National Police Chiefs’ Council – Written evidence (FRS0053)

The submission to the House of Lords Science and Technology Committee inquiry into Forensic Science is made by the National Police Chiefs’ Council Lead for Forensics, Chief Constable James Vaughan.

Executive Summary

1. Forensic Science in the UK is considered to be world leading and its widespread use in law enforcement makes a significant contribution to criminal justice outcomes and community safety particularly in the service of serious and major crime.
2. Spending on forensic services has reduced broadly in line with overall Police spending in recent years.
3. Policing can demonstrate considerable efficiencies and improved procurement practice in outsourced forensic service provision. This has driven down costs, improved performance and has been delivered in partnership with private Forensic Service Providers (FSPs).
4. Reduced spending through keener procurement has led to providers having to compete for market share. Fierce competition and diminishing margins have placed significant strain in a forensic marketplace, where the revenues have fallen. A small number of specialist providers have ceased trading and a major supplier entered administration in early 2018.
5. Compliance with international quality standards is regulated by the Forensic Science Regulator (FSR) and necessary accreditations are awarded by the UK Accreditation Service (UKAS). ISO 17025 quality standards have been achieved by Law Enforcement and private providers in fingerprint enhancement, blood screening, DNA profiling and some aspects of digital forensic investigation. Rigorous efforts continue to comply with widening quality standards but it is an accepted challenge in policing to reach full accreditation in digital forensic investigations, fingerprint comparison, collision investigation and crime scene examination within the deadlines set by the FSR.
6. Forensic science is changing. The digital revolution has resulted in digital forensic evidence becoming the area of greatest growth, where law enforcement faces challenges to simply keep pace with technology and the exponential growth of digital media. It is therefore particularly important to transform forensic science delivery to enable accurate predictions for future capability needs and workforce planning.
7. New and emerging technologies such as facial recognition, mobile technology and integrated biometrics offer exciting potential benefits to criminal justice.
8. In March 2018, the Minister for Policing & the Fire Service commissioned the Home Office, NPCC and APCC to jointly review the provision of forensic science into the Criminal Justice System (CJS).
9. ‘Transforming Forensics’ is the police transformation programme funded by the Police Transformation Fund, working to provide a strategic and sustainable response to the current challenges and risks.

1. History of Forensic Science

1.1 Over the last century law enforcement agencies and the criminal justice system have come to rely on the mainstream use of scientific practices in criminal
investigation. The early forensic science pioneer Dr Edmund Locard formulated the Exchange Principle as, "Every contact leaves a trace," a notion that prevails today and has seen scientists develop techniques to retrieve, examine and compare fibres, fingerprints, bodily fluids, hair and trace material. In recent decades, forensic science has seen important developments, aiding the prevention and detection of crime. Advancements in DNA, digital evidence, toxicology, ballistics, to name a few, have better enabled investigators to gather evidence capable of supporting witness testimony and ultimately able to incriminate or eliminate suspects from criminal investigations.

1.2 Digital forensic evidence is the fastest growing and changing area of forensic science, with exponential growth in examinations of smart phones, computers and other electronic storage media.

1.3 There are new and exciting technologies in development. Facial recognition, mobile technology and integrated biometric capabilities offer yet more preventative and crime fighting opportunities.

2. Current Application

2.1 There are broadly only three types of evidence admissible in UK courts: confession, eye witness and forensic evidence. Owing to the high quality standards surrounding forensic evidence, it is often considered the most reliable source of evidence and is generally present in some form at a crime scene; particularly valuable when no eye witnesses are present. Forensic evidence is not only used in the Criminal Courts, but relied upon in Family Courts, Coroners Court, forensic medicine and forensic pathology.

2.2 The public must have confidence in the UK CJS and the part forensic science plays. Maintaining the quality of and developing a sustainable and efficient system for forensic science provision is vital to the detection, investigation and prosecution of criminal offences and the fair administration of justice.

2.3 In 2015/16, there were a total of 480,819 crime scene examinations and 415,300 fingerprints taken from scenes across the 43 police forces in England and Wales. Its impact both in facilitating just outcomes and efficiency across the CJS, for example in eliminating suspects or securing early guilty pleas, is likely to be significant when compared with other investments. At present the structure of 43 forces makes it difficult to obtain meaningful and comparable performance data to understand the true value of forensic science, however a review by Transforming Forensics Programme ‘Value of Forensics’ has made a number of recommendations to remedy this, including Police Forces and scientific support units accurately attributing the role of forensics on case files, to increase the criminal justice system’s ability to make evidence-based decisions, on the future use of and investment in forensics.

3. The Marketplace

3.1 Police Forces in England and Wales spend approximately £300 million annually on forensic science services. Currently, approximately 80% of the provision is provided in-house by law enforcement who have built their own laboratories, drug analysis and digital capabilities. The remaining provision is provided by private

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1 Transforming Forensics – Value of Forensics by Ben Sargent January 2018
specialist FSPs. Whilst the spend on forensics broadly fell in line with a fall in total police expenditure, spending on commercial providers fell more sharply, by approximately 29% between 2012/13 to 2014/15.

3.2 Austerity has led to policing becoming increasingly efficient with a number of successful forensic collaborations around the country delivering in-house capabilities. Collaborations in procurement practice and co-operation with FSPs have also driven down the cost of external forensic services to their lowest levels in many years. The annual cost of the external spend in the forensic market has more than halved, reducing from a peak of circa £120 million in 2012 to approximately £55 million in 2017. Whilst this is undoubtedly an efficiency success for policing, it has placed the marketplace under pressure with fewer providers fiercely competing for less work. The market strain has manifested in a number of small providers ceasing to trade and a major supplier going into administration earlier this year. Market fragility remains a key concern for policing and urgent re-investment has been required to provide commercial and marketplace support, engagement and oversight.

3.3 The ongoing investigation into alleged criminal data manipulation at Randox Testing Services required the retesting of 10,000 drug toxicology cases and has served to undermine public confidence in forensic science. Moreover this further reduced the available capacity for toxicology in an already saturated market with chronic capability shortfalls. A national police led response is still in operation to ensure access to service remains open to all law enforcement against their highest priorities, whilst Randox cases re-testing takes place at pace.

4. Accreditation
4.1 The CJS and public rightly expect high quality standards in forensic science disciplines which can be demonstrated to be robust and compliant with international standards (ISO 17025). Accreditation to ISO standards reduces the potential for quality failures and miscarriages of justice.

4.2 To date, policing has successfully achieved accreditation in fingerprint enhancement, DNA screening and examination of biological material. However, many forces have not invested sufficiently in quality standards and have found themselves struggling to keep up with the demands of the regulatory framework. The October 2017 digital forensics and October 2018 fingerprint comparison deadlines have proved challenging for the majority of forces. Greater understanding and prioritisation of quality regimes in forces will enable them to meet the increasing scope of regulatory requirements and deadlines set out by the FSR. It should, however, be acknowledged that Chief Constables have carefully balanced and allocated scarce and reducing resources to the threats and risks causing the greatest harm in their communities, aligned to priorities set in local Police and Crime Plans.

4.3 At present, the lack of national approach to accreditation means that 43 forces are working independently, with small quality regimes, set up to deal with a much smaller scope than we require today; the duplication of effort and fragmented approach is inefficient. The Transforming Forensic Programme provides a proposition to deliver a nationally coordinated approach to accreditation and quality management that would save forces both time and money and create a greater degree of standardisation across the country.
5. Research and Development

5.1 The Science and Justice Forum brings together partners from across the criminal and civil justice systems, to consider and make recommendations for how the UK’s research and development ecosystem can provide the insights and evidence needed to support an effective justice system.

5.2 Research is vital to support the continued effectiveness of science in the justice system, but there are few incentive for researchers to invest time or funders to invest resources. The maintenance of reference databases for forensic techniques, validation of techniques and new technologies are just some of the identified areas that require research but coordinating research needs and funding can be difficult. There is a need for spaces where the science and justice communities can come together to make decisions about funding allocations. The relevant stakeholders include: scientists, the judiciary, the police, CPS, the legal community, charitable foundations and private funders, UKRI, Home Office, and Ministry of Justice. A mechanism for coordinating research needs and funding would help improve the strategic management of research that underpins the justice system.

5.3 Given the complexity and fragmentation of the research environment, it could be helpful to create a comprehensive and coordinated view of the landscape. This understanding could create a mechanism for directing research funding to priority areas, identify gaps, and coordinate funding and research to maximise its impact. It may also seek to increase funding across the landscape.

5.4 The Science and Justice Forum have a work plan for the next six months to better understand how scientific knowledge is used in the justice system and the extent of research capabilities by:

- Developing ‘end to end’ case studies that highlight the different types of scientific knowledge that are relevant to the justice system, and that illustrate different barriers to ensuring this knowledge is available, admissible, and interpreted in a way appropriate for the case in question.
- Understanding what research is currently funded, where, and how, through a mapping exercise.
- The Transforming Forensics Programme is planning to include an R&D coordination function in the proposed Forensics Capability Network.

6. Training

6.1 The College of Policing is an autonomous body, responsible for standards of national training for police forces in England and Wales. It holds the National Curriculum for policing, which includes learning and development curricula for police forensic practitioners and investigators.

6.2 The College of Policing has defined, in collaboration with policing, specific national role profiles for police forensic practitioners. These provide clarity of role and required skills for defined activities. These roles include:

- Covert and overt crime scene investigation
- Fingerprint recovery analysis and comparison
- Footwear recovery analysis and comparison
- Covert crime scene investigator
6.3 These role profiles are being used to review and refresh the learning products and programmes which are being made available to forces under licence (excluding the covert programme which is centrally delivered by the College). These are delivered through a mix of methodologies, e.g., classroom, mentoring and immersive learning.

6.4 The College works in collaboration with police leaders and practitioners, as well as partners, e.g., Forensic Science Regulator and Transforming Forensics programme, to ensure that learning programmes reflect both current and future practitioner needs, in particular the needs of operating in an accredited environment. National products support national consistency of practice, practitioner mobility and collaboration. The College of Policing recommends that forces adopt these products, but we do not mandate.

6.5 Products are maintained on a regular cycle and environmental scanning in collaboration with police leaders and practitioners. Forces delivering these products under licence self-assess quality of their delivery. They, and the NPCC can peer assess and dip sample supported by the College as required.

6.6 Forensic awareness is also relevant to investigators from volume and priority investigations to major crime and counter terrorism. Forensic awareness, and working in an accredited environment is included in core investigative skills training and development.

6.7 The area of digital forensics and investigation is continually developing. The digital forensics portfolio board works across national and international partners to improve our knowledge and understanding of the most efficient and effective methodologies and techniques. This will always be evolving. The College is providing digital learning at initial and more advanced levels to develop knowledge of the investigative opportunities from digital devices.

7. Digital Forensics

7.1 Digital Forensics (DF) is “the application of science to the identification, collection, examination and analysis of electronic data whilst preserving the integrity of the information and maintaining the chain of custody of that data.”

7.2 The policing and DF community faces many and varied challenges. The sheer demand for DF services has never been higher and continues to increase in line with the proliferation of digitally enabled devices. Consequently most ‘traditional’ volume crimes now includes some element of digital forensic investigation, requiring the whole footprint of policing to be digitally enabled and coherent.

7.3 The growth of connected devices and ‘smart’ home technology continues to fuel a rise in demand for DF services; tackling both cyber-enabled and cyber dependant crime and with ‘cloud’ storage and the increasing storage capacity of devices, the volume of data subject to DF examination also continues to increase. The pace of change poses particular challenges. New hardware, operating systems and applications must be studied to discover how to reliably find information of forensic value, and with multiple vendors following frequent hardware refresh

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2 https://www.app.college.police.uk/app-content/investigations/forensics/#digital-forensics
cycles, regular operating system updates, and weekly application updates the DF methods and techniques require constant testing and updating. The technology itself is becoming ever more complex, the increasing use of encryption and ‘cloud’ investigations, with data hosted overseas presenting particular challenges.

7.4 Similarly, as criminality continues to develop in scale and sophistication, a ‘digital arms race’ has emerged, with law enforcement continually trying to keep up with criminality. “Criminals are exploiting technology, and the tools to preserve anonymity online, more quickly than law enforcement is able to bring new techniques to bear.”

7.5 The relative immaturity and fragility of the DF marketplace is an issue for the law enforcement community. Traditionally, a high proportion of DF work has been conducted ‘in house’ with outsourcing focused on managing spikes in demand and niche services. However, the changing nature of DF requirements has highlighted a previous lack of strategic marketplace engagement.

7.6 Finally, the environment in which DF operates has changed rapidly over time. Regulation, quality standards accreditation, disclosure and following a number of high profile cases, the increasing level of public interest and media scrutiny, further adding to the work of DF units nationally to ensure the needs of victims, witnesses and suspects are properly balanced. Linked to this is the challenge of operating within a framework where much of the legislation is ‘pre-digital’, presenting new and previously unforeseen issues for policing.

7.7 In response to these challenges, the NPCC digital forensic portfolio board has sought to develop a principle of ‘standardisation’ wherever possible. This includes producing national service level definitions and requirements, developing standard DF methods and national models of validation. By adopting this approach we are seeking to streamline delivery and reduce the duplication of effort, across 43 forces, whilst maximising the opportunity to ‘accredit once, deploy many times’ to efficiently deliver quality standards accreditation. All forces now operate within established quality management systems and have validated methods and well developed accreditation schedules. Looking forward, this approach is being endorsed within the Transforming Forensics (TF) programme, where better practice and modelling will form the basis of national service improvement.

7.8 Our work continues into the development of learning and good practice, including a request to the College of Policing to develop new DF national guidance material to refresh existing good practice guidance. This is supplemented with practical guides to policing. Additionally, we are developing ‘bite-size’ training films for front line officers to support more effective use of digital media. We have also been working with HO and CPS colleagues to identify development needs across the CJS to ensure better understanding and reliable use of digital findings.

7.9 Responding to the requirement for greater marketplace engagement, the DF marketplace operations group has been established to develop commercial relationships across the sector and encourage greater understanding of DF requirements. Supplier engagement events have been held and this group is

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4 NPCC Policing Vision 2025 (http://www.npcc.police.uk/documents/Policing%20Vision.pdf) (p9)
currently coordinating a DF collaborative procurement initiative with multiple forces and TF, which will drive a more customer led approach and hold vendors to account for quality.

8. Home Office Biometrics
8.1 Introduction: Home Office Biometrics (HOB) enables UK policing and other agencies to capture, verify, search and match individuals’ biometrics in order to solve crime, protect borders, prevent terrorism and enable growth.

8.2 Building new capabilities: At the heart of the country's biometric capability are the fingerprint, DNA and facial databases. During 2018-20 HOB will deliver improved services for all three of these modalities.

8.2.1 Furthermore new algorithms and a new biometric matcher will result in the detection of more crimes and realise considerable efficiency gains through greater automation.

8.2.2 HOB has already delivered capability through the Biometric Services Gateway, effectively the entry point for all biometric searches. Among a range of benefits is an easier, speedier and more cost effective capability to make direct cross checking against the IDENT1 (offender) database and IABS (immigrations and asylum) database.

8.2.3 The Strategic Mobile project has delivered a new generation of fingerprint readers linked to officers’ mobile phones providing the capability to confirm the identity of an offender on the street. It is highly cost effective delivering a better service at a fraction of the cost.

8.2.4 HOB has upgraded and installed 370 Livescan III machines operating in custody environments giving the police speedier and more accurate confirmation of identity of offenders and links to undetected crime.

8.3 Future Developments: The new technical design will enable police forces to make choices about how the forensics landscape is configured. The current model is not sustainable and HOB is working with the Transforming Forensics Programme to build a service which is better able to support the challenges facing policing.

8.3.1 Together with other stakeholders, HOB is starting to scope what other biometric modalities could be utilised to keep our communities safe. It is critical that transparent and published ethical considerations, scrutiny, governance and policy keep pace with new opportunities that technology offers.

8.4 Impact upon the public: HOB is delivering a comprehensive range of operationally effective, ethical and proportionate, infrastructure and front-end capabilities. These are making an increasingly significant impact upon the UK’s ability to keep its ‘citizens safe.

9. The future, Home Office Review and Transforming Forensics
9.1 Following the publication of the Home Office Forensic Strategy\(^5\) and the Policing Vision 2025\(^6\), it was apparent that the forensic science provision in

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England and Wales failed to align to either document and was fragmented and ill-equipped to respond to the future challenges. There was no desire in the NPCC or APCC to create a new national body, but the need for a more coordinated and collaborative approach was strongly recognised. The concept of a Forensic Capability Network (FCN) is being developed by the Transforming Forensics Programme, supported by Police Transformation Funding. The aim is to integrate fingerprint capabilities, eventually aggregating to 7-10 regional centres, whilst maintaining operational CSI capability locally in forces. This will deliver improved productivity through standardisation and economies of scale. Improved processes should also deliver wider operational savings, greater consistency and resilience. Improved efficiency will provide the headroom for investment in R&D and improved services. Longer term development of next generation DNA and Digital Forensic projects will provide the responses to future technical challenges and opportunities.

9.2 In summary, the Transforming Forensics Programme will provide policing’s response to:
- the HO Forensic Science Strategy
- the increasing demands and financial constraints on forces
- The need to minimise operational fragmentation
- The opportunities and challenges of rapidly changing science and technology
- Compliance with the FSR Code of Practice
- Making the most of opportunities presented by HO, ESMCP and other digital programmes.

9.3 In March 2018, the Minister for Policing & the Fire Service commissioned the Home Office, NPCC and APCC to jointly review the provision of forensic science into the criminal justice system. The review considered the provision of forensic science to criminal investigations and criminal court proceedings in England and Wales, including both ‘in-house’ police provision and private provision and covers all forms of forensic science including digital forensics. Early findings are with Ministers for consideration and stakeholders are being consulted on next steps. The review will be published in due course.

14 September 2018

Appendix – College of Policing

1. The purpose of the College of Policing is to support the fight against crime and protect the public by ensuring professionalism in policing.
2. It has five responsibilities, which were set out in the guidance notes for the Anti-Social Behaviour, Crime and Policing Act 2014 and are included in the Terms of Reference of the Company’s Board.
3. Firstly, the College has the responsibility for setting standards and developing guidance and policy for policing. Second, it builds and develops the research evidence base for policing. Third, it supports the professional development of police officers and staff. Fourth, it supports the police, other law enforcement agencies and those involved in crime reduction to work together. Fifth, the College identifies and develops the ethics and values of the police.
4. Sections 123 and 124 of the Act amend other legislation to give powers to the College to issue regulations and codes of practice.

5. In addition to the statutory provisions, the College discharges its other functions by:
   - Issuing manuals of guidance and advice called ‘Authorised Professional Practice’;
   - Carrying out and reporting on research into policing matters, so that policing is informed about the evidence to assist decision making, where evidence is available;
   - Developing selection criteria for policing roles, setting out career pathways and designing and (in some cases) delivering training;
   - Supporting implementation of policing initiatives such as embedding the Code of Ethics.

6. The College Board has approved the following text to describe the purpose of the College-

   **Our role**

   The purpose of the College of Policing is to provide those working in policing with the skills and knowledge necessary to prevent crime, protect the public, and secure public trust.

   We have three complementary functions:
   - **Knowledge**: developing the research and infrastructure for improving evidence of ‘what works’. Over time, this will ensure policing practice and standards are based on knowledge, not custom and convention.
   - **Education**: supporting the development of individual members of the profession. We set educational requirements to assure the public of the quality and consistency of policing skills, and facilitate academic accreditation and recognition of our members’ expertise.
   - **Standards**: drawing on the best available evidence of ‘what works’ to set standards in policing for forces and individuals, for example, through Authorised Professional Practice (APP) and peer review.

   We will raise professional standards in policing by using the policing knowledge base, our legal powers, our influence and connection with members and our ability to set educational requirements, test new ideas and innovate.

   We will have succeeded in our role when all police practitioners and decision makers are confident professionals able to operate with high levels of autonomy and accountability. There will be evidence of the public’s trust in the police. Those who work in policing will see themselves as members of a profession and adhere to the disciplines of professional practice.

7. The College of Policing began operating on 1st December 2012. It is a company limited by Guarantee owned by the Home Secretary and an arm’s length body of the Home Office.

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