Forensic Access – Written evidence (FRS0066)

Declaration of Interest

Forensic Access

Forensic Access is a private company which has been supplying forensic science services to the Criminal Justice System since 1986. Earlier this year it merged with the similar company, Arrogen Forensics Ltd under the Forensic Access name. With a fully accredited laboratory at Oxford, it provides a full range of traditional forensic casework services to investigators and legal teams for both prosecution and defence. It also works in several specialist areas including radio nuclear forensics for the MOD, specialist forensic services for the Metropolitan Police, veterinary forensics for animal welfare and veterinary medical experts, and it creates and supplies accredited forensic proficiency tests to assist other forensic organisations to develop and improve their own quality standards.

Principal Authors

Professor Angela Gallop – former Home Office Forensic Science Service (FSS) scientist, established Forensic Access in 1986 to promote a better balance between prosecution and defence, 1997 co-founded Forensic Alliance to improve services for police through competition, 2005 helped create LGC Forensics (incorporating Forensic Alliance) to draw in science from the wider scientific community, 2010 co-founded Axiom International to spread UK forensic (and related investigation and legal) expertise internationally. Also established and personally led the scientific teams who helped solve many UK complex cases including eg. Damilola Taylor, Rachel Nickell and Stephen Lawrence. Currently CEO of Axiom International, Forensic Science Director of Forensic Access, and Strategic Director of the Centre for Forensic Science at Strathclyde University.

John Owen – career started in the FSS in 1978 where he was a scene-going forensic biologist and fibres specialist for many years. Moved into management and became Operations Manager at the Chepstow Laboratory, responsible for leading case work teams of all disciplines, giving him a breadth of experience. During the latter stages with the FSS, was part of the Transformation Programme, leading re-design of process within the Drugs Teams. On closure of the FSS, joined Manlove Forensics where he led the company delivering prosecution work as part of the National Forensic Framework and helped build the legal defence side of the business and niche services. When Manlove Forensics was purchased by Arrogen, became Managing Director and has overseen the growth of the company and subsequent merger with Forensic Access.

Dr Philip Avenell – forensic scientist since 2002, initially with FSS, then Forensic Alliance where he held various roles including Head of Research and Development and Head of Quality for the biology division, followed by Axiom International specialising in forensic science overseas including developing countries, and currently Operations Manager for Forensic Access. As a casework biologist has led and advised many complex cases for both prosecution and defence teams including eg Coastal Path Murders, John Doherty and Mark Nash.
Q1. Is forensic science contributing to the delivery of justice in the UK?

1. Unquestionably, because of its ability uniquely to provide objective, impartial evidence covering a very wide range of material, from such tiny traces, and usually relatively quickly and inexpensively.

2. This is best understood in relation to DNA and probably now digital forensics, but less so in other areas, and in cases which require subtle combinations of different types of forensic expertise. The true value of forensics is likely to be substantially underestimated because, despite a few attempts, there has never been a reliable, authoritative study on this.

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

3. Strengths include:
   - Quality, where suppliers of forensic services are accredited
   - Independence and impartiality, where independent contractors are used
   - Responsiveness, with very fast case turnaround times
   - 24/7 coverage eg. for attendance at crime scenes, and urgent cases
   - Value for money – prices have been greatly reduced over the past two decades
   - Collaborative working with other suppliers under newer contracts
   - Increasing partnerships with academic institutions as a cost effective way of enriching and strengthening research
   - Development of different models of service delivery from which best practice can be identified

4. Weaknesses include:
   - Quality, where suppliers are not accredited
   - Impression that accreditation is the whole solution to quality
   - Lack of independence, where police forces are their own suppliers. The 2009 US National Academy of Sciences report said that this should not happen, warning of cognitive bias
   - Police dictating precisely which tests are/are not required, encouraging a conveyor belt mentality driven mainly by price and on limited knowledge. This risks introducing bias, de-skilling of scientists and wrong behaviours with financial penalties forcing suppliers to focus on turnaround times not outcomes
   - Forensic effort fragmented between suppliers, so no-one has the full picture
   - Summary reporting of results leading to confusion eg. between potential sources of DNA, and activities giving rise to them, and without critical individual case contexts
   - Continued lack of funding for the critical safety net of defence checks
   - Imbalance between supply and demand eg. for digital services, leading to backlogs and poor service. We should use experience gained from DNA
   - Police in-sourcing dramatically shrinking the external market, and dangerously low margins, destabilising the market and stunting investment and R&D
- Lack of external funding for R&D, with most of what there is going almost exclusively to police and professional researchers who tend to be unaware of operational realities

**Understanding and use of Forensic Science in the Criminal Justice System**

**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?

**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?

5. Forensic science needs to be robust, logical, transparent and balanced. This can be achieved by ensuring the independence of suppliers – reversing the trend to police in-sourcing; by paying suppliers properly – forensic science is much more than just testing; insisting they are accredited for everything they do - both for prosecution and defence; ensuring that context is always considered in reporting; maintaining at least some level of expertise across traditional forensic disciplines for those occasions when inevitably it’s needed; and funding defence review of the prosecution’s scientific evidence properly.

6. For the Criminal Justice System to work most effectively, each group of criminal justice stakeholders needs to understand the roles of the others and how they all mesh together. This understanding could be facilitated by eg. seminars, primers, and joint CPD sessions. In relation to individual cases, the requirements of legal case management might make a good framework but introducing forensic science evidence through the filter of the police should be avoided – it often leads to misunderstandings.

**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?

7. Understanding of forensic science is patchy amongst lawyers and judges, and virtually non-existent amongst juries.

8. It could be improved generally by suggestions in Q. 4. above, and in individual cases by eg. routinely providing brief introductions to the science behind the evidence immediately before it is presented at court; use of appropriate visual aids to illustrate the evidence, and by ensuring that various recommendations designed to ensure the court focuses on matters in dispute, are routinely followed including eg. pre-trial discussions between experts to decide what they can and can’t agree on, and experts being allowed/encouraged to correct any imbalance from questions asked, at the end of their evidence.

**Q6.** Is the current training available for practitioners, lawyers and the judiciary appropriate?
Q7. Is the current market for forensic services in England and Wales sustainable? Are changes needed to ensure forensic 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?

9. The forensic market is currently very difficult for suppliers with prices at an all time low, increasing demands placed on suppliers, and penalties for ‘late’ service. Whether it continues to be sustainable at all depends very much on whether it is going to continue to shrink and if prices continue to fall below what is necessary to deliver the required quality and innovation. In recent times, the market has been shrinking for three reasons, firstly, because police have been commissioning less work – reflecting new approaches and changing technology; secondly, because they have been taking in-house increasing amounts of what work there is; and thirdly because prices are so low because of over-competitiveness between suppliers - keen to keep work volumes for necessary economies of scale and to make sense of their historic investments. The winning tender in a recent digital forensics contract had apparently offered the rate of only £23 per hour. Snapped up by the police but not sustainable.

10. One of the arguments used in support of in-sourcing is that it’s cheaper, but it’s not clear that all associated costs have been taken into account. Also, a significant amount of in-sourced work isn’t accredited or is at threat of losing accreditation once gained. Accreditation is very expensive. All external providers have to have it to bid for police work so they are immediately at a disadvantage costs-wise.

11. Changes required to ensure a healthy and sustainable market include making sure that that it is sufficiently large to provide enough work for a necessary range of large and small providers – eg. by limiting in-sourcing, which would have quality benefits too; making sure the price paid for work is appropriate; and in connection with this, that forensic suppliers stop being treated simply as testing houses which denies all the critical activities inherent in the work, including to maintain watertight chains of custody and avoid all risks of contamination. Some tenders have as much as 70% of the weighting on price; others, a much more reasonable 20% on price with the emphasis on quality of service.

12. Perhaps the greatest risk is the continuation of a market which is ‘managed’ to the immediate benefit of the customer at the expense of the suppliers, and therefore ultimately to the detriment of everyone. Since the forensic market began to open up, we have seen examples of extreme granularity of requirement - so a lot of time, effort and energy was then wasted debating about who had done what and whether it had been authorised, and which often denied the opportunity for suppliers to use their knowledge and skills effectively to contribute to the investigation strategy; of tender timescales which allowed an extended period of ‘no buses’, and then ‘they all came at once’; and of some tenders that were so large that when they switched on re-tender from one supplier to another, both were de-stabilised.
13. Risks of a market approach are that suppliers may decide to leave the forensic market for less demanding, more appropriately paid work elsewhere, or they may go out of business because they simply can’t deliver the quality of work required for what their customers will/can pay – and we’ve seen some examples of that, or they may start charging too much for the high end analytical work for which they are relied upon because it is too difficult and expensive to in-source. Clearly some of the cost of this complex work can be defrayed if sufficient volumes are going through the laboratory, but not if it’s not. Another risk is that firms will cease to invest in their businesses so their technology becomes outdated and unreliable. This is particularly important in the digital arena where the pace of change is particularly fast.

14. These risks can be mitigated against if the market is managed properly, and if it’s of an appropriate size and suppliers are appropriately remunerated or the work and quality of work required of them. The Association of Forensic Science Providers (AFSP) – the nearest thing the profession has to a trade body, could be given a more prominent role and, with the Home Office, draw up plans to cope with a substantial supplier going out of business.

15. In any event, the risks of a market are well outweighed by the risks inherent in either reverting to a state monopoly like the FSS, or allowing for the first time, all forensic science in England and Wales to be placed directly in the hands of the police – whose main function is too closely aligned for comfort to just one side of our adversarial system of justice.

16. What is often not realised, or forgotten, are the huge benefits that accompanied the opening up of the market in the mid-90s. The arrival of competition ushered in a period of dramatic reductions in cost, decreases in case turnaround times, and improvements in quality and innovation; this was not just about improving technology. For example, between 1994 and 2009:

17. Costs for DNA analysis of major crime stains fell by 68%, and of mouth swab reference samples by 43% - despite an inflation rise of 57% over the same period, and by 20% for simple drugs cases, and 36% for more complex ones. Turnaround times decreased from 6-8 months to 2-3 days for DNA; from 14 days to 5 days for simple drugs and toxicology cases and from 2-4 months to 1 month for complex ones; and from 3-6 months to 4-14 days for simple violent/property crime and from 9-12 months to 21 days for more complex cases. Quality – new approaches to scientific examinations, combined with the development of new techniques by different suppliers enabled some of the UK’s most high profile cases finally to be solved – including Damilola Taylor, Rachel Nickell, the Coastal Path Murders, Stephen Lawrence and many others. Innovation – new types of technology were seamlessly introduced and which, for example, overnight increased discrimination power of glass and paint analysis tenfold. It made huge differences in individual cases eg. Celine Figard where different technology identified a stain on her hand – previously merely said by the FSS to be ‘not body fluid’, which led straight to her murderer’s garden shed.

Q8. Is the system of accreditation working successfully to ensure standardised results and the highest quality analysis and interpretation of significance of evidence?
18. No. First of all, not all suppliers of forensic services have accreditation – particularly police laboratories and some digital suppliers, and without statutory powers, the Forensic Regulator cannot insist on this. Secondly, accreditation is not sufficient on its own to ensure quality across the board. Accreditation only checks what you do (and then not all of it), not what you don’t do, and less on ensuring that you’ve done the right thing and interpreted your findings correctly. It’s perfectly possible to skew an investigation through, for example, the selection of which items to examine, what to test them for, the detail in which the results are reported, and the extent to which the context of the case is taken into account in interpreting them.

19. And funding is tighter than ever for independent reviews of the evidence on behalf of the defence which are supposed to pick up things that might potentially lead to miscarriages of justice. There have been actual reductions in Legal Aid Authority rates for the work, and some payments have taken many months to come through. Since there is no requirement for defence experts to be accredited, or even the sort of individual certification of experts provided by the Council for the Registration of Forensic Practitioners (CRFP) before it was disbanded on cost grounds in 2009, quotes from those who don’t know what they’re doing and/or don’t have accreditation are inevitably cheaper than those who do, and they win the work and another hole forms in the safety net.

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

20. The Regulator’s role should be very much along the lines that it is at the moment ie. to develop a comprehensive framework of quality standards covering all suppliers of forensic science services, the scientists involved and the techniques they use to help reduce the risk of quality failings and miscarriage of justice. But this is all pointless if the Regulator is unable to enforce these standards; all it does is create inequality in the market. So statutory powers are essential. These clearly need to be sufficient to ensure that the standards are achieved and maintained and that practice is not possible without them.

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?

21. Scotland and Northern Ireland are each very different from the situation pertaining in England and Wales. They both represent what could be regarded as versions of the FSS at different times in its history. We would view any reversion to this sort of arrangement as a backward step and one that denies the proven advantages of a competitive market – see response to Q. 7 above.

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

22. This was more an approach than a strategy. It was right to stress the importance of developing ‘real time’ forensics and digital services to reflect new technology and changes in life style. But wrong increasingly to place all power
over forensics in the hands of the police including as suppliers of independent, impartial forensic services to the Criminal Justice System. It was disappointing and worrying – both from a firm’s but also a societal point of view, that there was no clear role for external forensic providers.

23. The ‘strategy’ should have gone further in relation to digital forensics, and harnessing the new Artificial Intelligence tools to cope with the extraordinary amount of information stored on devices and use this in a predictive/preventative way and not just ‘after the event’. It should also have ensured the retention of traditional areas of expertise – albeit at a much lower level, because they will be needed from time to time for more complex and/or cold cases.

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 inter-disciplinary nature of much of forensic science?

24. Further research funding would be justified by any proper analysis of what’s likely to be required, and comparing that with what’s currently available but, critically, not including in this any monies that get hijacked into structural reform such as in police forces. What’s required should be defined by all stakeholders in the Criminal Justice System and not just the police, whilst recognising that they are the main users of forensic services and need clear and strong support.

25. Clearly the focus of much research will need to be on digital forensics, but it’s also needed in other areas and including, eg. aspects of systems and processes which disadvantage the defence and can lead to miscarriage of justice despite quality standards. UK Research and Innovation decisions should recognise that practising forensic scientists find it difficult to compete with professional researchers for funding. Wherever possible, research should involve partnerships between operational and academic scientists.

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?

Q14. How can a culture of innovation in forensic science be developed and sustained?

26. By its very nature, any scientific organisation is keen on research and development to keep abreast of new technology and compete effectively with its competitors. In the forensic market, though, margins are now so small as to make any meaningful research programme almost impossible to self-fund, and there are very few grants into which forensic scientists can tap for external funding. So the will is firmly embedded, it’s just the means that need to be made available.

Q15. Are there current or anticipated skills gaps? Who should have responsibility for and/or oversight of training?
27. Knowledge and skills gaps are appearing in several areas of traditional forensics eg. textile fibres and forensic chemistry disciplines, which will inevitably be required from time to time even if at a lower level than hitherto. In addition, experience in how to combine different types of forensic expertise to solve some of the more complex cases is being lost. It was through searches for textile fibres that the DNA evidence in both the Coastal Path, and Stephen Lawrence murders was found, and it wouldn’t have been found otherwise. The AFSP should be central to ensuring that the necessary training and CPD is provided.

Over and above this, skills gaps are apparent in the much newer field of digital forensics, and these will also need to be addressed, and as a matter of extreme urgency to eliminate backlogs of work - which adversely affect investigations, ensure police find any evidence there is to be found and don’t miss anything of contextual importance – which can otherwise adversely affect court proceedings, and generally don’t have rings run round them by tech savvy criminal gangs.

Digital Forensics

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

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?

28. No, backlogs of work are building, and over-competitiveness, fuelled by a lack of accreditation which has meant that ‘anyone’ can submit tenders for work, has driven prices down to unsustainable levels, and professional firms are suffering.

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