Dr Gillian Tully, Forensic Science Regulator – Written evidence (FRS0057)

Nature of Submission
I make this submission in my role as Forensic Science Regulator. I am an independent public appointee, sponsored by the Home Office. My role is to ensure that the provision of forensic science services to the Criminal Justice System (CJS) is subject to an appropriate regime of quality standards.

Summary
1. This submission concentrates on the quality of forensic science provision. Quality standards, when appropriately drafted and effectively implemented, address the prerequisites for reliable science. Accreditation to the standards provides assurance that organisations are sustainably competent to produce reliable results. However, it can never guarantee that every particular result in every case will be reliable; there is always the human factor. Sources of error, or deliberate malpractice, can never be completely eliminated, no matter how robust the quality system.

2. Many organisations providing forensic science services in the UK have achieved a mature quality culture, in which errors are escalated and become a source of learning and the rationale for ongoing quality checks is appreciated and supported. But this cannot yet be said for every provider. Courts and other end users cannot be entirely confident in the reliability of scientific evidence until all providers can demonstrate compliance with the standards.

3. Quality standards are now in place for the majority of forensic disciplines. The most pressing gap is the absence of an agreed standard for evaluative interpretation. This standard has now been drafted and is based on the four general criteria of balance, logic, robustness and transparency.

4. For gaps in compliance with quality standards to be eliminated, my role needs to be given statutory enforcement powers. Courts must enforce compliance with the provisions governing expert evidence contained in the Criminal Procedure Rules and Criminal Practice Directions. Prosecution and defence legal representatives must ensure full disclosure and undertake proper scrutiny of scientific findings and expert opinions in every case. Implementing these safeguards would reduce the risks posed by unreliable science to the proper administration of justice.

5. There are fundamental problems with the stability and sustainability of forensic science provision, resulting in lack of capacity in some disciplines, loss of expertise and lack of investment in quality, innovation and training. Cultural challenges, including resistance to change, problems with commissioning and a lack of understanding of quality, standards and reliability by a range of CJS stakeholders should not be underestimated.

Evidence

Q1. Is forensic science contributing to the delivery of justice in the UK?

6. Forensic science makes a significant contribution to the delivery of justice, but there are insufficient metrics to enable a data-driven assessment.
Forensic science contributes in numerous ways, including but not limited to:

a. Assisting with determining whether a crime has occurred (e.g. in fire investigation, collision investigation or evaluation of whether an item is a prohibited firearm);

b. Assisting the investigation/prosecution of crime by:
   i. supplying names of potential suspects, derived from DNA or fingerprint database searches;
   ii. including or eliminating individuals from further investigation;
   iii. determining the nature of substances (e.g. drugs or noxious substances or toxins);
   iv. providing links between different events (e.g. through DNA, fingerprints, digital or drug profiles);
   v. providing evidence of association between people, items or events.
   vi. providing evidence to exonerate the innocent.

7. A number of referrals to me have indicated that ineffective commissioning of forensic science has resulted in a less effective contribution to the delivery of justice than could have been the case. This issue is discussed further in the response to question 2.

Q2. What are the current strengths and weaknesses of forensic science in support of justice?

Strengths
8. Professional, skilled and dedicated forensic scientists, notwithstanding gaps in capacity noted below.

9. A framework of quality standards is in place. These, when complied with, provide assurance of sustainable competence to produce reliable results and reduce the likelihood of errors remaining undiscovered. No framework can prevent error: case by case scrutiny is still required.

10. The legal obligations placed on experts and the framework for admissibility of expert evidence in England and Wales, as codified in the Criminal Procedure Rules (CrimPR) and Criminal Practice Directions (CrimPD), provides a framework for assessment of admissibility and reliability of evidence in every case. There is interest in forensic science from the senior judiciary.

Weaknesses
11. There is a lack of strategic leadership and clearly understood policy and strategy for forensic science in E&W.

12. There is not full compliance with the quality standards or the legal frameworks across the Criminal Justice System (CJS).

13. In addition to lack of compliance, systemic weaknesses include the following.
a. Shortfall in capacity, particularly in forensic toxicology and digital forensics.

b. Lack of investment, and in some quarters, lack of leadership in:
   i. quality;
   ii. innovation; and
   iii. training and development.

c. Loss of experience, with:
   i. newer scientists not being given the development required to become leaders or even to understand the value of evidence types outside their own specialism;
   ii. experienced scientists leaving the profession and not being replaced; and
   iii. limited expertise for defence review.

d. Resistance to change, particularly in fields such as fingerprint comparison, where the move from an “expert” declaring “an identification” to a more transparent system with objective measures of competence, contemporaneous note-taking and scientific evaluation of the occurrence of errors is proving arduous.

e. Commissioning of forensic science not consistently undertaken to address the needs of the CJS, posing a significant risk. This has included, in some instances:
   i. contracts awarded with cost rather than value for money as the major determinant;
   ii. scientists being directed to carry out a specific test on a specific item to address a very narrow question as opposed to using their experience to consider the significance of the scientific evidence in the case;
   iii. restrictions on what is submitted for analysis for financial reasons: limiting effective interpretation of findings;
   iv. submissions designed to find evidence in support of the prosecution case as opposed to seeking the optimum scientific input;
   v. admissible evaluative reports not being commissioned; and
   vi. different parts of same case submitted to different providers with no responsibility assigned for the generation of an overarching assessment of all aspects of the evidence.

f. Commissioning, often by the defence, of individuals who are not experts and have been subject of judicial criticism combined with a legal aid system that does not recognise or reward quality.

g. Procurement of services (e.g. forensic medical examination) not taking account of established quality standards, leading to increased risks of contamination and of complainants/suspects being failed.

h. A lack of understanding of quality, standards and reliability by a range of CJS stakeholders.
Q3. What is the scientific evidence base for the use of forensic techniques in the investigation and prosecution of crimes? Are there any gaps in that evidence base?

14. Gaps in the scientific evidence base include the following, which I articulated in recent Annual Reports as research priorities.

   a. The scientific basis of methods such as facial comparison, where research is limited.

   b. Provision of 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 factors affecting such transfer; and
      ii. the frequency of occurrence of patterns (for example, fingerprint characteristics or the characteristics of gait), or the impact of wear on marks.

These priorities reflect a need to move from an opaque subjective opinion-based approach for disciplines such as (but not limited to) fingerprint comparison to validated probabilistic approaches.

15. Compliance with quality standards would reduce the risk of methods with significant gaps in the underpinning science being used in the CJS. In response to the comments in *Forensic Science on Trial*¹ 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.”, a protocol for scientific validation of methods was published in my Codes. Compliance with this protocol includes characterising the performance and limitations of each method and is a requirement for gaining accreditation. However, full compliance has not yet been achieved and will only be achieved if statutory enforcement powers are given to my role.

Q4. How can the Criminal Justice System be equipped with robust, accurate and transparent forensic science? What channels of communication are needed between scientists, lawyers and the judiciary?

16. My response to question 8 considers how the CJS can be equipped with robust and accurate forensic science.

17. Considering transparency, the legal obligations on expert witnesses require (a) a degree of transparency and (b) a declaration of compliance to a code of practice or conduct (CrimPD V 19B). Those not adhering to quality standards must highlight this to the court allowing consideration of (a) the admissibility of evidence and (b) the respect to be given to that evidence. However, the situation could be improved.

   a. There must be a high standard for transparency which should include experts being required to provide an accurate and balanced

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1 *Forensic Science on Trial*, House of Commons Science and Technology Committee, seventh report of session 2004-2005
statement of their training, experience, expertise and reception by the courts.

b. There must be robust enforcement of the CrimPR and CrimPD with effective sanctions (against experts, parties and lawyers) for non-compliance.

c. There must be a process to deal with experts criticised by the courts.

d. There must be means to prevent unsuitable individuals acting as expert witnesses. These should be coupled with sanctions for not meeting the required standards.

e. The appropriateness of defence being able to ‘hide’ expert evidence should be reconsidered.

18. In relation to communication channels, my Forensic Science Advisory Council (FSAC) is invaluable in bringing together stakeholders in the Criminal Justice System (CJS). It provides advice and challenge to me in relation to quality standards and quality related issues. The Council includes representatives of:

a. the Judiciary;

b. the Crown Prosecution Service (CPS);

c. the Criminal Bar Association (CBA);

d. the Association of Forensic Science Providers (AFSP);

e. the National Police Chiefs’ Council (NPCC);

f. the Chartered Society of Forensic Sciences (CSFS);

g. the United Kingdom Accreditation Service (UKAS);

h. the British Association in Forensic Medicine (BAFM);

i. Scottish Police Authority (SPA) Forensic Services;

j. Forensic Science Northern Ireland (FSNI); and

k. the Criminal Cases Review Commission (CCRC).

I would welcome requests from any CJS stakeholder for FSAC to consider an issue requiring cross-CJS communication.

19. There is useful dialogue between senior stakeholders. I have valued constructive meetings with the previous and current Lord Chief Justices of England & Wales and with the President of the Queen’s Bench Division (PQBD). The CPS is represented at policy level on all of my advisory groups and a meeting between with the Director of Public Prosecutions is
planned in September 2018. There is regular communication between my office and the Criminal Procedure Rules Committee.

20. However, broader dissemination of my work in establishing quality standards and their impact to reach regional courts, local prosecutors and defence solicitors and barristers has been more difficult. Attempts have been made to improve understanding through:

a. information provided for a lecture to the Judicial College in 2018;

b. a lecture by the Regulator as part of the CBA’s Old Bailey education and training lecture series in 2017; and

c. papers in academic legal publications\(^2\) and in Counsel magazine\(^3\).

21. My annual conference provides an opportunity to increase communication from the legal community to forensic scientists. In recent years, there have been addresses from Lord Hughes of Ombersley (JSC), HHJ Mark Wall QC, The Rt Hon. Sir Brian Leveson (PQBD) as well as from CCRC commissioners, the Secretary to the Criminal Procedure Rules Committee and prominent legal professionals including Michael Mansfield QC. However, there are few fora for forensic scientists to address the judiciary and legal professions.

Q5. What is the level of understanding of forensic science within the Criminal Justice System amongst lawyers, judges and juries? How can it be improved?

22. The understanding of forensic science amongst lawyers and judges appears, from transcripts and judgements, to be variable. Judgements have on occasion demonstrated a lack of understanding of the process of scientific reasoning. In addition, appreciation of the requirement for adherence to my quality standards appears limited; this may be exacerbated when only streamlined forensic reports are issued. It can be presumed that the understanding among juries is critically dependent on how well the scientific evidence is presented in any particular case.

23. The Royal Society and the Royal Society of Edinburgh have led a project initiated by the previous Lord Chief Justice of England and Wales to produce judicial primers, setting out the agreed science in a range of disciplines. One aim of these primers is to increase the level of understanding of forensic science, at least at judicial level. It will be important for the primers to be kept up to date and for there not to be divergence between the primers and quality standards.

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Q6. Is the current training available for practitioners, lawyers and the judiciary appropriate?

24. I have commented on training for forensic science practitioners in my responses to questions 2, 7 and 15.

25. With respect to training for legal professionals, I believe legal training should include a module on scientific methodology and quality assurance. To train legal professionals on the specifics of forensic science methods would be ineffectual, as methods change over time. However, if legal professionals possessed basic tools to enable them to evaluate whether an expert had adopted a valid scientific approach and ensured that the method was appropriately controlled to assure reliable outcomes then they would be in a better position to assess the evidence and evaluate whether review by another scientist was required.

26. Inclusion of regular courses on scientific methodology and quality standards for forensic science into the training provided by the Judicial College would be a step forward, as would increased judicial involvement with the Chartered Society of Forensic Sciences and their regular conferences.

Standards and regulation

Q7. Is the current market for forensic services in England and Wales sustainable? Are changes needed to ensure forensic science provision is maintained at the level required? What are the risks of a market approach, for example what happens if a provider goes out of business? And what is the impact on quality?

27. The market for forensic services is not sustainable in its current form. There are very low margins and, in many contracts, no guaranteed levels of work. In my response to question 2, I listed systemic weaknesses in the system and these all apply to the approach across policing and the commercial market; they are weaknesses caused by the current approach to a mixed economy of police and commercial provision with insufficient funding for either.

28. The lack of capacity in some areas, notably toxicology and digital forensics, is a direct result of the current approach. In toxicology, some suppliers have stated that despite the capacity shortfall, it is not worth investing in training more staff or buying more equipment because of the extremely low prices. In digital forensics, there is no clear message regarding what is required of the commercial market, with many police forces building internal capacity and using commercial suppliers as “overflow”. This situation is not conducive to investment and capacity building.

29. Some scientific disciplines are at risk of being lost from England and Wales. Demand for a range of trace evidence types has reduced greatly, with DNA, footwear and digital forensics generally being prioritised. In many cases, this is entirely appropriate but in some a carefully considered case strategy would include, for example, consideration of fibre transfer. Specialist services may not be needed frequently but the current approach
risks their complete demise. Different models of forensic science delivery have allowed these specialities to be maintained.

30. Issues with ineffective commissioning were discussed in question 2, and are relevant here.

31. Several providers have gone out of business in recent years, including:
   a. the Forensic Science Service in 2012;
   b. Contact Traces in 2015; and

Further, Key Forensic Services (KFS) entered administration in 2018 causing substantial disruption to the supply chain and financial input from policing being required. There is evidence of financial instability in several other providers, particularly in the digital sector.

32. In relation to an uncontrolled market exit, the risks to the CJS are amplified and include:
   a. loss of continuity of exhibits;
   b. degradation of exhibits (e.g. if electricity were to be cut off);
   c. disruption to production of reports for individual cases;
   d. lack of capacity in the remaining market;
   e. further loss of skills from the profession, particularly among the more experienced staff, some of whom have been made redundant more than once;
   f. loss of records that are not case-specific (e.g. records of training and competence of staff, records of calibration and maintenance of equipment);
   g. loss of corporate memory, whereby the terminology and detail enabling case files to be understood and methods re-created are lost; and
   h. disruption to defence examination in cases, when equipment used can no longer be inspected.

33. The disruption caused by loss of one supplier, even for a period of a few months, was illustrated by KFS entering administration. When KFS was unable to accept new business, the impacts included:
   a. the number of submissions from each police forces being capped – rationing of forensic science, particularly in relation to toxicology, which meant that cases which could have yielded scientific evidence were never examined;
b. increased pressure on remaining forensic science providers, with some evidence of an increased error rate;

c. increased turn-around times for the remaining forensic science providers;

d. increased cost for the remaining forensic science providers, due to the need to rely on overtime;

e. impacts on staff morale; and

f. financial impact on police forces as KFS was supported through a wind-down to prevent a catastrophic unmanaged exit.

Q8. Is the system of accreditation working successfully to ensure standardised results and the highest quality analysis and interpretation of significance of evidence?

Quality, Quality Standards, Risk, Assurance & Accreditation

34. To evaluate the system of accreditation, it is important to set out an understanding of quality and what part accreditation plays in the process of ensuring forensic science is of high quality.

35. Any high quality service must satisfy the user’s requirements. In forensic science, there is a range of stakeholders that could be defined as users: police investigators, prosecutors, defence solicitors and counsel, complainants, defendants, judges and juries. Each may consider that their requirement is slightly different: police investigators may initially require rapid results suitable for investigative purposes followed by the minimum level of further work for a successful trial to be pursued, while a complainant or defendant may want every possible scientific avenue to be explored. Although policing pays for the majority of forensic science, that science must, as far as practicable, meet the needs of the whole CJS to be considered high quality. Users at every level should expect balanced, logically coherent, robust and transparent forensic science. It is to achieve these quality pillars that quality standards have been defined.

36. Modifying a generic definition, quality standards are details of requirements, specifications, guidelines and characteristics that [forensic science] should consistently meet in order to ensure:

a. its quality matches expectations

b. it is fit for purpose

c. it meets the needs of its users

37. It is my role to set quality standards for forensic science. These standards are illustrated in annex 1 and the groups advising me in the development and adoption of standards are shown in annex 2. There is broad

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4 Association of Forensic Science Providers; Standards for the formulation of evaluative forensic science expert opinions; Science and Justice; 49; (2009); 161-164.

5 From nibusinessinfo.co.uk
international consensus on the applicability of the generic international standards ISO 17025\(^6\) and ISO 17020\(^7\) to forensic science. The international guidance document ILAC G19\(^8\) sets out an internationally agreed explanation of how the generic standards should be applied to forensic science, from crime scene through to reporting to a court.

38. In England & Wales, there is an additional quality standard for forensic science: my Codes of Practice and Conduct (the Codes). These Codes consist of three sections.

   a. A Code of Conduct, to which providers of forensic science should declare compliance (or non-compliance) in accordance with the requirements of the Criminal Practice Directions\(^9\).

   b. A statement of standards and accreditation requirements, which sets out the quality standards that apply to each forensic science discipline and the date by which compliance must be achieved.

   c. A Code of Practice, which provides requirements for forensic science in this jurisdiction, mapped to the requirements of the international standards ISO 17025 and ISO 17020, and sets out specific additional requirements such as for data security and a detailed protocol for validating forensic science methods. This was developed (by my predecessor as Regulator) specifically in response to the comments in *Forensic Science on Trial\(^10\)* 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.” For some disciplines where additional standardisation is necessary, appendices to the Codes have been published.

39. The standards are set at a level such that any organisation adhering, in totality, to the standards will have the sustainable competence to deliver high quality forensic science. It will have demonstrably competent staff, the appropriate environment and well maintained and calibrated equipment. It will use valid methods that are fit for the defined purpose to which they are applied, will have systems and processes to ensure proportionate quality checks are made and that any errors or complaints are investigated to identify the root cause and take improvement action.

40. This does not equate to that organisation never making a mistake: processes that include or are designed by humans are inherently fallible. However, errors or near misses will not be ignored but will be used as opportunities to improve. Sectors such as digital forensics which, prior to

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\(^7\) ISO/IEC 17020:2012 General Criteria for the Operation of Various Types of Bodies Performing Inspection.

\(^8\) International Laboratory Accreditation Cooperation; Modules in a Forensic Science Process; ILAC-G19:08/2014.

\(^9\) Part 19B of the CrimPD.

implementing the required standards claimed that errors did not occur, now report a range of near misses and actual failures where incomplete or incorrect information has been provided into the CJS. The requirement of the standard is that unexpected results are investigated and corrective measures are put in place. Issues that might in the past have been written off as one-off human errors are now resulting in process changes to reduce the likelihood of reoccurrence, or increase the likelihood of error detection.

41. Organisations adhering to the standards will not all use the same methods, systems and processes – the standards provide a baseline of quality, not a “standardised” way of performing a particular test. To attempt to standardise each method would be exceptionally difficult to achieve in a competitive market or where some organisations are bound by public procurement rules. It would also be undesirable as it would become a block to innovation.

42. Independent, external assessment of adherence to the international standards and the Codes is achieved through the process of accreditation, performed, in the UK, by the United Kingdom Accreditation Service (UKAS). Accreditation should be the final, external check that the organisation is in full control of its quality and adheres to the standards. Accreditation does not, nor can it, completely prevent errors. Accreditation is awarded following an assessment, which is a sampling exercise: not every procedure will be evaluated on every visit. However, often organisations that believe they are compliant are found to be far from it at their accreditation assessment visits. The knowledge that the system will be externally assessed each year is a clear driver to maintain focus on quality.

43. The difficulty in assuring the quality of all forensic science is that the quality of the end to end process depends not only on how well each part of that process is carried out, but also on how the system operates as a whole. Was the scene attended at all? If so, what samples were selected? How effective was the forensic case strategy? Were the right questions asked of the scientist(s) and were they given access to the requisite samples and information? Or were they constrained to analysing a single DNA swab without context? These issues are explored further in paragraph 13.e. A more integrated crime scene to court approach would help to address these risks.

**Impact of Quality Standards & Accreditation**

44. In assessing whether the system of quality standards and accreditation is effective in assuring high quality forensic science, one measure is the level of change that has been effected. When UKAS raises a “non-conformity” during an assessment visit, the organisation must address the finding before accreditation can be granted. This means that reviewing the findings raised across all organisations assessed in an area can give a picture of the impact that accreditation has had on the quality improvement. It does not capture the changes made by an organisation as it works towards the standards, so underestimates the total level of improvement. Three case studies are useful in this regard. The first concerned accreditation to the Codes and was detailed in my last Annual Report.11
45. The second relates to digital forensics. There was a requirement for the majority of digital forensics work to be accredited to ISO 17025 and the Codes by October 2017. Progress has been very slow and the level of compliance is still poor, but the changes effected in the organisations that have gained accreditation have been significant. Some in the community argue that ISO 17025 is the wrong standard for digital forensics, preferring instead either no standards or ISO 27043 and related standards. ISO 27043 cannot be used as the basis for independent accreditation, as the provisions are not mandatory and cannot be used to evaluate the competence of a service: it is essentially a good practice guide. A selection of the main findings to date from accreditation assessment visits follows, illustrating that external accreditation against the more comprehensive ISO 17025 standard is necessary to effect fundamental change in the way digital forensics is delivered.

   a. Lack of detail in contemporaneous notes, which in combination with lack of detailed procedures means that it is difficult to review what analysis has been undertaken, the reasons for inclusion/exclusion of data and factors that would affect reliability or uncertainty in the outputs reported.

   b. Limited evidence to support staff competence other than attending training courses or a statement of the number of years of experience.

   c. Peer review of the work is limited and does not provide assurance that data have not been missed.

   d. Method validation is inadequate.

   e. Limited objective evidence to provide assurance that the organisation is producing reliable results.

Since 2015 approximately 30 organisations have been accredited for digital activities including imaging of computer media, analysis of computer media, mobile phone examinations, satellite navigation system examinations and CCTV. This demonstrates that ISO 17025 is achievable for digital forensics. A recent case before the Court of Appeal illustrated the types of failures that can occur and hence the requirement for compliance with robust standards.

46. Fingerprint comparison bureaux must gain accreditation to ISO 17025 by October 2018. It is anticipated that the majority of bureaux will fail to meet this deadline. Of the first 12 bureaux visited, 8 were so far from meeting the standard that accreditation could not be offered. The remaining 4 bureaux were offered accreditation, conditional on completing corrective actions. Given that the quality standard for fingerprint

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13 R v Sanjay Rai [2018] EWCA Crim 618
comparison was set in 2014 with a compliance date of 2017, there has been ample time to implement the necessary changes and ensure that methods were appropriately validated. It is therefore disappointing that the range of findings raised by UKAS included the following:

a. lack of objective evidence of competence of fingerprint experts;

b. documentation of methods not sufficient to ensure consistent application;

c. insufficient or ineffective use of proficiency tests;

d. insufficient scientific validation of methods;

e. quality assurance regime not evidence-based or giving adequate assurance;

f. contemporaneous note-taking insufficient to provide traceability;

g. risk of cognitive bias not always effectively managed;

h. results expressed without clarifying their status as opinion, not fact; and

i. errors not always investigated and/or effective action taken.

47. Each of these findings will precipitate further change towards compliance and so the process of setting standards and requiring external verification of compliance is acting as a catalyst for major change. The change has a cost associated with it: bureaux are finding that their productivity is lower as a result of taking contemporaneous notes\(^{14}\) and performing quality checks. However, these are basic requirements of good science and ought to have been in place from the outset. A false view of “efficiency” was the historical norm; from a quality standards point of view, the historical norm would be described as “cutting corners”.

48. The “cost of quality” is a significant part of the overall cost of delivery of forensic science. It can be considered in two categories:

a. the cost of implementing systematic quality management; and

b. the costs of accreditation (charged by UKAS).

49. Systematic quality management includes training and continuous professional development, objective competence assessment on an ongoing basis, method documentation and validation, quality assurance measures including routine blind checking of results and participation in proficiency trials, a programme of internal audits. It is difficult to argue that any of these measures is not necessary, but all carry a cost.

\(^{14}\) The lack of contemporaneous notes in fingerprint examination was robustly criticised by the Court of Appeal in 2011 – see \textit{R v Smith} [2011] EWCA Crim 1296
50. The costs charged by UKAS are dependent on the level of effort expended; they are charged per day. UKAS estimates, for each assessment, the number of days’ effort to enable its team to undertake an assessment of sufficient detail to enable a confident judgement regarding whether an organisation is compliant with the standard. In a well-prepared organisation, a single visit from the assessment team will suffice and a relatively small number of non-conformities is raised, requiring evidence of improvement action to be submitted to UKAS for accreditation to be granted. In a poorly prepared organisation, there can be many non-conformities raised, of sufficient seriousness that an additional (expensive) assessment visit is required. In assessing compliance with the Codes, two similarly sized organisations with similar scopes of accreditation were charged £7000 and £17000 respectively by UKAS. The difference was due to one organisation being well prepared and compliant with the standards, whilst the other was far from compliant at the time of the first visit.

51. For small/micro businesses and sole traders, the total “cost of quality” is a higher proportion of turnover than for larger companies. I have carefully considered whether there could or should be some form of exemption from compliance with the standards for small businesses. Is there a lower risk to the CJS from poor forensic science carried out in a small rather than a large company? In simple numerical terms, yes: the small company will perform less casework. But the impact of poor quality forensic science on any particular case is not proportionate to the size of the company delivering it. Considering the users of forensic science, from police investigators to prosecutors, counsel and courts, should there be a lower expectation of quality when it is delivered by a small company? Surely not, nor from the perspective of a complainant or a suspect.

52. Therefore, I have engaged with UKAS and with the Chartered Society of Forensic Sciences to determine whether the costs of achieving the same quality standards could be reduced for small businesses. This work is at pilot stage, and it remains to be seen what savings can be made.

53. A significant proportion of the very small businesses in forensic science primarily provide review of work commissioned by the prosecution rather than de novo analysis. I have not yet set a standard for this casework review activity as there are several strands of work required.

   a. Pilot of ISO 17020 to determine whether it provides the requisite assurance at proportionate levels of effort and cost (in progress).

   b. Engagement with the Legal Aid Agency (LAA) and the Legal Aid, Sentencing and Punishment of Offenders Act 2012 (LASPO) review team to change the way in which defence review of expert evidence funded by legal aid is procured. Presently, solicitors are generally required to obtain quotations from multiple experts and unless there are exceptional circumstances, to award work to the cheapest provider. If I were to introduce a quality standard, which would inevitably carry a cost, then compliant providers would be at a competitive disadvantage relative to those which had not invested in quality. Further, the current rates paid by the LAA for forensic science are too low to enable quality standards to be adopted. The rates for different disciplines of expert appear to be largely
historical, and do not reflect the underlying costs of provision of the services. For example, a medical consultant’s hourly rate (outside London) is £108, while that of a drug expert is £72. A medical consultant will almost certainly be employed by the NHS, have an NHS pension and access to NHS facilities in which to work. For the drug expert, either working as a sole trader or in a forensic science provider, the £72 will have to fund salary, pension, insurance, work premises, equipment and so on even before factoring in the cost of quality.

54. There must always be a focus by regulators on proportionality and cost. However, it is my belief that forensic science must be funded at a level that enables the standards to be met across the sector. Leaders in forensic science commissioning and provision must prioritise quality and accreditation: the cost of failure is much higher than the cost of quality. As mentioned in paragraph 39, the standards are set at a level to ensure sustainable competence to produce high quality results. This is not a gold-plated set of standards that are almost unachievable, but what we should expect from all forensic science. If, as appears to be the case, the system is too poorly funded to enable overall compliance, then the answer is surely not to lower the standards and continue to allow uncontrolled work to enter the CJS.

55. My 2016 Annual Report identified the financial costs associated with ‘complying with and being assessed against the standards’ as ‘the single biggest challenge’ confronting the sector: “Funding for forensic science across the board, and particularly, perhaps, for defence provision via legal aid, must be at a level that enables the standards to be met. Otherwise we will face the costs, both in criminal justice terms and financially, of quality failures and loss of confidence in forensic science.”

Toxicology Issues at Randox Testing Services (RTS)

56. When there is a major failing such as the alleged data manipulation at RTS, it is critical that the system is reviewed to see what failed and what could be improved for the future. At the time of the alleged data manipulation, RTS was accredited to ISO 17025 but not to the Codes; the requirement for accreditation to the Codes was set for October 2017, after the RTS accreditation was suspended.

57. At the time a small number of individuals within RTS were alleged to be manipulating data, the company clearly fell short of compliance with the quality standard. For example, ISO 17025:2005 (in place at the time) specifies the following requirements.

a. The laboratory shall (4.1.5 d) have policies and procedures to avoid involvement in any activities that would diminish confidence in its competence, impartiality, judgement or operational integrity.

b. (4.13.1.4) The laboratory shall have procedures to protect and back-up records stored electronically and to prevent unauthorized access to or amendment of these records.

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As events unfurled, it became clear that the RTS procedures were not effective. Looking at the situation in retrospect, RTS was not compliant with the standard due to a lack of integrity of certain individuals, but held accreditation to the standard.

58. Without going into detail that could compromise the police investigation, it is alleged that a small number of technical experts were manipulating raw data prior to those data being analysed. If this is true the result was that the analysed data, which was the data sent to Reporting Officers to interpret and report into the CJS, was based in some instances on inappropriately manipulated raw data. Because the alleged manipulation would have happened prior to analysis of raw data, it would have been “invisible” to those receiving the analysed data. It would also have been “invisible” in files containing validation data sent to UKAS for evaluation as part of the RTS assessment. It is alleged that the activity was deliberately hidden by people in a position to do so, and by people who were checking each other’s work. Therefore, the usual systems of peer review and of evaluation of validation data did not pick up anything amiss.

59. The events described above, if they are true, are not what could usually be described as a quality failure; rather, they would appear to be deliberately concealed malpractice although at this point, no individual has been charged with any offence. No evidence of this alleged practice was identified by the laboratory’s management controls nor was it identified during UKAS assessment visits, which as described in paragraph 42 are a sampling exercise. Quality standards and accreditation are primarily designed to assure quality, not to detect malpractice that has been deliberately hidden. Nonetheless, the failure to uncover the issue sooner was a quality failure. In parallel to the police investigation into these events, I have been working with RTS and UKAS to determine what needs to change as a result. At a point when it will not risk prejudicing police action, I will publish a document setting out lessons learned. I have written to the Chair of the Science and Technology Committee (Commons) setting out the events at RTS, the response and the level of assurance concerning toxicology work carried out by other providers in the CJS.

60. The UKAS review includes a root and branch examination of the work being performed by all of the toxicology laboratories it accredits; this includes those not performing forensic toxicology work. Specific information to enable a comprehensive review was requested by UKAS from all 20 accredited laboratories on 2 February 2018, including copies of procedures and validation data. The resulting data took the laboratories some time to compile but has subsequently been evaluated by UKAS technical assessors to determine areas where improvements can be made or where attention needs to be focussed during future UKAS assessments. The report is being scrutinised by an independent technical specialist to ensure that the conclusions UKAS has reached are consistent with the data provided and that nothing of significance has been overlooked. The review has made recommendations which UKAS is working on.

61. It is noteworthy that the vast majority of the issues highlighted in the report where best practice was not being followed relate to non-forensic toxicology analysis; accredited forensic toxicology laboratories are operating in a far more controlled manner than their non-forensic counterparts.

62. Despite the alleged actions of a small number of individuals at RTS, the quality systems, procedures and records in place at RTS have enabled the effective investigation of the events. RTS self-referred the issue to me and to Greater Manchester Police as soon as it had established that there was a problem.

63. The cost of this failure is vast, with the majority falling on RTS. Previous major quality failures have also resulted in substantial costs being incurred; an example is the failure in the McKie case that led to the Scottish Fingerprint Inquiry.

**Practitioner Certification**

64. Some argue that a system of certification of practitioners should be adopted either instead of or in addition to the system of accreditation to international standards. Such a system is in place for Forensic Pathologists in England and Wales. I set the quality standards for forensic pathology in England, Wales and Northern Ireland, in conjunction with the Royal College of Pathologists, the Home Office and the Department of Justice (Northern Ireland). The Register of forensic pathologists recommended to perform forensic autopsies in the CJS is held by the Home Office. Each year, I arrange for an audit of the performance of the pathologists on the Register, to provide independent assurance that the work is at the standard expected. This system has, in recent years, been effective in improving the standard of forensic pathology in this jurisdiction. It is, however, costly, both in terms of the annual audit and the costs of removing a practitioner from the Register. The approximate cost of removing a practitioner from the Register was an initial c.£500k tribunal, which could be followed by legal challenges.

65. The system works well for forensic pathology because the number of practitioners is low (there are currently c.35 pathologists on the Register) and because the discipline is founded on expert medical opinion more than on scientific methodology. A similar system of centrally run audit would not be feasible to scale up to thousands of forensic science practitioners and it would not provide assurance regarding the validity of methods, the calibration and maintenance of equipment and so on, so a parallel system for the analytical elements of the methods would be required. A register would add cost and complexity without replacing the requirement for accreditation.

66. There is potentially one exception. If the pilot study described at paragraph 53 were to show that ISO 17020 is not a suitable standard for casework review, then it may be worth considering the merits of a register for practitioners who do not carry out any de novo work but only review the work of others. However, the problems identified with the now defunct Council for the Registration of Forensic Practitioners (CFRP) remain such as
a. lack of independence between those assessing competence and their peers;

b. economic sustainability;

c. ineffective investigation of concerns; and

d. no legal prohibition on the use of non-registered individuals.

67. Any consideration of practitioner registration would draw on the work of the Netherlands Register of Court Experts (NRGD). I am in regular contact with this organisation, which registers experts in a number of disciplines. It is fully funded by the Netherlands Government with the average direct cost of each assessment c.1300 Euros, in addition to the NRGD budget of 1.2M Euros annually.

Gaps in Standards

68. To date, there has been no standard specific for the interpretation of scientific evidence, yet this is arguably the part of the process with highest risk. In conjunction with the Royal Statistical Society (and other stakeholders), I am developing a standard for evaluative interpretation of evidence. This standard will address the issues raised in cases such as *R v T*\(^{17}\), where the transparency of interpretation methodology and the adequacy of the database used to inform that interpretation were criticised. It will set out the logical framework for interpretation of scientific evidence and how courts should be informed about the impact that the size and relevance of the data sets used to inform interpretation have on the level of confidence in the result. There has already been judicial involvement in the drafting process and there will be further consultation with the judiciary and others before the standard is finalised. Two new guidance documents dealing specifically with the interpretation of DNA mixtures have recently been published to increase quality and consistency.

69. Having published anti-contamination guidance for taking samples in Sexual Assault Referral Centres (SARCs) and custodial setting in 2016, a more detailed standard to cover retrieval of samples in SARCs for scientific analysis will shortly be published for public consultation. I am in discussions with the Care Quality Commission (CQC), which inspects healthcare aspects of SARC provision, and with UKAS about how the standard could be implemented to minimise gaps and duplication in inspection regimes.

Current Status of Compliance with Standards

70. It is not possible to consider how well the system is working without considering the level of compliance.

a. There is a high level of compliance with all the quality standards and accreditation requirements among the large commercial providers.

b. The National Police Chiefs’ Council (NPCC) Forensic Science Portfolio has committed to police forces gaining the necessary standards.

\(^{17}\) *R v T* [2010] EWCA Crim 2439
However, resourcing forensic services to reach the standards, and ensuring a culture of compliance and of promoting the value of standards has proved harder to achieve in practice. It is abundantly clear that unless there are legal consequences, other priorities will take precedence over achieving quality standards and there will never be full compliance. Whilst the majority of forces undertaking trace evidence recovery and fingerprint enhancement reached the required standards in time by 2012, progress towards compliance in digital forensics and fingerprint comparison has been slower and more problematic. I recognise the unique challenges in digital forensics – the pace of change and increase in data volumes has been unprecedented. Fingerprint comparison is due to be accredited by October 2018, but the majority of bureaux will fail to meet this timeline. There is a requirement for all crime scene investigation to be accredited by October 2020. Among the many priorities facing senior police officers, ensuring that meeting forensic science quality standards gains sufficient priority remains a fundamental problem.

c. Many very small companies, including sole traders, offer forensic science services, the majority of which focus on digital forensics. Some have engaged with the Chartered Society of Forensic Sciences in its initiative to assist small businesses with gaining accreditation, but a significant number are not likely to make any move towards compliance with standards until there is a sanction for non-compliance. I am unable to give any assurance regarding the quality of forensic science provided by many of these companies. Undoubtedly some will be good, although perhaps lacking in key quality assurance measures while others present unreliable or misleading evidence.

Q9. What role should the Forensic Science Regulator have? If the Forensic Science Regulator is to have statutory powers, what should these be?

Current Gaps
71. The role of the Regulator is “to advise Government and the Criminal Justice System on quality standards in the provision of forensic science. This will involve identifying the requirement for new or improved quality standards; leading on the development of new standards where necessary; providing advice and guidance so that providers will be able to demonstrate compliance with common standards, for example, in procurement and in courts; ensuring that satisfactory arrangements exist to provide assurance and monitoring of the standards and reporting on quality standards generally.” However, whilst accreditation is generally the mechanism used to provide assurance regarding compliance, the Regulator has no means to enforce compliance or to immediately stop any dangerous practices. There is, as described above, incomplete compliance with the quality standards. This results in risks to the CJS and an uneven playing field, where those that have invested in compliance are commercially disadvantaged against those that have not. Some police forces and many small companies have stated that they either have not prioritised meeting the quality standards or will not attempt to do so until

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18 WMS on 12 July 2007, by Meg Hillier MP
the Regulator has powers to enforce compliance. Such powers are urgently required.

72. The role applies to quality standards in the “provision” of forensic science and not to the commissioning. Therefore, the commissioning problems identified in paragraph 13.e. are not within the remit of the Regulator although they impact on the overall quality of provision of forensic science.

73. The Regulator has no role in regulation of the market. As detailed in paragraph 31, a number of forensic science companies have closed due to financial difficulties and KFS went into administration, resulting in major disruption to supply of services and an increase in errors as the remaining companies attempted to take on more work. There is a critical shortfall in forensic toxicology expertise and other disciplines may face similar crises. These market-related issues have impacts on quality and need to be regulated in some manner.

74. The role applies only to the CJS. However, the toxicology issues described in paragraphs 56–63 originated in a company providing services to the family courts. There is no equivalent regulator for the family courts and so although concerns were raised by a judge about that company, those concerns were never escalated to an appropriate person or acted upon.

75. As a minimum there needs to be regulation of the following areas:

   a. quality standards for forensic science provision in the CJS;

   b. quality standards for DNA and toxicology provision in the family courts;

   c. quality standards for commissioning of forensic science on a case by case basis such that the needs to the whole CJS and not only the police as the commissioning party are met; and

   d. procurement approaches and the market more generally, to include both internal police supply and the commercial sector.

76. Of those areas, a. and b. should be the responsibility of the Forensic Science Regulator; c. could be the responsibility of the Regulator, perhaps in conjunction with Her Majesty’s Inspectorate of Constabulary, Fire and Rescue Services (HMRCFRS) but d. may sit more appropriately within the Home Office.

Statutory Powers
77. In brief, there must be a power to issue a prohibition notice, if the Regulator is of the view that work from a company or an individual presents a significant risk to the CJS.

78. The Forensic Science Regulator Bill\(^1\) presented to Parliament on 9 March 2018 provides a possible model. The Bill would be improved by provision of a clause to enable the Secretary of State to request assistance from the Regulator; this would enable the Regulator to continue to oversee

\(^{19}\) [https://services.parliament.uk/bills/2017-19/forensicscienceregulator.html](https://services.parliament.uk/bills/2017-19/forensicscienceregulator.html)
standards for forensic pathology, which does not readily fit within the definition of forensic science in the Bill. Because the Regulator is defined in this Bill as part of the Crown, the Regulator would be unable to take enforcement action against Crown bodies. The most notable Crown body in this respect is the National Crime Agency. Therefore, further consideration of how action could be taken against Crown bodies is required. It may also be useful to provide clarification regarding what criminal offence(s) may be committed by any person, whether in a commercial company, government agency or police, if they were to inappropriately manipulate data or evidence in the course of their duties.

Q10. What lessons can be learned from the use of forensic science in Scotland and Northern Ireland? What can be learned from the use of forensic science overseas?

79. The majority of forensic science in both Scotland and Northern Ireland is provided by publicly funded laboratories. Forensic services in Scotland are funded by the Scottish Police Authority. The Authority allocates its total budget between forensic services and policing; following a recent demonstration of the value of forensic science in disrupting serious organised crime, it increased funding for forensic services. In contrast, the funding for Forensic Science Northern Ireland (FSNI) is provided via the Police Service of Northern Ireland (PSNI). The Scottish model places crime scene to court responsibility with Forensic Services; this model has enabled a single quality system to cover all delivery of forensic science in Scotland and allows an integrated approach, improving the intelligence picture in relation to serious and organised crime. The exception is digital forensics, which currently sits within Police Scotland. In Northern Ireland, there is a single forensic science strategy owned by the Ministry of Justice, but some services such as crime scene work and fingerprints sit within PSNI, while almost all of the laboratory analysis, specialist scene and fingerprint work sits within FSNI and some services, such as digital forensics, are provided by both.

80. In recent years, both have encountered similar issues to England and Wales, due to constraints on funding. However, there has recently been a major investment in forensic services in Scotland and both have benefitted from high specification new laboratory facilities in the past 7 years. The services provided by SPA Forensic Services and FSNI have a high level of accreditation to the international standards.

81. SPA Forensic Services was the first organisation in the UK to gain accreditation for fingerprint comparison; it could do so because the skills and knowledge from having implemented quality standards in its laboratory activities could be transferred to its fingerprint activities. The full commitment of SPA Forensic Services senior leadership to adopting the standard was critical. By contrast, many fingerprint bureaux in England and Wales have struggled to gain accreditation because the cultural and scientific changes required were beyond the skills within the respective police forces and there was, in some cases, insufficient senior leadership engagement or commitment. A further advantage of having the full crime scene to court range of forensic activities within a single organisation is that change (whether process change or scientific innovation) is more straightforward to implement. Strong links have been forged between
Scottish universities, police and forensic services through the Scottish Institute for Policing Research.

82. The Netherlands Forensic Institute (NFI) is well-respected for the quality of its science, although in recent years it experienced cultural and management problems and there is currently a review into future provision of forensic science in the Netherlands. Whilst the NFI has a high level of accreditation to ISO 17025 and ISO 17020, there is no requirement on police in the Netherlands to gain equivalent accreditation for any of their forensic science activities, which leaves a gap in assurance. The NRGD certifies experts in a range of disciplines (further information is given in the response to question 8). The UK could learn from the Netherlands in relation to research, training and development of scientific expertise. There is a close relationship between the NFI and a number of universities in the Netherlands, promoting both research and training: senior NFI caseworking scientists hold professorships in the Universities, which has the advantages of:

a. personal scientific development;

b. development of the next generation of scientists; and

c. close liaison between academic research and casework practice.

83. The situation in the USA is complex. The National Commission on Forensic Science set up under the Presidency of Barak Obama to improve policy has since been cancelled. The National Institute of Standards and Technology (NIST) hosts the Organisation of Scientific Area Committees, which aims to develop a repository of discipline-specific standards that can be used by accreditation bodies in their scrutiny of forensic science organisations and indeed by lawyers in cross-examination. However, there is no direct mechanism to ensure that the standards are adopted across the fragmented landscape of forensic science provision and the impact remains to be seen.

84. The British Standards Institution (BSI) Mirror Committee for Forensic Science, which I chair, is the UK’s voice in relation to the development of forensic science-related standards internationally, through the International Organization for Standardization (ISO). There are international standards under development in the following areas of forensic science:

a. terms and definitions;

b. recognition, recording, collecting, transport and storage of material;

c. analysis;

d. interpretation;

e. reporting; and

20 www.rijksoverheid.nl/documenten/rapporten/2017/05/10/tk-bijlage-rapport-samen-bouwen-aan-de-toekomst-van-het-nfi
f. forensic grade consumables.

85. These standards are not intended to replace ISO 17025 or ISO 17020 but to be complementary to them. Two of these new standards (Part 1: Terms and Definitions and Part 2: Recognition, recording, collecting, transport and storage of material) are close to completion but my Codes already address these issues. Therefore, I will not require certification against the new standards.

86. My office communicates with NIST, OSAC, NFI, NRGD and others to ensure that each can benefit from the work of the others in development of standards.

Q11. Is the ‘Forensic Science Strategy’ produced by the Home Office in 2016 suitable?

87. No. The ‘Forensic Science Strategy’ does not adequately set out a policy or strategy. I described in detail the level to which I considered that the strategy dealt with quality issues in a submission to the House of Commons Science and Technology Committee in 2016\(^21\). In summary, the Strategy missed opportunities to enhance the quality of forensic science provision because it failed to set out a clearer vision as to the nature of a more inclusive, joined-up approach to forensic science. Instead, responsibility was passed solely to policing for development of new delivery models.

Forensic Science research landscape

Q12. How should further research funding for forensic science be justified? What should be the focus of such research? What is the role of UK Research and Innovation, especially considering the interdisciplinary nature of much forensic science?

88. A healthy research landscape balances technology push with market pull. The technology push elements are likely to evolve outside forensic science as was the case with DNA profiling, but there is a need for those with forensic science knowledge to recognise the potential of developments in other fields and to facilitate technology transfer, including development of data sets and interpretation for forensic science. Considering market pull, it is important that research is not constrained by purely police-driven priorities, as there are multiple end users of forensic science, as discussed earlier. As discussed in my response to Q3, I publish quality-related research priorities annually.

Q13. Where are the gaps in research and understanding of forensic science? How and by whom should the research questions be articulated to fill these gaps?

89. My response to Q3 addressed scientific quality-related gaps in research. It is worth noting that structural issues impact on the issue: the fragmentation of work between multiple police forces and multiple forensic science providers has led to fragmentation of data sets for interpretation

\(^{21}\) Available at:  
of evidence. In a coherent system, data would be gathered and shared more effectively.

90. The Home Office convened the “Science and the Justice System Forum”, which aims to bring together stakeholders from across the CJS; this group may develop to have a role in articulating research questions. The Chartered Society of Forensic Sciences is well placed to ensure research groups are linked with relevant practitioners and that results are effectively disseminated.

Q14. How can a culture of innovation in forensic science be developed and sustained?
91. There must be incentives in the forensic science market that recognise and reward innovation, enabling scientists to be freed up from spending >90% of their day on casework, encouraging effective linkages between casework scientists and innovators and developing links with academia. This would require the funding crisis in day-to-day forensic science operations to be addressed but would reduce the proportion of academic work that never impacts on forensic science delivery.

92. It would be valuable to explore the possibility of centrally funded research fellowships to enable casework forensic scientists to take a sabbatical in a research environment. Such a scheme could be based on the scientific merit and potential impact of research ideas.

93. I make no comment on how funding for academic research could be improved; that is an area where others are better informed. However, there must be links between academics and practitioners in order to minimise the proportion of research that has little or no impact.

Q15. Are there current or anticipated skills gaps? Who should have responsibility for and/or have oversight of training?
94. There is a critical shortfall in expertise in some disciplines, for example toxicology and digital forensics, which has been long-lasting and intractable. There is no overall management of capacity or future planning for capacity of skills: each organisation must make its own plans, based on its current work and an uncertain projection of what future work it may win. In addition to the uncertainty of projected work, the low margins have a major impact on the ability of any organisation to invest in recruiting and training staff.

95. There are many very skilled, experienced and dedicated forensic scientists remaining in the commercial market. However, the decreasing margins on which their employers must survive are compromising the development of the next generation of scientists. We will continue to have competent scientists within the narrow scope of their operational roles, both in policing and in the commercial market – the challenging UKAS assessments against the competence requirements of ISO 17025 and my Codes will ensure that is the case. However, when scientists must spend a very high proportion of their time on chargeable output to enable the companies to be competitive, the broader development that many of the current generation of senior scientists benefitted from in their early careers, which often involved international collaborations, a level of research and/or development activity, reading and writing scientific papers
and exposure to a wider variety of cases, is unlikely to be available. The highly experienced scientists are delivering casework the majority of their time and are not able to invest in mentoring the next generation. In a scenario where each person does their job competently, but that job is narrow in scope and limited by tightly defined contractual obligations, how will the next generation of scientific and professional leaders emerge?

96. The skills gaps and training deficit are not due to lack of oversight of training, but to the fundamental instability of the system of provision. Where there is instability and insufficient funding, it is inevitable that training and development will suffer.

Digital Forensics

Q16. Are there gaps in the current evidence base for digital evidence detection, recovery, integrity, storage and interpretation?

97. The response to question 8 highlighted significant failings that were uncovered during accreditation assessment visits. These were not, however, due to gaps in the evidence base but to lack of knowledge and understanding and a lack of compliance with the standards.

98. There is work underway to validate the underpinning basis of cell site analysis: used to infer the location from which mobile phones were used. This will fill a gap in the evidence base regarding the reliability of the methods and how the results should be interpreted. The work is being led by one of the few accredited commercial providers of digital forensics and being reported into my Digital Forensics Specialist Group; it has required complex negotiations via the NPCC Data Communications Group to access ground truth mobile phone data from communications companies.

Q17. Is enough being done to prepare for the increasing role that digital forensics will have in the future? Does the Criminal Justice System have the capacity to deal with the increased evidence load that digital forensics generates?

99. There is a major shortfall in capacity and high level skills for digital forensics within policing; at the same time, several digital forensics companies in the private sector are retrenching. Although the NPCC digital forensics marketplace group has now committed to purchasing from suppliers that meet the required quality standards, previous large contracts were awarded to non-compliant companies which were able to bid at a lower cost than those with the necessary accreditation.

100. Recent concerns surrounding disclosure of digital evidence, coupled with the large increase in the number, storage capacity and complexity of devices being seized have added to the pressure on digital forensics units. A plan is needed, encompassing, as a minimum:

   a. how effective case management, proportionality and avoidance of bias will be achieved;

   b. future view on technology development;

   c. future view on crime trends; and
d. strategy for delivery, articulating future demand and how and where capacity will be built, operating to the correct standards.

Significant efficiency gains could be made in adoption of the quality standards if developers of digital forensics software tools and their users (in police and private sector) were to work together to ensure that software updates were tested according to an agreed protocol and the results were made available to customers. This would require development of mature, constructive relationships between suppliers of software tools and their users.

101. The “creep” of digital forensics into a broad spectrum of policing requires careful management. My office has seen many examples where digital forensic practitioners believe they are giving factual evidence but in reality are giving evidence of opinion, which is, by definition, expert evidence. I am working with the NPCC lead on digital forensics to ensure that those that are expected to give opinion evidence are correctly trained to do so, and understand that there are different legal obligations on experts. This is not currently the case for all staff. As an example, the role of Digital Media Investigators (DMIs) was created a few years ago, initially intended to provide advice on ‘forensic opportunities’ to major investigation or serious organised crime investigation teams. However, many forces now deploy DMIs to conduct examinations. To date, forces have not included DMIs in their efforts to achieve the required quality standards. These staff are not trained to be experts, but they are asked to give opinions, which places their evidence into the expert sphere. This discrepancy between what is expected and what staff are trained to do is not uncommon in digital forensics. Unless the correct standards, training and competence are in place for all staff when growing the required capacity, then a significant future risk is being accumulated.

14 September 2018
Annex 1: Quality Standards

**Appendices to Codes of Practice and Conduct:**
Specific requirements for disciplines such as fingerprint comparison, cell site analysis and bloodstain pattern analysis

**Codes of Practice and Conduct:**
Code of conduct, statement of standards and accreditation requirements, codes of practice, setting out standards for forensic science in England & Wales

**ILAC G19:08/2014 Modules in a Forensic Science Process:**
Sets out agreed international interpretation of ISO 17025 and ISO 17020 for forensic science activities

ISO/IEC 17025:
International standard for analysis/testing

ISO/IEC 17020:
International standard for crime scenes/fire scenes/collision investigation

ISO 15189:
International standard under consideration for medical forensics

Annex 2: Current Advisory Structures

QSSG scrutinises standards for suitability from end user perspective. Stakeholders across CJS represented (see para 18)

FSAC provides strategic advice and final approval of standards. Stakeholders across CJS represented

Specialist groups consist of expert practitioners, academics and stakeholders. They advise on and contribute to development of the standards for their specialisms. Some are task and finish groups but many have ongoing work