Draft guidance published for consultation 12 September 2017
<u>DNA mixture interpretation software validation: draft guidance</u> FSR-G-223	Draft guidance published for consultation 12 September 2017
<u>Code of practice for forensic anthropology</u>	Draft code published for consultation

⁹ The Regulator's aims and requirements were set out in full in previous Annual Reports, available at: www.gov.uk/government/publications/forensic-science-regulator-annual-report-2016 and www.gov.uk/government/publications/forensic-science-regulator-annual-report-2015.

Publication	Date
	3 October 2017
<u>Forensic science providers: codes of practice and conduct, 2017</u>	Codes (issue 4) published 13 October 2017
<u>Expert report content</u> FSR-G-200	Guidance published (issue 1) 16 October 2017
<u>Non-expert technical statements</u> FSR-G-225	Guidance published (issue 1) 16 October 2017

1.2. Evaluative Interpretation Standard

The development of an evaluative interpretation standard, to ensure that scientists and courts are aligned regarding the interpretation of evidence, whether the interpretation is supported by a large data set or a limited data set, continues to be one of the Regulator's highest priorities.

Despite recruitment delays and extensive abstraction of time to deal with issues arising from the toxicology issues at RTS, a workshop was held in October in order to progress this aim. The workshop was co-chaired by the Regulator and the President of the Royal Statistical Society, Professor Sir David Spiegelhalter. It was attended by statisticians, forensic scientists, legal academics, a representative of the judiciary and the Home Office Chief Scientific Advisor.

Sub-groups considered:

- a. the necessary elements of an interpretation standard;
- b. transparency concerning data sources and limitations;
- c. research requirements; and
- d. issues of uncertainty.

A summary of the workshop has been circulated to attendees for comment and in the coming year, the agreed outline will be developed into a draft standard for wider consultation.

1.3 Update on Sexual Assault Referral Centres Standard

SARC Contamination

The investigation into DNA contamination in a Sexual Assault Referral Centre (SARC) that resulted in samples from two complainants being compromised¹⁰ was completed and recommendations for improvements were provided. Compliance with

¹⁰ *Forensic Science Regulator Annual Report November 2015 – November 2016*, section 1.3b, available at: www.gov.uk/government/publications/forensic-science-regulator-annual-report-2016

the guidance on anti-contamination measures for both SARCs and police custody¹¹ published by the Regulator on 22 July 2016 was included within the recommendations. The majority of the recommendations have already been implemented by the affected SARC and a summary of the findings and recommendations will be published as soon as possible.

SARC Standard and Guidance

In addition to setting out the minimum requirements to be met by providers of forensic medical examinations, the published guidance on anti-contamination measures for both SARCs and police custody¹² should be viewed as a precursor to the more substantive standard for the collection of forensic evidence at SARCs that is under development. All SARCs and custodial facilities should, without delay, implement the provisions of the guidance to the fullest extent possible.

Work to develop the SARC standard and guidance has been delayed due to lack of resources, but will re-commence to produce drafts for consultation during the coming year. However, the Regulator has continued to engage with SARC staff and leaders, through conference presentations and through the Forensic Science Sub-Committee of the Faculty of Forensic and Legal Medicine, in order to ensure that the anti-contamination guidance is understood and applied.

1.4 Update on Toxicology Standards

UKIAFT Guidance for Toxicology

In 2015 there was a public consultation on whether the Regulator should adopt the guidance issued by the United Kingdom and Ireland Association of Forensic Toxicologists (UKIAFT) and, were it to be adopted, what amendments should be considered.

The issues raised in the consultation were discussed with UKIAFT and the guidance was amended. The Codes have now been amended to state that due regard should be given to the guidance. This approach has been adopted because the document is still worded as guidance as opposed to a standard. The Regulator will discuss, with UKIAFT, the options for the next steps with regard to the document.

Drug Driving Standard

In relation to drug driving there are two separate, but linked, pieces of work. The first to be started was the production of a specific standard (FSR-C-133) for analysis for the purposes of s5A Road Traffic Act 1988. This work has progressed well in partnership with the providers of the service but, during its development, issues were raised about the interpretation model employed. It cannot progress until the interpretation model is finalised.

¹¹ FSR-G-207, available at: www.gov.uk/government/publications/sexual-assault-referral-centres-and-custodial-facilities-dna-anti-contamination

¹² FSR-G-207, available at: www.gov.uk/government/publications/sexual-assault-referral-centres-and-custodial-facilities-dna-anti-contamination

The second strand of work has involved meetings with expert statisticians, which have led to the development of an enhanced interpretation model. A consultation document will be sent to the stakeholders to set out the new model and issues related to it. The draft of FSR-C-133 has been updated to reflect the new model and a draft will be issued to stakeholders for comment.

The work in this area has been delayed as a result of resources being diverted to the data manipulation issues in RTS.

1.5 Update on Anthropology and Forensic Gait Analysis Standards

Anthropology Standard

In collaboration with the Royal Anthropological Institute, a draft quality standard for forensic anthropology was developed and agreed by the Regulator's Quality Standards Specialist Group and Forensic Science Advisory Council. The draft standard was published for public consultation, which closed on 4 December. The feedback will be reviewed along with the authors of the document, with a view to finalising the document for publication as soon as possible.

Forensic Gait Analysis Standard

Forensic gait analysis is the observation, comparison and evaluation of gait for use in investigations. However, the practice of forensic gait analysis is not restricted to podiatrists; it is also conducted by clinical and forensic biomechanists. Therefore the term forensic podiatry has been removed from the Codes, which now refer to 'forensic gait analysis' and another sub-discipline of 'bare or socked footprints and wear features of footwear'.

The College of Podiatry and the Chartered Society of Forensic Sciences formed a small writing group comprising forensic podiatrists and a biomechanist and have produced a draft document that details the standards expected in forensic gait analysis. The Regulator is aware of individual podiatrists who believe that they are already suitably regulated; she will work with them to address as many legitimate concerns as possible. However, the College of Podiatry has reviewed the draft and is broadly content that it is suitable. The draft is being reviewed by the Regulator's advisory committees prior to public consultation early in 2018.

1.6 DNA Mixtures Guidance

The documents *DNA Mixture Interpretation Software Validation* (FSR-G-223)¹³ and *DNA Mixture Interpretation* (FSR-G-222)¹⁴ were published for public consultation, which closed on 5 November 2017. Comments were received from both UK and international experts.

The comments have been collated and shared with the DNA Analysis Specialist Group (DNASG) for detailed consideration prior to publication of the final versions.

¹³ Available at: www.gov.uk/government/consultations/dna-mixture-interpretation-draft-guidance

¹⁴ Available at: www.gov.uk/government/consultations/dna-mixture-interpretation-software-validation-draft-guidance

1.7 Legal Obligations Guidance

The legal landscape for expert witnesses in the Criminal Justice System (CJS) saw a major change in 2016 with the change to the Criminal Practice Directions (CrimPD) to require a significant number of declarations to be made as part of a report or statement to be used as evidence. Following discussions with the Office of the Lord Chief Justice and the Criminal Procedures Rules Committee there was a minor clarification to the Directions in early 2017.

The document *Legal Obligations* (FSR-I-400) was updated to reflect the new requirements and issue 5 was published in August 2017.¹⁵

The Regulator commissioned further guidance on the totality of requirements for the content of expert statements and reports following the introduction of the new declaration requirements in the CrimPD. There are a number of cases where issues have arisen as a result of the content or approach to producing reports/statements.

This guidance was published as *Expert Report Guidance* (FSR-G-200) in October 2017.¹⁶

The initial intention was only to deal with the content of expert reports but the discussions at the Forensic Science Advisory Council (FSAC) made it clear that there was also a degree of uncertainty about what should be contained in non-expert technical reports. The Regulator therefore published a related document, *Non-Expert Technical Statement Guidance* (FSR-G-225),¹⁷ in October 2017 to cover this area.

Listing Assistants

Given the importance of the Criminal Procedure Rules (CrimPR) to the work of all experts in the CJS, the Regulator was pleased that Mr Jonathan Solly, Secretary to the Criminal Procedures Rules Committee, agreed to present at her conference this year. Following on from his extremely informative presentation there were a number of questions relating to the operation of the CrimPR.

One of these questions related to the listing of assistants as required by Rule 19.4(e) and the impact this has on certain areas of forensic science. Following the meeting, the Regulator continued to engage with the Committee on this matter and will publish new versions of the legal obligations and statement/report guidance documents if there is a change in the position.

1.8 Facial Comparison Standard

Due to resources being fully deployed on other areas, it was not possible to progress the facial comparison standard during the year.

‘Super recogniser’ is a popular term for an individual who is believed to have above average face processing ability, which may include a greater propensity to remember and recall familiar faces. The Regulator’s input was sought on a review of the work of

¹⁵ Available at: www.gov.uk/government/publications/legal-obligations-issue-5

¹⁶ Available at: www.gov.uk/government/publications/expert-report-content

¹⁷ Available at: www.gov.uk/government/publications/non-expert-technical-statements

'super recognisers', following a case that had been discontinued when the 'identification' made by a 'super recogniser' was found to be flawed.

Work undertaken by super recognisers may have investigative value. However, the Regulator does not consider it to be forensic science for the following reasons:

- a. the work is generally carried out within an operational policing unit, with no separation to ensure independence and impartiality;
- b. photographs of known suspects or offenders are studied *prior to* watching the footage containing unknown individuals, without implementing safeguards against cognitive bias; and
- c. although there is scientific literature to support the fact that some people have a greater propensity to match faces, the 'super recogniser' process of attempting to match faces from photographs against CCTV footage is not based on scientifically validated methodology, nor are error rates known.

The Regulator has flagged to senior judiciary and Home Office officials that the legal basis on which super recogniser evidence is admitted may need to be clarified.

1.9 Revision of the Regulator's Codes of Practice and Conduct

An updated version of the Regulator's *Codes of Practice and Conduct for Forensic Science Providers and Practitioners in the Criminal Justice System* (the Codes) was issued in October. The changes, advance notice of which was given in last year's annual report, included:

- a. incorporating more detail on standards pertaining to occasional experts;
- b. incorporating more detail on the use of infrequently used methods;
- c. stating that all new validations from October 2016 are required to be in the format detailed in the Codes (issue 3 of the Codes had required all validations from December 2011 to be in this format); and
- d. changing the terms 'forensic science providers' to 'forensic units'.

The Regulator had also flagged in last year's annual report that non-compliance with the specified standards would need to be disclosed in statements. The rationale was that non-compliance might reasonably be considered as capable of undermining the case and could significantly detract from the credibility of a forensic science professional. As such, it would be a disclosure requirement under the Criminal Procedure and Investigations Act 1996 (CPIA) and the CrimPR Part 19.

In November 2016 the CrimPD 19B set out a series of declarations that must be included in a report and in March 2017, a clarification of the CrimPD¹⁸ 19B was issued, requiring a declaration of compliance with a code of practice or a code of conduct. This provided a simplified route to deal with the disclosure requirements

¹⁸ The current version of the Criminal Procedure Rules and Criminal Practice Directions can be found at: www.justice.gov.uk/courts/procedure-rules/criminal/rulesmenu-2015

and therefore prompted a review of how this would be achieved within the existing standards framework.

The Regulator's Codes are made up of three parts:

- a. a statement of standards; accreditation requirements;
- b. a code of conduct; and
- c. a code of practice.

In order to allow all practitioners to make the same declaration, the Regulator determined that all should declare compliance to the code of conduct, which was strengthened, and included a cross reference to the statement of standards and accreditation requirements.

There were extensive discussions by the Forensic Science Advisory Council regarding the differences between the disclosure obligations of witnesses making factual statements and those producing expert reports. As a result, the Regulator published guidance giving more detail on the declarations in non-expert technical statements and expert reports.¹⁹

The rationale for holding back publication of the Codes until October 2017 was to maintain a steady state for those already well progressed with compliance with the Codes to work towards. Twenty-six organisations have either added compliance with the Codes to their schedules of accreditation or have been recommended for accreditation since November 2016.

1.10 Standards under Consideration for Digital Forensics

The first tranche of the accreditation requirements focused on activities that occurred at fixed or definable sites within organisations, as opposed to activity at a crime scene. Work to evaluate how the quality of forensic examination of large networks should be assured is being continued by a sub-group of the Regulator's Digital Forensics Specialist Group (DFSG). However, small local home 'networks' sit within the scope of accreditation to ISO 17020 for crime/incident scene investigation, as required in issue 4 of the Codes.

Work is progressing, in a sub-group of the Regulator's DFSG, on appropriate quality standards for open source investigations on the internet. The approach is to:

- a. risk assess the activities conducted;
- b. identify what quality controls already exist; and
- c. identify remaining uncontrolled risks.

This is being facilitated by combining process maps being produced as part of change projects within policing with similar work in non-police law enforcement. This work will continue through 2018.

¹⁹ Available at: www.gov.uk/government/collections/fsr-legal-guidance

The accreditation pilot in cell site analysis stalled as validation studies were proving more challenging than participants had anticipated. The intention is to restart the pilots in 2018 with possibly a greater number of participants to share the burden of validation. If, however, this is not achieved during 2018/2019 as organisations cannot complete the validation then the validation data produced will be reviewed to ensure that there are no substantial risks to the CJS.

1.11 International Standards

The British Standards Institution (BSI) Mirror Committee for Forensic Science (FSM/1), chaired by the Regulator, continues to be the UK's voice in relation to the development of forensic science-related standards internationally, through the International Organization for Standardization (ISO).

This year, the Committee has provided feedback on the two standards under development by the ISO/Technical Committee (TC) 272.²⁰

- a. ISO DIS 21043-1 Forensic Sciences – Part 1: Terms and definitions; and
- b. ISO DIS 21043-2 Forensic Sciences – Part 2: Recognition, recording, collecting, transport and storage of material.

Both standards have reached the final draft international standard (FDIS) stage and will be published in 2018. The UK quality standards framework for forensic science is set out in the Codes. The UK standards already cover the requirements in the new international standards. Therefore the Regulator will not require organisations to be certified against the new standards.

The UK proposed a new work item to the ISO TC 272 Committee for the development of an international standard for forensic grade consumables, based on the Publicly Available Standard 377 (PAS377). This proposal was accepted and the new standard ISO 20964 is now on a 36-month development cycle.

1.12 Update of Fingerprint Standards

The public consultation on the *Fingermark Visualisation and Imaging* appendix was completed and reviewed; the document was published in August 2017.²¹ The *Fingerprint Comparison* appendix²² was reviewed and updated with the addition of two informative annexes. A comprehensive review and substantial additions were made to the *Fingerprint Terminology, Definitions and Acronyms*²³ document to align the terminology with the Home Office *Fingermark Visualisation Manual* (FVM) and biometric terminology used internationally for dactyloscopic search and comparison systems.

²⁰ Available at: www.iso.org/iso/home/standards_development/list_of_iso_technical_committees/iso_technical_committee.htm?commid=4395817

²¹ Available at: www.gov.uk/government/publications/fingermark-visualisation-and-imaging

²² Available at: www.gov.uk/government/publications/fingerprint-comparison

²³ Available at: www.gov.uk/government/publications/fingerprint-examination-terminology-definitions-acronyms

A report by the American Association for the Advancement of Science (AAAS) *Latent Fingerprint Examination*²⁴ was published in September 2017. This report provides an extremely useful review of the scientific underpinning of fingerprint comparison. The report criticised the use of terms such as ‘identification’, which fail to deal forthrightly with uncertainty.

The term ‘identification’ is commonly used in the CJS and was included in the fingerprint comparison appendices to the Codes, albeit with careful qualification of the term. The Regulator’s view is that, particularly in the light of the growing international consensus against its use, continuing to use ‘identification’ risks undermining the substantial progress being made by the fingerprint comparison community towards ensuring that their processes are validated and that limitations are clearly communicated to the CJS. Risks are amplified in the Streamlined Forensic Report (SFR) system, where the term ‘identification’ may be used in an unqualified manner to elicit guilty pleas.

Therefore, the Regulator has asked the Fingerprint Quality Standards Specialist Group (FQSSG) for the community’s considered advice on the use of the term and proposals for wording that better reflects the level of confidence justified by the experimental validation. This is particularly important where comparisons are complex and examiners may legitimately disagree on whether or not there is a sufficiency of detail to conclude that the marks originated from the same individual. However, the Regulator accepts that a major change cannot happen immediately, while organisations are concentrating on gaining accreditation by 2018, so the timing of any alteration in terminology will take into account that deadline.

1.13 Update on Standard for Case Review

The Regulator has identified a gap in the regulatory system relating to case review, primarily as carried out on behalf of the defence. It is clear that some ‘experts’ are being instructed repeatedly (and in some cases paid from public funding) when they are not providing a high quality, independent review service. In some instances, experts have been criticised by courts for their practices, yet they continue to be instructed and continue with similar practices.

Therefore, it is the Regulator’s view that a quality standard is required for case review. However, there is a structural issue with requiring a quality standard in this area at the current time; much of the work is funded by legal aid, which as discussed in the introduction, has reduced markedly for forensic science review in recent years. There is no current requirement placed on instructing solicitors to require any form of quality assurance from providers of defence review, and unless the system were to change, those adopting a quality standard would be at a competitive disadvantage to those not adopting the standard. It is inevitable that the adoption of quality standards has an associated cost, and in a system where the prime determinant of contract award is price, compliant organisations would be at a disadvantage. Furthermore, the adoption of quality standards in general is proportionately more costly for small organisations than large ones, and many case reviewers work in small organisations or as sole traders.

²⁴ Available at: www.aaas.org/report/latent-fingerprint-examination

There are therefore three parallel streams of work.

- a. Discussion with the Legal Aid Agency (LAA) regarding how a quality standard could be recognised and rewarded within the system of allocating work, and the funding increased to enable organisations to meet the costs of compliance.
- b. A pilot study to determine whether or not ISO 17020 is the appropriate standard for case review work, providing a good level of assurance at a proportionate cost.
- c. A pilot scheme being developed by the Chartered Society of Forensic Sciences, in collaboration with the United Kingdom Accreditation Service (UKAS) and the Regulator, to enable small companies and sole traders to, in effect, share costs by using a common management system and share resources for audit and peer review.

The LAA has given assurances to the Regulator that peer review, which is an important quality assurance check, will no longer be disallowed from experts' bills. However, agreement is yet to be reached on if, or how, a quality standard could be recognised and charges made commensurate with the costs involved in high quality, externally assessed case review.

In June, a meeting of interested parties was held by UKAS in order to stimulate participation in a pilot study. Of the five interested parties, two signed up for the pilot. Understandably, some organisations were wary of participating in a pilot accreditation scheme when it is not yet certain that ISO 17020 will be the standard set. Since then, one of the participants has withdrawn and so the Regulator, in consultation with UKAS, has determined that rather than a full-scale pilot with accreditation being the outcome for successful applicants at the end, a 'dry run' will be carried out, such that participating organisations will be assessed free of charge, but the outcome will not be formal accreditation. This exercise will enable the costs and value of accreditation to ISO 17020 to be evaluated, without the financial risk for participants.

Section 2: Full Compliance with Quality Standards

Requirement 2²⁵: That there is full compliance with the quality standards requirements across all forensic science disciplines, from crime scene to court and in all sectors, and that the quality culture has matured.

2.1 Compliance with the Codes

The formal requirement for accreditation to include the Regulator's *Codes of Practice and Conduct for Forensic Science Providers and Practitioners in the Criminal Justice System*²⁶ (the Codes) was made in 2014. In March 2016 the Regulator announced

²⁵ The Regulator's aims and requirements were set out in full in previous Annual Reports, available at: www.gov.uk/government/publications/forensic-science-regulator-annual-report-2016 and www.gov.uk/government/publications/forensic-science-regulator-annual-report-2015.

²⁶ Available at: www.gov.uk/government/publications/forensic-science-providers-codes-of-practice-and-conduct-2017

that the scientific standards set out in the Codes would form part of the assessment for all accredited organisations from October 2016 onwards. At the time of writing, 19 organisations are accredited to the Codes, and 10 have recommendations to extend the scope of their accreditation to incorporate the Codes. A further four organisations have assessments in progress or scheduled, whilst seven withdrew from the process during the assessment when it became clear that they were insufficiently prepared.

During the year from October 2016, 23 Codes accreditation visits were carried out by the United Kingdom Accreditation Service (UKAS) and over 700 nonconformities were raised. The areas with the greatest number of findings were related to (in descending order):

- a. control of data;
- b. business continuity;
- c. test methods and validation;
- d. accommodation and environmental conditions;
- e. handling of items; and
- f. personnel/code of conduct/training.

Within control of data, findings included the absence of data back-ups, a lack of documentation relating to reference databases and auditing, poor security (for example, shared user log-in on computers) and a lack of restrictions for accessing folders.

In relation to business continuity, findings included inadequate business continuity plans or testing of such plans, a lack of information on sub-contractors, and a lack of awareness of business plans by key staff.

Test methods and validation findings included that, whilst validation was occurring, this validation was not in the format required by the Codes. In addition, incomplete risk assessments were identified, as was a lack of staff access to validation libraries. This standardised format is not a bureaucratic hurdle. It was put in place because of the criticism by the House of Commons Science and Technology Select Committee in 2005²⁷ that *“The absence of an agreed protocol for the validation of scientific techniques prior to their being admitted in court is entirely unsatisfactory. Judges are not well placed to determine scientific validity without input from scientists.”* This criticism was reiterated by Mr Justice Weir in the Omagh bombing trial.²⁸ The validation protocol is risk-based and designed to avoid unfocused testing, which may not answer the relevant questions in relation to reliability and limitations of a method.

Findings pertaining to accommodation and environmental conditions included a lack of contamination elimination databases; where such databases were present insufficient security restrictions were applied to them. In addition, in some

²⁷ *Forensic Science on Trial*, House of Commons Science and Technology Committee, Seventh Report of Session 2004–2005.

²⁸ *R. v. Sean Hoey* [2007] NICC 49.

organisations, rooms were not locked when unoccupied, and access control to rooms was not sufficiently stringent.

In relation to handling of items, findings included a lack of policies concerning tampering and issues with disposal of biological material.

UKAS found that general technical requirements, such as appropriate security clearance and the level of staff knowledge of the Codes, was not always adequate. Furthermore, there were concerns relating to the software being used by forensic units, some of which was no longer supported by the supplier, and little of which allowed step by step auditing of all changes applied to raw data.

Assessment against the Codes added significant cost to the accreditation process, with costs for well-prepared organisations being in the region of £7,000 and for organisations that were ill-prepared and required additional visits being in the region of £17,000. These additional costs are expected to be significantly lower in the remaining years of each accreditation cycle. Taken as a whole, the picture of non-compliance in 2016/2017 against the standards published in the Codes in 2011 demonstrates clearly that unless a formal and in-depth external assessment is carried out, many organisations will continue to fail to meet the required standards. Given the issues in toxicology discussed in the introduction, ensuring that there is appropriately restricted and audited access to data and physical exhibits, and a full understanding of the standards expected, is critical. Similarly, given the market risks also discussed in the introduction, having inadequate business continuity arrangements cannot be justified by any organisation committed to the provision of high quality forensic science.

2.2 Update on Compliance with Digital Forensics Standards

In last year's annual report, the Regulator warned that few organisations would attain the required scope of accreditation by October 2017, despite the substantial effort expended in policing. The required scope of accreditation was broad and included accreditation to the Regulator's Codes of Practice and Conduct.

By the deadline of October 2017 there had been 17 grants of accreditation for aspects of digital forensics within 12 legal entities, covering a proportion of their digital forensics activities. This number continues to increase. The National Police Chiefs' Council (NPCC) digital forensics portfolio is leading a plan to increase the number of law enforcement agencies with accreditation and the scope of that accreditation. Although the increase from 1 force with any digital forensics accreditation to 16 in 18 months is impressive, it is far from what is required; with around 46 legal entities within law enforcement requiring accreditation, there is a long way to go.

The progress in the commercial sector is even less impressive; only four commercial sector organisations currently (as at November 2017) hold accreditation, and one of those has not achieved accreditation to the Regulator's Codes of Practice and Conduct. Those commercial organisations with accreditation feel, quite rightly, that they are at a price disadvantage in competing for contracts relative to organisations, which to date have been unwilling to invest in the resources to achieve the required quality standards. The Regulator reiterates that statutory powers are needed to

compel such organisations to comply. In the interim, contracts must not be awarded to organisations that do not comply with the required standards.

2.3 Update on Firearms Classification

Issue 3 of the Regulator's Codes stated that the requirement for simple classification and triage of firearms was either accreditation to ISO 17025, or an alternative framework to be implemented by October 2016. No agreed alternative framework was put in place by the NPCC by that date, but discussions are now underway with Assistant Chief Constable (ACC) Kay (NPCC lead for armourers) on an alternative model. ACC Kay is working with experts from the National Ballistic Intelligence Service (NaBIS) and police forces to develop a proposal. This is tied to a substantive piece of work on the future of firearms examination, which has been funded by the Home Office. In the light of this work, a revised date of October 2018 has been set for implementation of the alternative framework, but no further delays will be accepted.

2.4 Update on Contamination Elimination Database

During the year significant progress has been made in transitioning police officer profiles from the Police Elimination Database (PED) to the Contamination Elimination Database (CED). This project is led by the Forensic Information Databases Unit (FINDS) of the Home Office. However, several police forces, most notably the Metropolitan Police Service, have a long way to go in reviewing their PED records to ensure that DNA profiles from relevant officers can be transitioned to the CED. This delay has been due to lack of resource, but cannot be allowed to continue. The reality of DNA contamination is amply illustrated by the fact that over 1,300 DNA profiles that were previously thought to have been related to a crime have thus far been identified as potential contaminants originating from police officers.

Most disappointing has been the refusal of the Police Staff Council, even in the light of this evidence of contamination, to agree to mandatory inclusion of all staff working in roles where they have a high risk of contaminating DNA samples. The regulations for police officers have already been changed to ensure mandatory compliance, so the disparity is highly regrettable and raises the risk of police staff DNA profiles being mistaken as 'crime-related' profiles. Whilst local arrangements are mitigating some of the risk, particularly in relation to Crime Scene Investigators (CSIs), not all risks are controlled for custody staff. Those forces whose police staff are not represented by the Police Staff Council also need to ensure that local arrangements are put in place for inclusion of staff on the CED.

A pilot to evaluate the processes for inclusion of staff from Sexual Assault Referral Centres (SARCs) has been initiated and will progress during the year.

Inclusion of staff from manufacturers of consumables remains a priority and is being progressed by FINDS staff.

There has been an IT problem with the CED since July 2017, which has held up purges of new CED profiles against an extract of unsolved crime scene profiles taken from the National DNA Database and hence also regular searching of the CED. This situation is ongoing with no resolution date. The Home Office IT supplier

must increase priority of this issue and find a resolution in order that confidence in the system is not lost.

2.5 Update on Forensic Pathology

Code of Practice

The *Code of Practice and Performance Standards for Forensic Pathology* was published (in partnership with the Royal College of Pathologists, the Home Office and the Department of Justice in Northern Ireland) in 2012.²⁹ The Regulator's Forensic Pathology Specialist Group (FPSG) has completed a comprehensive review of the document. The proposed modifications have been discussed with the British Association in Forensic Medicine and the Royal College of Pathologists.

A new version of the Codes is due to be published in early 2018.

Excited Delirium

The use of the term 'excited delirium' as a cause of death has been the subject of some criticism in other jurisdictions. As a result the matter was considered by the FPSG. This consideration was timely as the matter was raised in the *Report of the Independent Review of Deaths and Serious Incidents in Police Custody* by the Rt Hon Dame Elish Angiolini DBE QC.³⁰

Following work in the FPSG and discussions with the Royal College of Pathologists and British Association in Forensic Pathology guidance on the use of the term will be issued in early 2018.

Audit

The 2016 audit of the work of forensic pathologists focused on two areas of work. The first related to bodies recovered from water. The second related to bodies repatriated from abroad.

The audit process operated normally and the report will be published early in 2018.

The 2017 audit is underway and will consider two areas. The first is a death where the forensic pathologist took over the case from a non-forensic pathologist and the second is the next case conducted by each pathologist thereafter. This will ensure a broad coverage of death types and ensure that all pathologists are able to submit two cases for the audit.

Legal Issues in Forensic Pathology and Tissue Retention

The document *Legal Issues in Forensic Pathology and Tissue Retention* has been updated to reflect changes in coroners' law. It has also been modified to address issues that have arisen in some recent cases. The publication has been delayed

²⁹ Available at: www.gov.uk/government/publications/standards-for-forensic-pathology-in-england-wales-and-northern-ireland

³⁰ Available at: www.gov.uk/government/publications/deaths-and-serious-incidents-in-police-custody

while seeking legal views but the plan is for the new version to be published early in 2018.

2.6 Fingerprint Comparison Compliance

The compliance deadline for accreditation to ISO 17025 and the Codes for fingerprint comparison is October 2018. To facilitate preparation by organisations the Regulator sponsored two accreditation workshop events that were delivered by the Scottish Police Authority and were well received by the participants. As part of the workshop, a survey was conducted as to where organisations were on the accreditation process timeline; this revealed the possibility that a number of police forces would miss the October 2018 deadline. The NPCC Forensic Science Portfolio's Fingerprint Lead, Deputy Chief Constable (DCC) Rachel Swann, is leading police efforts to gain accreditation and currently reports that forces are assessing their readiness for accreditation as 'green'. However, forces assessed thus far have found that much additional work was required. UKAS has scheduled accreditation visits for all organisations requiring assessment before the deadline. The Fingerprint Quality Standards Specialist Group (FQSSG) will advise the Regulator on progress as part of its ongoing work programme.

2.7 Sole Traders and Small/Micro-Businesses

The scheme being led by the Chartered Society of Forensic Sciences (CSFS) in relation to assisting small businesses has been described in section 1.13. Whilst this is initially being trialled in relation to case review, it is likely that it will be helpful to small businesses across the spectrum of forensic science disciplines. The leadership role of the CSFS in this area is highly valued, in supporting both higher quality and the needs of members working on their own or in small groups.

2.8 Complaints and Investigations – Update from Last Year's Report

Referrals of Quality Issues During the Year

There has again been an increase in the number of issues referred this year and the complexity of those issues. A total of 65 matters concerning quality have been referred to the Regulator. Of these, 26 were self referrals. The issues were categorised as low, medium or high risk. There were 14 regarded as high risk (of which 4 were self-referrals), 28 at medium risk and 19 low risk. There were also 4 issues raised that were outside the scope of the Regulator's role. A comparison to the figures provided in last year's annual report is set out in Table 2.

The continuing increase in referrals may seem problematic but it is in fact a positive indicator. With the increase in areas falling subject to regulation and an increased understanding of the quality issues there will be more referrals to the Regulator. Quality failures that are not recognised as such or are not appropriately dealt with are much more problematic than those which are found, reported and investigated, with actions taken to prevent recurrence.

Table 2: Referrals to the Regulator

Classification	2014-15	2015-16	2016-17
High	7	9	14
Medium	16	34	28
Low	10	13	19
Outside Scope	3	1	4
Total	36	57	65

The Regulator's response to the issues raised has varied depending on the nature of the issue raised and the potential consequences. This year the responses included:

- a. working with the forensic units involved to identify what occurred and what steps had been taken to address the issues;
- b. commissioning reviews of the cases involved by external experts;
- c. publishing new, or modified, standards and guidance to address the issues identified; and
- d. working with providers, the police, Government departments and the CPS to address issues raised.

Issues at Randox Testing Services

The numbers of referrals themselves do not provide the complete picture. Some of these are relatively quick and easy to deal with; others can involve a significant amount of work and take a long time to address. In the latter class is the self-referral by Randox Testing Services, which has absorbed a very significant amount of the total resource available to the Regulator. This issue is detailed in the introduction.

Review in Relation to Stephen Port

In 2016 Stephen Port was convicted of the murder of four young men in London. The four deaths were not initially treated as suspicious and this has been the subject of public comment. The Independent Police Complaints Commission (IPCC) is considering the investigation of the deaths and in last year's annual report, the Regulator indicated her intention to review the forensic science and forensic pathology aspects of the investigations.

The Regulator has provided the IPCC with an interim report on the subject and will, when additional material is disclosed, provide a final report.

It is perhaps noteworthy that recent publicity surrounding the inquest into Poppi Worthington's death also pointed to a failure to secure and analyse scientific evidence.

2.9 Streamlined Forensic Reports

The use of streamlined forensic reporting (SFR) is intended to be a pragmatic approach to presenting scientific, and other, expert evidence to the Criminal Justice System (CJS) in a way that should allow the rapid identification of matters in issue between the parties. This, in turn, should allow the CJS and providers to focus resources in addressing the issues that require expert input and avoiding nugatory work in areas of agreement. The SFR process is, therefore, rightly supported by key stakeholders.

A number of problems, however, have been identified with the process.

Defence practitioners and scientific experts relied on by the defence do not appear to fully appreciate the operation of the system. The Regulator understands there have been presentations to representatives of the defence organisations. This is a very positive step and greater engagement with the defence can only be a positive development. However, changes to the SFR forms to provide the defence with a clearer understanding of what is required of them have not progressed as fast as might be hoped.

The SFR process is based on the provisions of the Criminal Procedure Rules (CrimPR), which allow the summary of an expert's evidence to be provided to the other party to seek agreement. It is important to recognise the CrimPR demand that prior to expert evidence being deployed in court a report satisfying the requirements of Part 19.4 of the CrimPR is served on the other party. It is absolutely clear that no witness should be summoned to court on the basis of a summary provided in a SFR1 form. The Regulator has been informed by forensic science providers that, on a regular basis, scientists are summoned to give evidence on the basis of a SFR1. It is troubling that those charged with the operation of the CJS cannot recognise, and manage, such a simple limitation.

More worryingly, the Regulator has been informed by a number of suppliers that, when a scientist was summoned to court on the basis of an SFR1, the provider asked the police force involved for approval to prepare an evidential report (an SFR2 or an evidential statement) to comply with the Rules and ensure that the scientist was appropriately prepared when attending court, but that request was refused. As a result the providers have, in some cases, created the required reports at their own cost. This is completely unacceptable.

The Regulator has therefore directed the providers to bring such cases to her attention. She will raise such cases directly with the Chief Officers of the forces involved to seek an effective solution.

If these issues cannot be sensibly addressed there is a significant risk that support for the SFR process will diminish. Indeed, if they are not addressed, the Regulator will engage with HM Government and the Criminal Procedure Rules Committee to see what changes to the CrimPR can be made to ensure that the process operates properly – or not at all.

2.10 Home Office Biometrics Programme

The Home Office Biometrics (HOB) programme is developing technology to replace legacy systems for storage and comparison of fingerprints, facial images and DNA. During the year the Regulator supported the HOB programme in understanding the requirements for validation, as set out in the Codes; workshops were held with a cross section of experts, including fingerprint user communities, on 1 February and 22 March 2017, to assist end users to articulate system requirements to enable them to achieve compliance with ISO17025 and the Regulator's Codes for fingerprint comparison.

A wider consultation was undertaken and a paper summarising recommendations and requirements was submitted to the HOB Programme Board in July. The paper confirmed that many of the requirements identified were already covered within the scope of the HOB programme. NPCC representatives on the HOB Programme Board accepted responsibility for progressing the out of scope requirements; these will be considered as part of the Transforming Forensics programme.

2.11 Statutory Powers

The role of the Forensic Science Regulator was proposed in HM Government's response to the 2005 report *Forensic Science on Trial*³¹ by the House of Commons Select Committee on Science Technology and was created in 2007. It was established under the Royal Prerogative without any statutory basis or direct powers to enforce standards.

In 2011, in its report *Forensic Science Service*,³² the Committee recommended statutory powers for the Regulator. The response by HM Government agreed to keep the position of statutory powers under review.

In 2013, in its report *Forensic Science*,³³ the Committee again recommended statutory powers for the Regulator. This included a recommendation that the matter should be addressed by March 2014. In its response to the report³⁴ HM Government announced that it had launched a consultation on a statutory basis for the Regulator. The Government's response to that consultation, published in 2015,³⁵ explained that the support for statutory powers was very high and that the matter would be addressed in the forensic science strategy to be published by the end of 2015.

³¹ Available at: www.gov.uk/government/publications/forensic-science-on-trial

³² Available at: <https://publications.parliament.uk/pa/cm201012/cmselect/cmsctech/855/85502.htm>

³³ Available at: <https://publications.parliament.uk/pa/cm201314/cmselect/cmsctech/610/61002.htm>

³⁴ Available at: www.gov.uk/government/uploads/system/uploads/attachment_data/file/264054/8750.pdf

³⁵ Available at: www.gov.uk/government/consultations/new-statutory-powers-for-the-forensic-science-regulator

In the *Forensic Science Strategy*, published in 2016,³⁶ the Government stated that it would:

“Develop proposals to give the Forensic Science Regulator statutory powers, put the current remit and the associated Codes of Practice on a statutory basis and enable the Forensic Science Regulator to investigate non-compliance where necessary.”

In response to a Parliamentary question in November 2017 the Minister for Policing and the Fire Service stated:

“The Government is committed to giving the Forensic Science Regulator statutory powers as soon as the parliamentary timetable allows.”

The Regulator understands that officials within the Home Office have been working on a draft bill and pursuing ways to introduce the bill to Parliament. However, it is disappointing that, given the length of time this issue has been under consideration, the level of support for statutory powers and the pressing need for these powers to be introduced, the bill is not part of the Government’s legislative programme.

Section 3: Shared Understanding of Quality and Standards

Requirement 3³⁷: That there is a shared understanding of quality and standards by all stakeholders, including commissioners of forensic science, expert practitioners, researchers and all end users, including the police, the prosecuting authorities, defence and courts.

3.1 Promoting Adoption of Standards

In order to make the case for the adoption of standards, and to ensure that both the need for standards and the timetable required by the Regulator are clear to all, a continued priority has been speaking to as many forensic experts, practitioners and relevant managers as possible. The Regulator has given numerous presentations to practitioners and stakeholders at conferences, meetings and seminars (Table 3), and has been represented by officials giving presentations at meetings and workshops (Table 4). The Regulator also co-authored an article in *Counsel Magazine*, to highlight quality standards and regulation to the barrister community.³⁸

Table 3: Presentations delivered by the Regulator

Presentation Title	Event
Contamination Issues and Anti-Contamination Practice	Havens Update Day London, December 2016

³⁶ Available at: www.gov.uk/government/publications/forensic-science-strategy

³⁷ The Regulator’s aims and requirements were set out in full in previous Annual Reports, available at: www.gov.uk/government/publications/forensic-science-regulator-annual-report-2016 and www.gov.uk/government/publications/forensic-science-regulator-annual-report-2015.

³⁸ Available at: www.counselmagazine.co.uk/articles/good-match

Presentation Title	Event
Forensic Science Quality and Regulation	Criminal Bar Association Old Bailey Lecture London, February 2017
Quality Standards for Evaluation of Forensic Evidence	Biometrics Working Group London, February 2017
Forensic Science Update	St Mary's Sexual Assault Referral Centre Conference Manchester, February 2017
Quality Challenges for Forensic Genetics	Genetics in Forensics London, March 2017
Quality Standards and Implementation of ISO 17020	Hampshire Scientific Services Conference Netley, April 2017
Forensic Science Quality, Regulation and Risks	Medico-Legal Society Lecture London, April 2017
Quality and Standards in Forensic Science	Forensics Europe Expo London, May 2017
Setting, Monitoring and Maintaining Standards	Chartered Society of Forensic Sciences Education and Industry Forum Birmingham, May 2017
Forensic Science – Issues for Healthcare Professionals	Faculty of Forensic and Legal Medicine 11th Annual Conference Belfast, May 2017
Forensic Science Quality, Regulation and Standards: A UK Perspective	Netherlands Forensic Institute Expert Meeting The Hague, June 2017
Forensic Science Quality, Regulation and Standards: A UK Perspective	Presentation to visiting Colombian delegation London, July 2017
Forensic Science Quality Standards: Why and How?	British Measurement and Testing Association event to support the needs of the forensic science community in gaining accreditation

Presentation Title	Event
	London, July 2017
Forensic Toxicology: A Discipline in Crisis?	United Kingdom and Ireland Association of Forensic Toxicologists Annual Conference Oxford, September 2017
Forensic Science Quality, Regulation and Standards: A UK Perspective	Presentation to visiting Turkish delegation London, October 2017
DNA Contamination: Risks and Opportunities	Presentation to Police Staff Council London, October 2017
The Importance of Validation	Chartered Society of Forensic Sciences Validation Workshop Birmingham, October 2017
Forensic Science Quality and Regulation	Bond Solon Expert Witness Conference London, November 2017

Table 4: Presentations by Forensic Science Regulation Unit officials representing the Regulator

Presentation Title	Event
Contamination: The View from the Forensic Science Regulator	The Royal Society of Medicine London, 21 January 2017
Home Office Biometrics and ISO17025 Workshop (s)	Home Office Biometric programme and fingerprint user communities London, 1 February 2017 London 22 March 2017 (follow up)
Fingerprint Comparison Accreditation (Two Workshops)	Fingerprint leads and practitioners Manchester 8 and 9 June 2017

Regulator's Annual Quality Conference

The Regulator held her annual conference on 8 March 2017, concentrating again on strengthening forensic science quality. This theme was explored through presentations from a range of perspectives across the Criminal Justice System (CJS).

Michael Mansfield QC spoke from the defence barrister's perspective about:

- a. the human element in forensic science;
- b. the potential for bias; and
- c. the need for forensic scientists to be proactive and vocal in standing up for provision of high quality, robust forensic science.

Detective Inspector Ian Iliffe of West Midlands Police gave an investigator's perspective on developments in DNA and fingerprints, with particular reference to Operation Cantata³⁹.

Laurie Elks, a former Commissioner of the Criminal Cases Review Commission (CCRC) spoke of a range of errors in scientific evidence in cases examined by the CCRC, in order that lessons from these cases could inform future improvement.

Karen Alexander, representing the Body Fluid Forum (BFF) of the Association of Forensic Science Providers, gave an overview of the collaborative studies undertaken by the BFF to support forensic scientists in the evaluative interpretation of biological evidence.

Finally Jonathan Solly, Secretary to the Criminal Procedure Rules Committee, spoke about the Criminal Procedure Rules, the Criminal Practice Directions and the legal obligations for expert witnesses.

The conference supported the charity SOS Silence of Suicide, which was founded by Michael Mansfield and his partner Yvette Greenway and of which the Regulator is now a trustee. Further information can be found at: www.sossilenceofsuicide.org

3.2 Research Priorities from a Quality Perspective

The Regulator's highest priorities for research remain as stated last year.

- a. To underpin the scientific basis of methods such as facial comparison, where research is limited.
- b. To provide data and robust interpretation methods to support the effective evaluation of evidential significance. Such data may include, for example:
 - i. structured studies on the transfer and persistence of trace evidence and the significant factors affecting such transfer; or
 - ii. the frequency of occurrence of patterns (for example, fingerprint characteristics or the characteristics of gait), or the impact of wear on marks.

Interpretation methods can drive optimal structuring of required data collections, and enable combinations of factors such as class characteristics in a way that can be validated and demonstrated to be robust.

³⁹ Operation Cantata concerned the 2015 murder of Ronald Smith. DNA evidence played a major part in the investigation of Paul Cooke. Cooke was convicted in 2016 of the murder of Ronald Smith and was sentenced to 28 years in prison.

3.3 Encouraging Research in Forensic Science

This year, the Higher Education Funding Council for England (HEFCE) has been reviewing the structure of the Research Excellence Framework (REF), ahead of the next planned exercise in 2021.

Along with the Chartered Society of Forensic Sciences (CSFS) and others, the Regulator has engaged with HEFCE to consider how academic research in forensic science could be more effectively recognised and assessed within the REF framework.

There are differing views on whether having a unit of assessment (UOA) specifically for forensic science would be the ultimate solution to the relatively low profile of forensic science research in a proportion of academic institutions. For REF 2021, it has been agreed that institutions will be strongly encouraged to highlight forensic science research by use of a new 'tag' in submissions: *"In a similar approach to the interdisciplinary research identifier, the forensic science identifier will help to ensure appropriate assessment – this could be, for example, via cross-referral, the use of joint assessors, or existing expertise on the panel in which the outputs are submitted. Additionally, it will generate a quality profile for all forensic science outputs that will be combined in the main panel overview reports with a section on forensic science submissions, thereby increasing the visibility of outcomes for this area of research."*⁴⁰

Of course academia is not the sole source of research and development in forensic science. Falling income has constrained the level of research undertaken by forensic service providers in both public and private sectors, but the Regulator would like to highlight the work of the Association of Forensic Science Providers' (AFSP) sub-group, the Body Fluid Forum (BFF), which is continuing to conduct collaborative exercises to gather data to inform interpretation of body fluid evidence in the context of case circumstances. The Regulator joined a meeting of the BFF in February 2017; despite heavy workloads of BFF members, there is a commitment to work towards publication of the outputs of this work.

Providers of instruments, consumables kits and software also contribute substantially to the research landscape, as do international networks such as the European Network of Forensic Science Institutes (ENFSI).

The Regulator recently met with Julie Maxton, CEO of the Royal Society and Chair of the Science and the Justice System Forum (see section 3.4) to discuss what role that forum could play in stimulating research activity to meet the needs of all elements of the CJS.

3.4 Engagement Across the CJS

The Regulator has continued to engage with stakeholders across the CJS including:

- a. professional bodies, in particular the CSFS, the Faculty of Forensic and Legal Medicine and the College of Podiatrists;

⁴⁰ Available at: www.ref.ac.uk/publications/2017/decisionsonstaffandoutputs.html

- b. learned societies including the Royal Society and the Royal College of Pathologists;
- c. bodies such as the AFSP;
- d. policing, via the National Police Chiefs' Council Forensic Science Portfolio and its sub-groups, and the Transforming Forensics Executive Review Board;
- e. the CCRC;
- f. the senior judiciary;
- g. the Crown Prosecution Service (CPS);
- h. Home Office Ministers and officials; and
- i. academic institutions and the HEFCE.

During the year, a new Home Office governance group, the Forensic Policy Steering Group, has been formed. This Group has met only once, so it is too early to judge if it will be effective in shaping future policy.

There has also been the inaugural meeting of the Science and the Justice System Forum, chaired by Julie Maxton, CEO of the Royal Society, which has involvement from across the CJS.

Routine/Administrative Report

Reappointment of the Regulator

Dr Gillian Tully was reappointed as Regulator for a second three-year term from November 2017 to November 2020.⁴¹

General Data Protection Regulation and Data Protection Bill

The General Data Protection Regulation (GDPR) (Regulation (EU) 2016/679) was adopted on 27 April 2016 and becomes enforceable from 25 May 2018.

The Data Protection (DP) bill applies GDPR standards and is progressing through Parliament.

Officials are in discussions with relevant departments to determine the impact of the bill and, if necessary, what can be done to mitigate any unhelpful impacts.

Work will commence early in 2018 to review the Regulator's data and processes for compliance.

⁴¹ The re-appointment was announced in a Written Ministerial Statement (WMS) by Baroness Williams on 14 November 2017. A mirror WMS was made in the House of Commons by the Rt Hon Nick Hurd MP.

Resources

The Home Office allocated the following resources to the Regulator for the financial years 2016/2017 and 2017/2018 (Table 5).

Table 5: Resources allocated to the Regulator

	Financial Year 2016/2017	Financial Year 2017/2018
Administration budget (staff pay, travel, accommodation, etc.)	£290,000	£374,684
Programme budget (developing standards and forensic pathology audits)	£257,170	£150,000
Total Budget	£547, 170	£524,684
Staffing: Regulator (full time equivalent [FTE])	0.6	0.6
Officials: Specialist scientific roles (FTE)	3	3 plus 1 vacancy
Secretariat support		Part of 2 FTEs

During the past year, resources have again significantly limited the work of regulation, particularly in the light of the substantial extra work generated by the issues at Randox Testing Services. However, the Regulator is pleased to note that two extra members of scientific staff have been recruited by the Home Office to support her work. Subject to pre-employment checks, it is anticipated that these new members of staff will start work in the spring of 2018. The Regulator is also working increased hours since reappointment, with the flexibility to modify time commitment, with agreement of Home Office officials.

Acknowledgements from the Regulator

I would like to thank all of the Chairs and members of my advisory groups for their unpaid but much appreciated work to advance standards in forensic science. During the last year, Gary Pugh OBE of the Metropolitan Police Service stepped down as Chair of the Fingerprint Quality Standards Specialist Group (FQSSG) and was replaced by Gary Holcroft from the Scottish Police Authority. I would like to pay tribute to Gary Pugh for his leadership of the Group as it worked to develop the fingerprint standards and bring about their implementation, and to welcome Gary Holcroft to the role. Professor Jack Crane has recently retired from the Forensic

Pathology Specialist Group after many years helpful contribution, so particular thanks are due to him.

I am grateful to the organisations representing forensic science units for their constructive engagement. Particular thanks are due to the Chartered Society of Forensic Sciences, the National Police Chiefs' Council Forensic Science Portfolio and the Association of Forensic Science Providers.

I am also grateful to the Royal Statistical Society for its contribution to collaborative development of an interpretation standard and development of an enhanced interpretation model for drug driving. The Faculty of Forensic and Legal Medicine has been very helpful in continuing to develop the evidence base and guidance for sample collection in relation to sexual assaults and in working with me to promote adoption of anti-contamination measures. I was very pleased to accept an honorary fellowship from the Faculty during the year.

I would also like to thank all those who have brought quality-related issues to my attention over the year; reporting of issues, risks and errors is critical to effective improvement in standards.

My thanks to all who gave their time in reviewing guidance documents and standards published for consultation and providing helpful feedback.

Above all, my work could not continue without the invaluable efforts of the Forensic Science Regulation Unit: June Guinness, Simon Iveson and Jeff Adams. In addition to bringing their specialist knowledge and skills to bear, they are always working exceptionally hard behind the scenes, to ensure that contracts can be procured and paid for and that the unit is functioning on a day to day basis and integrating with Home Office support areas. Our remit is large and the team is very small, so it is a testament to their commitment that the work of regulation continues apace.

My thanks to the Home Office Science Secretariat, Pathology and Regulation Services for secretariat and administrative support and to Priscilla Richards for juggling my diary and travel arrangements. I am also grateful to Alastair Bayliss and Britta Guerke, who have acted as my press officers over the course of the year, independently from their Home Office press roles. This year, I have been fortunate to have the expert assistance of Dean Jones and Martin Allix from the Home Office Pathology Delivery Unit in carrying out a review into issues surrounding the use of forensic science and forensic pathology in the murders perpetrated by Stephen Port.



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