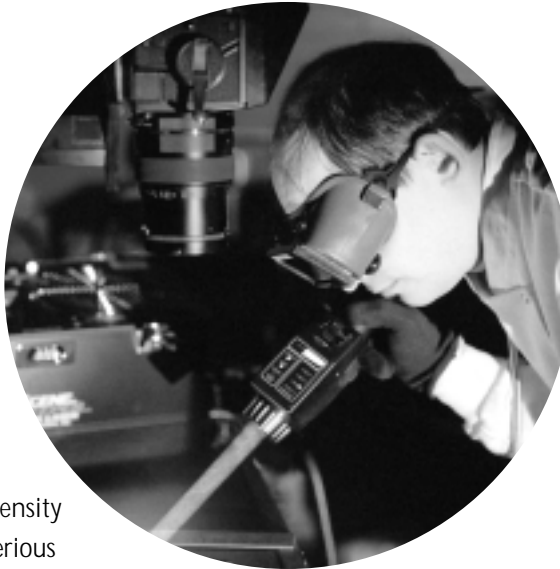


1 Managing the Science

Introduction

1.1 The forensic science resource will always be finite. It is crucial therefore that the resource is used to secure the greatest impact. The achievement of maximum benefit is vital if forensic science is to make its proper contribution to combating volume crime. It will continue to be a fact of investigative life that every individual crime that contributes to the volume cannot benefit from the range of forensic science applications to the same intensity that is attracted by homicide, terrorism or serious sexual assault.



1.2 The irrefutable conclusion is that if forensic science is to realise its full potential in the drive to reduce volume crime, the resources must be marshalled under an informed and positive leadership, deploying a focused and well motivated staff. A significant ingredient of that leadership is to secure maximum productivity. This will require the collection by all forces of data which is amenable to meaningful analysis and comparable costing. The absence of rigorous data has proved an on-going frustration in this inspection.

Development of National Policy

1.3 In 1996 ACPO and the FSS jointly published a major document entitled 'Using Forensic Science Effectively' (UFSE). The executive summary of this document is reproduced at Appendix D. The aim of the publication was twofold: -

" To assist police forces and suppliers in examining current arrangements for forensic science support to the investigative process"

and

"To provide information, models and guidelines which will assist them in making any changes necessary to make the best use of this resource."

1.4 It was understood that the guidance offered in UFSE was "not prescriptive, nor intended to apply in all circumstances." It should equally have been understood that the document presented an opportunity for making more proactive use of forensic science and improving awareness amongst investigative and operational officers, as well as suggesting the stepping stones of communication both between forces and service suppliers and

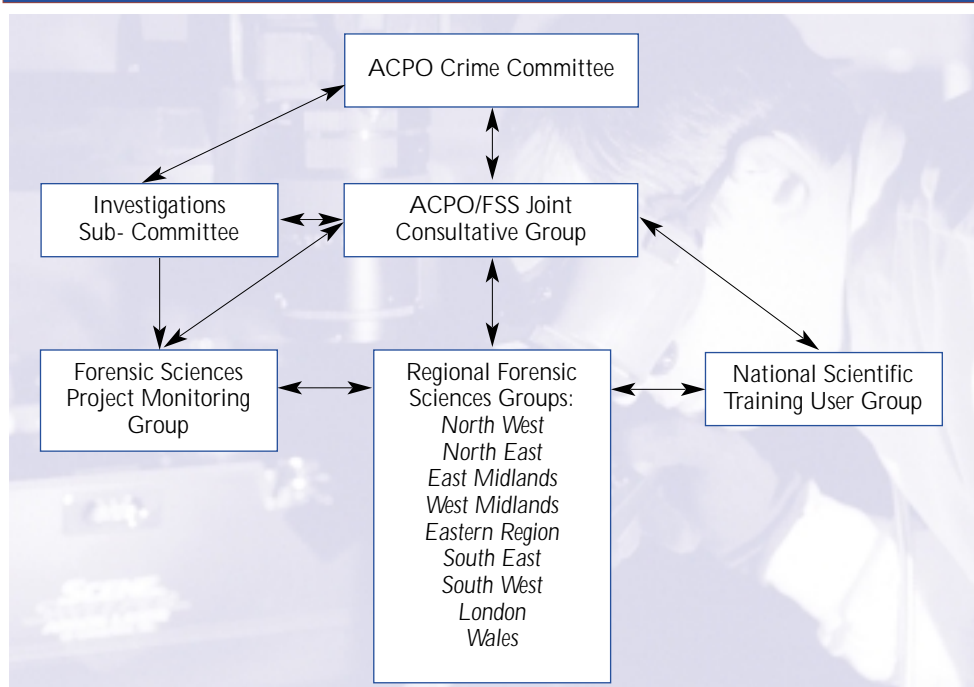


Managing the Science

within forces themselves. The suggested shift to 'outcome' measures of performance in addition to measures of ability fitted neatly into the developing performance culture of the service.

- 1.5 The ACPO/FSS Consultative Group subsequently reinforced the messages of the UFSE document to forces. The document and its guidance should have been a cornerstone in the development of a more professional and strategic exploitation of forensic science. It is regrettable that the inspection found not only that the advice of UFSE had frequently not been acted upon, but also that, even more regrettably, the failure to respond was a product of ignorance of its contents. Her Majesty's Inspector is convinced that the thrust of UFSE guidance, with its emphasis on the need for leadership, management, performance indicators, training, intelligence and structures, remains contemporary and valid to the extent that it provided an appropriate starting point for this inspection. It is a document that still provides required, instructive and rewarding reading for members of ACPO, specialists, and particularly BCU commanders, as they plan their approaches to reducing volume crime.
- 1.6 ACPO Crime Committee, which has a pivotal role in leading the police service forward on these issues, agreed in September 1999 a revised organisational structure to facilitate progress (Figure 1).

Figure 1: Organisational structure of ACPO groups



- 1.7 The task of the ACPO/FSS Joint Consultative Group will be to progress towards a strategic joint ACPO/FSS approach.
- 1.8 This overarching body will be supported in its work at ACPO regional level by newly configured Regional Forensic Science Groups reporting directly to the joint consultative group. These regional groups, geographically closer to local problems, provide a multidisciplinary driving force to promulgate the effective use of forensic science across the country. An ACPO officer and the Scientific Support Manager (SSM) will represent each force at the regional forum.
- 1.9 The function of the newly formed 'Forensic Sciences Project Monitoring Group' will be to manage research initiatives, encourage innovation and spread good practice. Such an approach should give focus, direction and clarity, avoiding duplication and confusion. Her Majesty's Inspector welcomes these developments.
- 1.10 How forensic science fitted into force strategies and plans and in particular into the crime strategy was not clearly understood by operational officers and sometimes not even by senior detectives. ACPO policy developments in this dynamic field were not always easy to track during the inspection. It is perhaps therefore not surprising that at an operational level there was some lack of understanding.
- 1.11 On the other hand, ACPO and the service have a right to expect key individuals to have a sound working knowledge of critical strategic documents such as UFSE. The inspection found awareness to be strictly limited and consequently use of UFSE was limited for the most part to those forces that had the bonus of a member of staff who had contributed to the production of the document.

Point of Note

National Conference of Scientific Support

After each conference a distillation is produced in an easily digestible format called 'The Informant'. The newsletter is produced in black and white on A3 paper. Copies are circulated to each force, and if there are insufficient then it is designed for photocopying. This allows non-delegates an insight into the current topics being aired at the national level.

RECOMMENDATION 1

- 1.12 Her Majesty's Inspector recommends that ACPO and chief officers ensure that their strategy and supporting policies on the use of forensic science to tackle volume crime are up to date, known and understood by operational officers.

Suppliers of Forensic Services

- 1.13 ACPO policy is that the Forensic Science Service (FSS) is the principal provider of forensic services to the police and this is supported by the government. The FSS is a Home Office Next Steps Agency and became a Trading Fund in April 1999. At present the FSS remains the major provider although there are a number of alternative suppliers of forensic services in the private sector.



Managing the Science

- 1.14 Forces are generally satisfied with the standard of service irrespective of the source of that service. Concern was expressed by some senior officers in the course of the inspection regarding the closeness of the relationship between ACPO and FSS at the strategic level. Her Majesty's Inspector understands both the concerns and the financial pressure on forces but recognises the importance of the primacy of the FSS position. Without access to the core volume business the capacity of FSS for research and development would be adversely affected.
- 1.15 Such work is fundamental to the service reaping the reward of cutting-edge developments of a dynamic science. This is consistent with both the 'challenge' and 'competition' requirements of a 'Best Value' regime. The contribution of other providers is not underestimated and their involvement in the Regional Forensic Sciences Groups meetings is an opportunity for their voice to be heard.
- 1.16 The FSS will undergo a quinquennial prior options review during this financial year. This will consider the status of the FSS and should make the future more clear.

Leadership

- 1.17 It is the ACPO team within a force that, working with the Police Authority, sets the overall strategy for achieving force objectives. This requires that all of the strands of activity within a force are welded together to give maximum effect. Within that overall strategy there remains a need for committed leadership of the various strands, including that of forensic science. Her Majesty's Inspector was concerned to discover that too often the required championing of forensic science was absent. Whilst forces had usually placed forensic science within the portfolio of an individual ACPO officer, all too often this had little impact. Some police officers and other key staff did not know which of their ACPO team had responsibility for scientific support, whilst others were sceptical about the fulfilment of the role.
- 1.18 The absence of an active head at chief officer level has a profound effect on the forensic science capability of a force. Without active leadership the strategic function of forensic science within the overall strategic thrust of a force remains opaque. Only the force ACPO team can determine the balance of competing public demands and the overall deployment of finite resources to respond to those prioritised demands. Any gap in leadership at ACPO level will not be adequately filled elsewhere in a force.
- 1.19 The devolvement of functions from Headquarters (HQ) to Basic Command Units (BCU) has been a trend in police management over the last few years. It is often at BCU level that staff are best able to respond to local needs and in so doing secure improved value for money. There remains however a need for corporacy and HQ control and influence.

- 1.20 Cohesive influence and clear direction from ACPO level are necessary to ensuring that locally inspired initiatives, many in themselves laudable, are not duplicated, with consequential waste of valuable time and effort. One BCU visited had piloted a footwear project using digital cameras. The force SSM was unaware of the work or the results.
- 1.21 The competitive edge between BCUs does not need to be stifled; it can often be the motivational influence to progress. But a coordinating, or at times directing, hand is necessary to ensuring that the product of progress is shared widely as good practice.

The Role of the Scientific Support Manager

- 1.22 The SSM is a key figure in securing the optimum benefits of forensic science for a force. There are variations between forces as to where the SSM fits within the force structure. There are also differences in the professional background of the individuals who perform the role, with 60% across the country being civilian support staff and the remaining 40% being police officers appointed to the role for varying periods of tenure. Her Majesty's Inspector anticipates that the increase seen over the past few years in civilian support staff as SSMs will continue and welcomes that trend.
- 1.23 The variation in structural positioning of the SSM within a force is accepted as a product of the variety of force structures. Her Majesty's Inspector considers these variations are inevitable and acceptable provided that there is some consistency in the role and core responsibilities of the SSM across the service.
- 1.24 Her Majesty's Inspector believes that the role of the SSM should encompass the following core responsibilities:
- ❑ The development of strategy for scientific support and an input into overall force strategy regarding crime.
 - ❑ The development of policy for all forensic activity including fingerprint bureaux and chemical laboratories.
 - ❑ The development of monitoring systems.
 - ❑ Quality control of processes.
 - ❑ Identification and dissemination of good practice.
 - ❑ Inspectorate/Best Value.
- 1.25 In forces visited, however, the inspection found that, even where these responsibilities had been incorporated into job descriptions, the reality was that SSMs rarely performed them at all.
- 1.26 The inspection found that an SSM is best able to contribute to the



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strategic planning process as a member of the senior management team. Whilst some SSM report to the head of Criminal Investigation Department (CID) others are managed by other senior detectives. That the role is fulfilled is more important than the line arrangements but chief officers need to satisfy themselves that the influence of the role is not prejudiced by the SSM being positioned at too low a level of management.

- 1.27 In addition to ensuring that the SSM is able to carry out the core functions of the role it is equally important that opportunities for professional dialogue are fully exploited. It is not satisfactory, for example, that in one force conversation between the SSM and his line manager was limited to performance data each month. The same SSM was excluded from force meetings of BCU crime managers.

Management of Scientific Support

- 1.28 It is perhaps not surprising that if the SSM has difficulty commanding the right level of influence then the ability of Scenes of Crime Officers (SOCOs) to be effective can be limited. Irrespective of whether management of SOCOs was vested in the SSM at HQ or devolved to BCU commanders, some common critical themes emerged during one-to-one discussions and focus groups:
- ❑ Day to day management of SOCOs is often poor with little policy to guide or set standards to achieve.
 - ❑ Competency framework for SOCOs is yet to be developed.
 - ❑ No refresher or other training to Minimum Effective Training Levels (METL)
 - ❑ Absence of meaningful appraisal even where SOCOs were intended to be within an appraisal scheme.
 - ❑ Little opportunity for career development.

- 1.29 It is not surprising therefore, against the commonality of these themes, that both SOCO and fingerprint staff often felt frustrated and undervalued. This apparent lack of concern for the management and development of people who are central to crime reduction is not acceptable. Managerial attitudes towards staff were too often dismissive or cavalier, the latter epitomised by one head of a fingerprint bureau who had failed to complete appraisals:

"I've been too busy and the staff have not asked for an appraisal".

- 1.30 If the service is to retain, build and sustain the morale of skilled and committed staff this approach to management must change and quickly. In addition to treating these key personnel properly, forces should not lose sight of the fact that their expertise needs constant updating lest they are overtaken by the developing science. Training is an investment, not a liability.

Point of Note

Competency testing

Essex Police in partnership with the FSS has devised a system of competency testing for its SOCOs. This involves objective testing, both theoretical and practical, of officers dealing with a mock incident. This package is designed to test scientific support knowledge, procedures and practical ability. Due to be introduced shortly, it will be a regular feature of SOCO quality assurance.

Point of Note

West Mercia Police has a regular in-force publication on the latest developments and information that impact upon the Scientific Support Department, both internal and external.

Not only does this promulgate information to department members, but it also provides a means by which the devolved SOCO can be kept informed of each other's and H.Q. departments' activities. It is circulated to every member of the SSU in addition to some senior managers.

RECOMMENDATION 2

- 1.31 Her Majesty's Inspector recommends that chief officers ensure that scientific staff are subject to regular performance review in order to maintain and improve professional competence.

Council for the Registration of Forensic Practitioners

- 1.32 Her Majesty's Inspector welcomes the establishment of the Council for the Registration of Forensic Practitioners, which is supported by the government. It aims to promote high standards of forensic practice to enhance public confidence in the use of forensic science. A new Code of Conduct for Forensic Practitioners is being drafted by the council and will form the basis for professional registration. SOCOs will be eligible to register. Every applicant will accept it as the standard against which misconduct allegations will be judged. It is the view of Her Majesty's Inspector that this is a significant development in enhancing the status of practitioners of scientific support within forces. Police forces are encouraged to support registration of eligible personnel.

SOCOs – where do they belong?

- 1.33 It is accepted that it is necessary for individual forces to create an organisational structure that works for them. What is of supreme importance is that the structure ensures that the work of SOCOs and their views are integrated into the wider organisation. Where SOCOs are devolved to BCUs it is important that responsibility is accepted by BCUs for their management.
- 1.34 Many SOCOs reported no sense of belonging to the investigative teams in their BCU. Those colocated with CID officers or proactive teams either at BCUs or HQs generally considered themselves better integrated and were more satisfied that there was productive communication.
- 1.35 Overall Her Majesty's Inspector estimates that the situation regarding team working has shown some improvement since the publication of the UFSE document. There is nonetheless room for further improvement if the necessary level of integration is to be achieved. Whilst it is accepted that the geography of some forces does not assist such integration, geography itself is a surmountable hurdle, not an impenetrable barrier.
- 1.36 Her Majesty's Inspector does not recommend any particular model for the structural positioning of SOCOs within the force. Their acceptance by investigative teams is much more important than whether they work and are controlled from HQ or BCU.

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- 1.37 The proportion of SOCOs who are civilian support staff is high (85% of staff inside scientific support units, including fingerprint bureau, are civilian). Historically, police officers employed as SOCOs may have had an advantage in achieving full integration into the investigative process. Full integration between police and non-police staff is, however, perfectly possible and has been achieved in many areas of police work including in some places scientific support.
- 1.38 In Kent Police SOCOs have been re-designated as Crime Scene Investigators (CSI) to emphasise the role and reinforce the principle that the personnel are full members of the investigative team. This is an interesting attempt to enhance the professional status of such officers that will require evaluation in due course.

Crime Scene Attendance Policy

- 1.39 Police forces have had to come to terms with the finite nature of SOCOs as a resource. All have had to formulate policies to prioritise SOCO attendance at crime scenes. The volume of crime in a particular force and the mix of those crimes in addition to the local geography are some of the determinants in formulating policy regarding which scenes will be visited by a SOCO. All of the policies in the following range have been encountered during the inspection:
- ❑ Attendance in support of force and BCU's policing priorities.
 - ❑ Blanket attendance at certain categories of volume crime, particularly residential burglary.
 - ❑ SOCO attendance determined by first police officer attending (sometimes within pre-set policy parameters).
 - ❑ SOCO attendance determined by Crime Desk staff.
 - ❑ Crime management sergeant determines against a matrix of intelligence and presumed solvability.
 - ❑ Assessment of burglary scenes by uniform officers with particular training.
- 1.40 The desire to maximise efficient use of SOCOs and avoid non productive scenes has led to the screening policies that are seen in most forces today. As will be seen in subsequent chapters, these policies appear not to be working and an opportunity to tackle key offences of volume crime is being lost.
- 1.41 This finding should be the main stimulus to determining the best options on scene attendance policy, which remains a matter for chief officers to determine force by force. Any option that centres on determination by first officer at scene or any other police officer must take full account of the training implications for those officers. The untrained officer cannot be expected to determine the issue solely on his own experience (this issue is discussed in detail later in the report).

- 1.42 The current pressure on SOCOs as a resource and the resulting attendance policies have left motor vehicle crime the poor forensic relation. In some forces the attendance of SOCOs at motor vehicle crime scenes is a rarity. Whilst the impact on the individual of vehicle crime is arguably less than that of those crimes affecting their person or their home, it remains a crime of substantial volume. The service commitment to overall crime reduction will not be achieved without a reduction in such volume and the service aims to deliver the government target of a 30% reduction in vehicle crime by 2004.
- 1.43 Motor vehicle crime must have a share of the detection benefits that forensic science can bring. Some forces deploy police officers with some forensic training to examine such crime scenes when other demands on SOCOs preclude their attendance. Police officers are themselves, however, an expensive resource and are stretched on other core tasks. This cannot be a complete solution.
- 1.44 The low level of forensic science activity around motor vehicle crime should prick the conscience of the service. The issue needs a fresh approach and that need is reinforced by the rapid development of DNA technology. There may be an answer. It should be possible for non-police staff to be recruited as forensic vehicle examiners. Their training would not need to be as extensive as that of SOCOs and they could be paid less. This is an option that is beginning to emerge in crime scene examination and which needs more research by forces, ACPO and the forensic science providers. Her Majesty's Inspector urges that such work be done quickly.

Point of Note

Scene Examiners:

Northamptonshire employs SOCO aides to undertake some low-level examinations such as vehicle crime. These officers gain substantially more identifications than SOCOs due to the highly productive nature of the crimes they examine. They are employed on pay scale 3 - 4 and do not work shifts. Their training is done in-house, saving extensive external training costs to the force. A cost-effective resource making significant contributions.

Performance Indicators

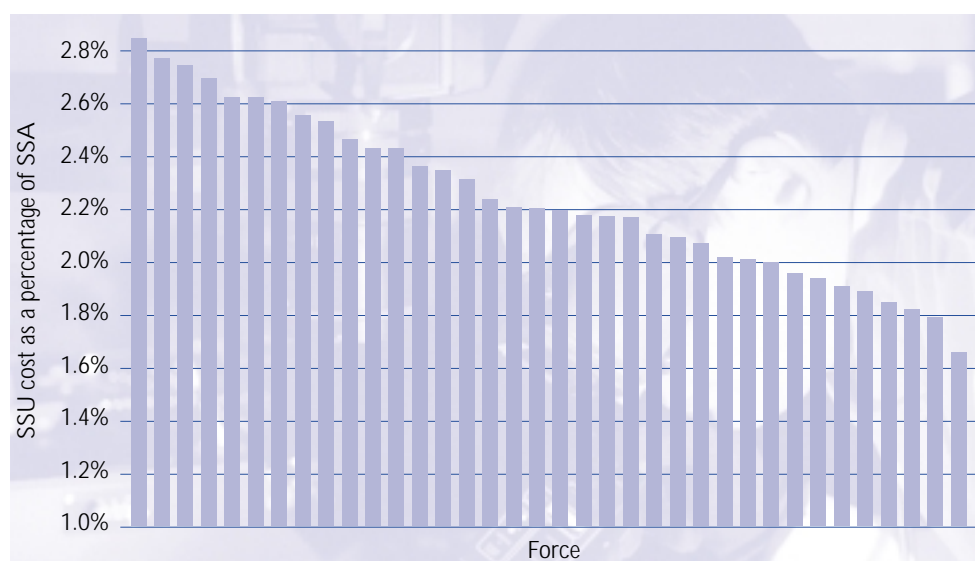
- 1.45 The paucity and questionable quality and accuracy of available performance data on the use of forensic science has made it very difficult for Her Majesty's Inspector to compare the use and effectiveness of the scientific support function. The need for proper management information and performance data was a theme of UFSE. In response ACPO agreed that the National Training Centre for Scientific Support to Criminal Investigation (NTC) at Durham should collect the data from all forces.
- 1.46 Her Majesty's Inspector was alarmed to discover that many forces did not submit complete data (some not submitting any) for the last relevant year (1998/99). Of those that did the quality of the data was often below standard and unreliable.
- 1.47 Without reliable outcome based data it is difficult to see how chief officers can establish a benchmark by which to judge the relative performance of their own forces. They are denying themselves unique learning opportunities and it is a matter of conjecture how the comparative requirement of Best Value can ever be met in this aspect of

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force activity. Also without this data providers of forensic science services have difficulty in measuring their contribution to forces.

- 1.48 Figure 2 demonstrates the size of the spend on forensic resources as a proportion of the overall spend for forces in England and Wales. It illustrates the significant difference between high and low spending forces. It has not proved possible during the inspection to compare spend to results. The quality of data collected and supplied by forces was inadequate for that task. This is something that the service recognises and it is being addressed. That it should be is of the utmost importance.

Figure 2: Scientific Support Unit costs as a percentage of force standard spending assessment



- 1.49 The difficulty of the task of setting Performance Indicators (PIs) and then collecting the data is not underestimated but such a difficulty is not a rationale for inactivity. This matter needs the full attention of chief officers.

Forensic Submissions

- 1.50 All forces have systems in place to manage the submission of forensic samples. Her Majesty's Inspector found three basic models being operated:
- Local authorisation of submissions made after liaison with and screening by SOCOs.
 - Central authorisation and screening systems within HQ scientific support.
 - In some cases submissions went through both processes described above.
- 1.51 The purpose of all of the systems is to ensure submissions are appropriate for the required examination and that this examination will be of benefit to the investigation. Her Majesty's Inspector found efficient systems in all three models.

- 1.52 It was noted that SOCOs in one force reported being bypassed by officers submitting directly to the central authority. Whilst this obviously cuts down on time and bureaucracy, Her Majesty's Inspector is concerned to ensure that SOCOs are fully involved in investigations. They have much to contribute to the decision making process and should be generally considered as the first reference point by investigating officers for advice and guidance. Kent Police have developed a Forensic Evaluation Model designed to integrate crime and forensic investigation. This model addresses timeliness of submissions and requires that investigating officers and CSIs meet at the earliest opportunity. CSIs can authorise submissions which will cost up to £1,600; anything above must be routed to headquarters scientific support unit. Such a policy improves ownership and accountability ensuring appropriate questions are asked. The submission process is focused on problem solving and not evidence types (not can we do it, but is there any value in doing it?).
- 1.53 Evidence was received from officers in some forces indicating that forensic submissions even within force policies were being restricted by financial and not evidential considerations. This may or may not be true but was clearly believed by those officers. Her Majesty's Inspector understands the need for proper fiscal management and urges forces to have processes in place that ensure a proper evaluation of submission requests that will take account of the needs of each individual case. It is helpful if investigating officers are kept informed of submission decisions and the reasons why they are made.

Conclusions

- 1.54 It is disappointing to find that many of the recommendations and suggestions outlined in UFSE have not been taken up across the service. To be four years on with little improvement is unacceptable. The whole service must recognise that the use of forensic support is integral to reducing crime and work to make that a reality.
- 1.55 Chief officers will themselves need to provide the lead in the development of strategies, supported by structures that will allow the scientific support function to play a full part in the effort to reduce the number of victims of crime. This will require increased levels of awareness throughout the service and an understanding that SOCOs are full members of the investigative team.
- 1.56 The requirement to conduct Best Value Reviews gives the opportunity for full examination of forensic science management within forces.

2 Managing the DNA

Introduction

- 2.1 Deoxyribonucleic Acid (DNA) is a chemical, found in almost every human cell, that determines physical characteristics and is inherited from parents. DNA is unique to individuals (except identical twins) and upon analysis it is potentially capable of providing conclusive identification. The ability to analyse DNA is by far the most significant breakthrough in crime detection since the inception of fingerprint identification.
- 2.2 Technology does not yet permit examination of every single difference between the DNA of individuals. The current method analyses 11 areas on the DNA molecule, which does not quite provide a profile that is unique but gives a discriminating power, on average, of 1 in 1,000,000,000. DNA can be obtained from most bodily fluids or tissue.
- 2.3 Offenders leave samples of their DNA at crime scenes and developing DNA technology makes them ever more likely to be found. Recent developments in the capabilities to collect, analyse and search against a database of known individuals' DNA are beginning to have a significant impact on crime detection and also on crime reduction. There has been a revolution in crime scene examination as a result of DNA analysis: this has the potential as the technology develops to allow examination of the smallest amounts of tissues and fluid.



The DNA Database

- 2.4 The Criminal Justice and Public Order Act 1994 (CJPO) which amended the Police and Criminal Evidence Act 1984 (PACE), gave the police service in England and Wales powers to take non-intimate¹ DNA samples from persons charged or reported for recordable offences, that is those offences often involving violence or dishonesty considered to be more serious than most motoring or other petty offences.
- 2.5 These samples are commonly referred to as Criminal Justice (CJ) samples. At the same time as the power to sample came into effect, 10th April 1995, the National DNA Database (NDNAD) became operational. CJ samples are checked against the database and if a match is found between a crime scene and a CJ sample then a second or evidential sample is taken from the suspect. So the CJ sample provides the intelligence lead, and the evidential sample the evidence for court.

¹ A non-intimate sample, as defined by Section 65 of PACE act 1984, includes a sample of hair other than pubic hair, a swab taken from the mouth and saliva.

- 2.6 The NDNAD is a single, central database that holds profiled data derived from CJ samples and DNA evidence found at crimes scenes. The FSS is the custodian of the NDNAD on behalf of ACPO.
- 2.7 To obtain CJ samples from offenders for all recordable offences from the beginning would have had substantial financial implications for forces. Also, when the NDNAD was set up the FSS had a limited ability to handle a large number of samples. Consequently, on the inception of the NDNAD, ACPO recommended to forces that the minimum level of sampling should include all those charged or reported for the following:
- Offences against the person
 - Sexual offences
 - Burglary offences.

Current Status of DNA

2.8 The creation of the NDNAD has enabled the use of DNA to be routinely applied to volume crime scenes. The current size² of the database is 752,718 CJ samples³ and 72,132 crime stains. Over the five year life of the NDNAD, forces have been notified of 62,142 person to scenes⁴, and 8,975 scene to scene, matches (or identifications). A breakdown by offence type is given in Figure 3. This is a substantial success story and one in which this country has led the world. The contribution of DNA to force intelligence has also been recognised with over 61% of all identifications contributing some form of intelligence⁵.

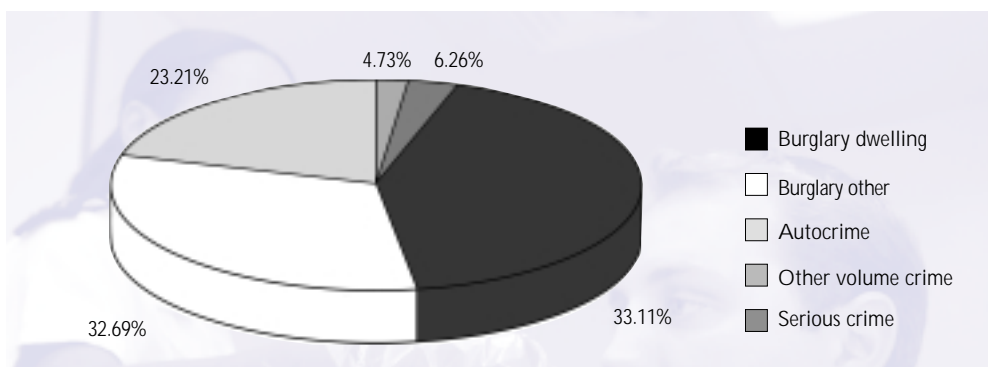
² Personal Communication – DNA Database 1st March 2000

³ Samples taken under the Criminal Justice and Public Order Act (1994)

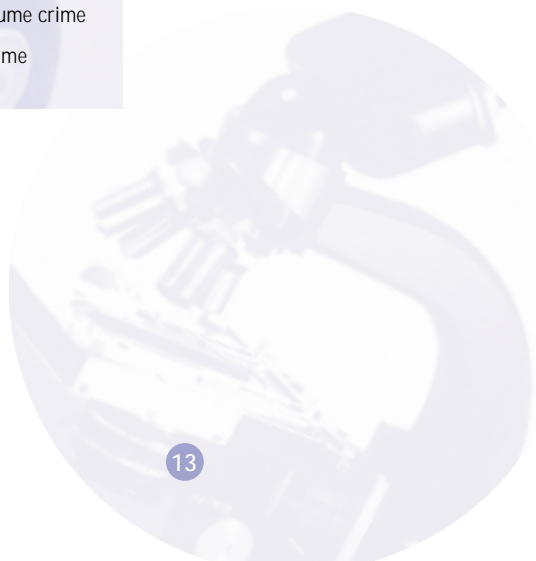
⁴ If a person-to-scene identification is confined to one force then it will count as a match: if it crosses force borders (as happens in 20% of cases) then it will count as two matches, one for each force.

⁵ ACPO Evaluation of DNA Report. M.J.Speakman, DCC, Humberside Police 1999

Figure 3: NDNAD matches by offence type (April 1997 – December 1999)



- 2.9 The government has recognised the benefits of DNA and is currently supporting two key projects:
1. The DNA Expansion Project. Established in order to increase the size of the NDNAD so that it might quickly match the size of the criminally active population. It includes:



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- £17 million matched funding for DNA database analysis for each of two years.
- Training of first officers attending crimes, scientific support staff and investigating officers.
- Establishing an elimination database of front line police staff.

2. The FSS Pathfinder Project is a Home Office sponsored project being undertaken within two forces. The purpose of the project is to contribute to reducing crime, tackling attrition and increasing public confidence in the criminal justice system by assessing the effectiveness of applying enhanced forensic techniques to scenes of volume crime.

- 2.10 All these projects have been allocated substantial government funding which, to-date, exceeds £35 million, with the greatest proportion being earmarked for the Expansion Project, which "... over the next 2 years represents the first big step in the programme to expand the DNA database...".⁶

⁶ Home Office News Release 299/99

Sampling Policy

- 2.11 Home Office Circular No.16/95 'DNA Database' states that "All forces should have a clearly stated policy for sampling". All but one force visited could produce written policies.

- 2.12 Nationally⁷, it was found that about half of forces have expanded the original criteria of burglary, violence and sex offences to increase the category of offences for which CJ samples should be taken. Seven forces now sample for all recordable offences and fifteen other forces have increased their criteria over and above the original ACPO guidelines, mainly to include drug and vehicle related crimes. Some forces also allow some discretion to officers to take samples from people arrested for recordable offences outside current force policy but who are suspected of committing other offences.

- 2.13 During the inspection it was found that force sampling policies were not widely adhered to. There was evidence of substantial under-taking of samples. This failure ranged from 28% to 39% of samples, with the average being 33%. Thus, one third of the CJ samples which should have been taken according to force policies were not in fact being taken. If these figures are extrapolated from the forces visited to the national scene, and that does not seem unreasonable given the consistent findings, this could represent almost 70,000 samples being lost annually. This equates to the sampling activity of 7 medium size forces. Most worryingly, the inspection found occasions when samples for serious crimes such as sexual offences and robbery had not been obtained. The possible consequences of this are obvious.

⁷ ACPO/FSS/HMIC Consultative Group Forensic Audit Questionnaire, December 1999

- 2.14 In light of the extra government funding to increase the size of the NDNAD, Her Majesty's Inspector is most concerned that such large numbers of relevant CJ samples are not presently being obtained.
- 2.15 Only half of the 40 forces that responded to the ACPO/HMIC/FSS Audit had in place any form of monitoring system for measuring the compliance rate of their CJ sampling. Few of the forces visited had routine systems in place to monitor compliance and only a minority of those had examined the issue of compliance themselves (albeit not recently and not to a detailed degree).
- 2.16 Conversely there was evidence that samples are also being taken and submitted from individuals who were arrested for a recordable offence, but who fall outside of the force's sampling policy and have no other suspicious circumstances attached to them.

RECOMMENDATION 3

2.17 Her Majesty's Inspector recommends that chief officers urgently review their systems to ensure that sampling policies are both clearly understood and implemented. This will require that Performance Indicators are developed and monitored to ensure compliance.

- 2.18 In relation to DNA policy generally there is anecdotal evidence that, on occasion, policy is being adversely restricted by budgetary constraints. The inspection found a commonly held perception that forces were inclined to restrict crime scene DNA submissions when there was a need to revise budgets. Evidence was found of one force where DNA submissions reduced dramatically as the financial year-end approached. The timeliness of DNA submissions (discussed later in this chapter) is critical to the success of DNA as an investigative process. Proper planning and budgetary controls are essential to ensuring an even allocation of resources through the year and offering a consistent standard of service to victims.
- 2.19 The inspection found that because forces are charged for DNA services there is a heightened awareness of the cost to a force when compared with other in-force means of detection, such as fingerprints and surveillance, where the costs remain hidden. The ability to compare DNA, as a method of crime reduction, will have to be carefully, and objectively, considered against other policing methods in order to ensure best value.

Managing the DNA

2.20 Attempts have been made by forces to determine the true cost to the force of a DNA identification and the cost per detection. No common methodology has been employed and Figure 4 represents the extremes encountered:

Figure 4: Computed costs of DNA identifications and related detections

	Cost per identification	Cost per detection
Minimum	£443	£788
Maximum	£13,114	£2,342

2.21 The differences can be seen to be so wide that anyone considering the cost of using DNA has to be very careful as to how the figures were derived. This is particularly the case where senior officers responsible for planning budgets are considering the efficacy of various means of investigation. It is clear that the costing methodology can range from simple totalling of invoices to complex calculations of the cost of time used in the processes.

PNC Markers and Acquittals

2.22 The NDNAD must be informed⁸ of all acquittals, discontinuances, etc., in order to remove the information from the database, otherwise the sample is being held contrary to procedures. Identifications relating to such samples have in recent cases been deemed inadmissible for evidential purposes.

2.23 Data supplied by the NDNAD indicates that in 1998/99 over a third of forces for which information is available notified the NDNAD of a non-conviction rate of over 20% (see Figure 5)⁹. If the non-conviction rate for that year was assumed to be more or less the same in all forces and if the true rate was taken as 20% then over the life time of the NDNAD many thousands of samples, perhaps as many as 50,000, may be being held on the database when they should have been taken off. Whether the non-conviction rate is the same in all forces is uncertain. There may for example be variations in sampling policies linked with differences in the acquittal rates for certain offences, but it is difficult to imagine that this has more than a marginal affect.

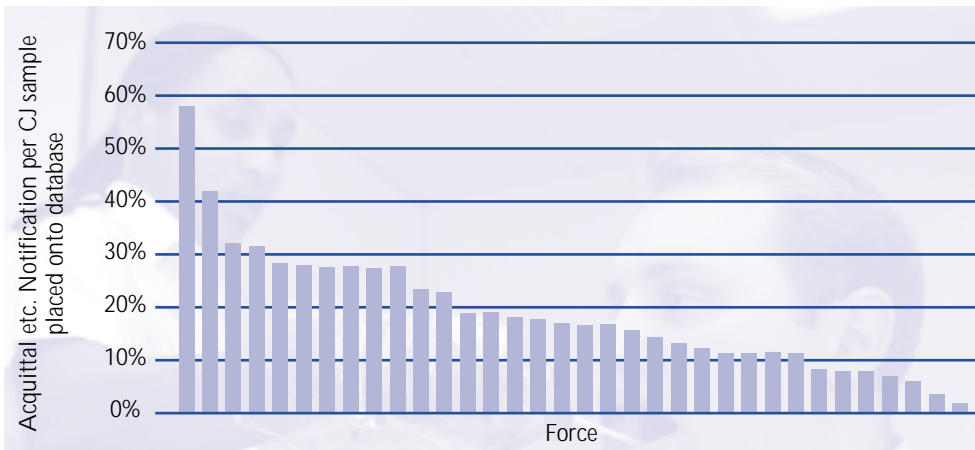
2.24 Accurate data is not available to determine the true level of discontinuances and acquittals from charging to disposal. In 1998, however, of all persons proceeded against at court for indictable offences falling within the original ACPO CJ sampling guidelines, over 45% were not convicted (this reduces to 33% for all offences). Thus the position may be even worse than shown using the 20% estimate. There is

⁸ National DNA Database Home Office Circular No.16/95

⁹ Some forces have achieved very high notification rates, e.g. 60%, which is a product of the 'snap-shot' yearly figure, and the force's change of sampling policy. Policy in the first part of the year was to sample for all offences and in the latter part only a minority of offences, but the notification rate for the whole year would be predominately for the former category's samples that take time to go through the system.

a problem here; the precise size of it cannot be accurately measured other than by work in forces and in audit systems in the NDNAD.

Figure 5: CJ profile removal notifications to NDNAD (1998/99)⁹



2.25 Her Majesty's Inspector does not believe that such samples are being deliberately kept on the system in the hope that they might be of use in the future. The problem is one of carelessness and lack of audit systems, not one of malpractice. One force has already faced litigation on this matter and there would seem to be the potential for many more similar actions¹⁰. Whilst a number of forces have identified the issue and are attempting to address it, many have not.

¹⁰ National DNA Database User Board Minutes 13th May 1999

2.26 In addition the NDNAD have voiced their concern that not all forces are removing detected offences from the database. If not removed promptly, the recurrence of DNA hits on already detected offences can cause unnecessary administrative difficulties for the NDNAD and forces.

2.27 The inspection found a lack of compliance with DNA Markers on the Police National Computer (PNC), particularly in relation to the DNA Confirmed Marker. If a Confirmed Marker is present on an offender's record that person does not require sampling. During force visits it was found that 9% of all persons sampled had Confirmation Markers and as a result the samples were taken unnecessarily. The inspection was also given anecdotal evidence to suggest that some forces may not have adequate procedures in place to ensure that other DNA related PNC markers are updated and removed when necessary.

2.28 Chief officers should ensure that their processes with regard to DNA markers are dealt with appropriately and expeditiously and in accordance with the ACPO Compliance Strategy for PNC.



Managing the DNA

2.29 The issues raised in this section are not a bureaucratic chore but are essential to compliance with the law and to fostering public confidence in police guardianship of this important database. The introduction of the first database of this type in the world could have been expected to produce some administrative problems, and it has. However the extent of those problems is now such that urgent action is needed.



RECOMMENDATION 4

2.30 Her Majesty's Inspector recommends that chief officers ensure that they have systems and procedures in place in order to comply with the requirements of Home Office Circular 16/95 on the National DNA Database and the Data Protection Act 1998 and an audit of the national DNA database should be undertaken to help in this process.

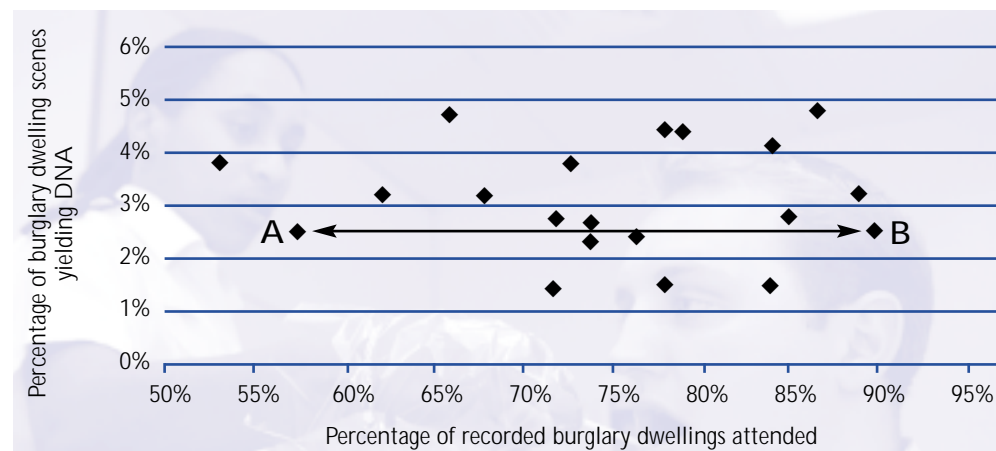
2.31 Her Majesty's Inspector is aware of the ongoing debate concerning the requirement to destroy CJ samples on discontinuance of proceedings or acquittal. Recommendation 4 is made in light of the current legislation and it is proper that forces ensure compliance. However, in the general interest of crime detection and reduction perhaps the time has come to revisit the legislation to consider whether all CJ samples, provided they have been obtained in accordance with PACE, should be retained on the NDNAD to provide a useful source of intelligence to aid future investigations.

Screening of Scenes

2.32 The inspection found a variety of policies used to determine whether or not a SOCO attended burglary dwelling scenes. Broadly, these policies are intended to maximise the effectiveness of the SOCO in the expectation that more forensic evidence, including DNA, will be forthcoming from the selected scenes. Data is available from 20 forces that provided information for the national performance indicators¹¹ regarding scene attendance and recovery rates for burglary dwelling. See Figure 6.

¹¹ Performance Indicators for Scientific Support Annual Return 1998/1999

Figure 6: Declared DNA yield rates vs. attendance rates for burglary dwellings

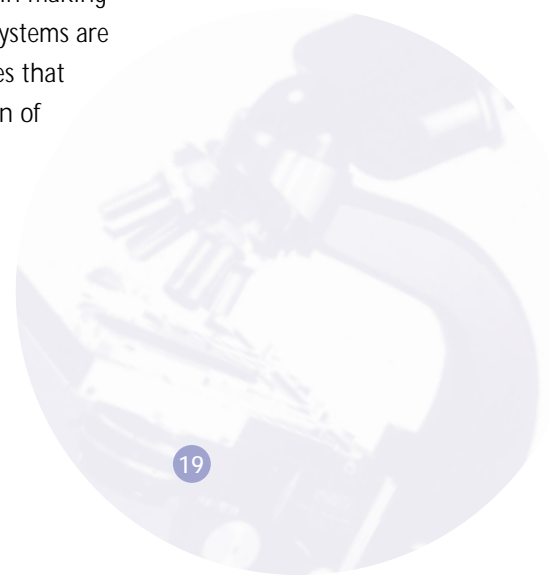


- 2.33 Figure 6 shows that in force A approximately 57% of burglary scenes are attended by a SOCO and DNA recovered from 2.5%. Force B recovers the same proportion of DNA having attended 90% of scenes. There is no correlation between the percentage of recorded burglary dwellings scenes examined and the recovery rate of DNA per scene examined. A similar situation is evident in the recovery of finger-marks (see Chapter 3).
- 2.34 If selectivity (i.e. scene attendance policy) were working it would be expected that those forces attending a low proportion of their offences would achieve a higher DNA yield. Conversely those forces attending a high proportion of their offences should achieve a lower DNA yield. This is not evident. There may be a number of variables that impact on the data but it is not uncommon for first officers attending to request a SOCO and this may support the argument that they are not particularly effective in identifying DNA productive scenes for examination. UFSE and "Forensic Science and Crime Investigation"¹² both commented on the weak knowledge base of officers: *"Present systems are poorly placed to yield the most fruitful outcomes"*¹². In most forces visited the first officer attending had the responsibility to decide on SOCO attendance (although there were alternative local initiatives). In one force specialist officers decided whether to request the SOCO, and one Crime Management Unit used a telephone investigation technique to assess whether to arrange a SOCO visit. In another force, which utilised scene assessors, not all of them were trained prior to deployment.
- 2.35 In respect of burglary dwelling the evidence does not support the validity of scene attendance policies where crimes are screened out or scene assessed. Therefore, provided there are sufficient SOCOs, forces could expect to increase the quantity of DNA recovered from burglary dwelling scene examinations by attending all such scenes. It is conceivable that there is a point of diminishing return beyond which investment in additional SOCO resources will not be matched by equivalent output. During the course of the inspection Her Majesty's Inspector was not presented with any compelling evidence that this point had been established with confidence. The Pathfinder project (see paragraph 2.9) should be useful in making that point more discernible. It is clear, however, that existing screening systems are denying access to the detection of crime. Her Majesty's Inspector believes that in the interim the organisational prejudice should favour the examination of all burglary dwelling scenes by SOCO.

¹² 'Forensic Science and Criminal Investigation' Tilley and Ford, PRG Paper 73, 1996

Collection of Scene Samples

- 2.36 The variation in the DNA yield rates illustrated in Figure 6 is predominately due to either one or both of the following:
- The ability of the SOCO to identify and recover DNA material.
 - Force policy impacting on what may be recovered from scenes.



Managing the DNA

- 2.37 An example was found where scene examiners in one BCU were recovering DNA from 3.5 times as many scenes examined as another BCU within that force. There is evidence from other forces that such variation also exists between SOCOs within one BCU. Inevitably there will be differences due to experience, skill and organisational arrangements and forces need to carefully examine those differences to learn all of the lessons of best practice that can be learnt.

Submission of Scene Samples

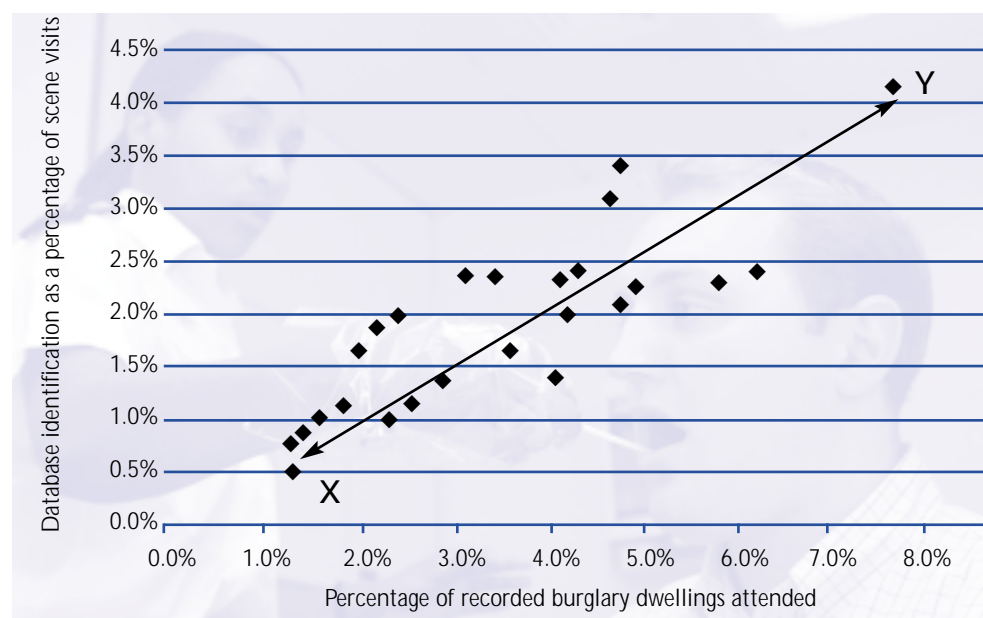
- 2.38 Submission¹³ is not the same as collection. There is evidence that for various reasons samples are being withheld from analysis. In one force, the SOCO collection rate for DNA is 4.5% per scene examined and yet the laboratory submission rate is 2.02%. Another example found shows that DNA is not submitted until finger marks have been checked. Forces that habitually fail to submit for analysis all DNA recovered may be denying themselves the opportunity of obtaining more identifications.

- 2.39 Delaying submissions should be regarded as poor practice, unless there are robust administrative procedures in place to avoid delays of more than a few days. Such a system should also be able to bring forward samples that may have been overlooked due to officers not complying with the process, or mislaid documentation, etc.

- 2.40 Figure 7 has been compiled using identification data supplied by forces and data supplied by the FSS in relation to submissions.

¹³ This is taken as the number of BO4 cases submitted to the FSS. The alternative suppliers had little impact in the period 1998/99

Figure 7: NDNAD identifications vs. DNA laboratory submissions



- 2.41 Force X submits DNA from 1% of the scenes it examines; it achieves an identification for every two samples submitted. Force Y submits DNA from 7% of the scenes it examines; it achieves an identification for every two samples submitted. Figure 6 shows a strong correlation¹⁴ (.80) between submissions per scene and identifications per scene. It is possible to predict, within the ranges given in the figure, that for every two samples submitted to the laboratory a force could expect to yield one identification. Put simply, the figure shows consistently that the more DNA submissions that are sent for analysis, the more identifications can be achieved.
- 2.42 Analysis of Figure 6 indicated that more burglary scenes examined would lead to more DNA recovered. It is known that not all DNA collected is submitted for analysis. Figure 7 indicates that approximately every two submissions can lead to one identification. The implications for the service in all of this are significant. If the 20 forces shown in Figure 6 represent the national picture, then on average there is an attendance rate of 75% and a yield rate of 3%. If the national average were raised to that of a high performing force, 84% scene attendance and 4.2% yield rate, then the number of identifications could be increased by 57%. It is incumbent on forces to ensure that every opportunity is taken to exploit the use of DNA evidence.

¹⁴ Coefficient of correlation ranges from 0 indicating no relationship to 1 indicating a perfect relationship.

RECOMMENDATION 5

- 2.43 Her Majesty's Inspector recommends that chief officers urgently review their SOCO attendance policy for volume crime and their DNA submission criteria.

DNA Units

- 2.44 The majority of forces visited had Central Submission Units (responsible for the collation and submission of force-wide samples at one geographic location). These varied in their scope, function, responsibilities, staffing and structure. Whilst some staff exhibited a good level of up to date knowledge of DNA processes, some did not.
- 2.45 Her Majesty's Inspector encountered a practice in some forces designed to minimise CJ sample rejections at forensic laboratories as a result of incorrect form filling by the sampling officer. CJ sample bags were left unsealed to allow force DNA units to rectify any errors prior to dispatch to the laboratories. Her Majesty's Inspector is most concerned by such practice and believes that this raises issues concerning the integrity of the samples. Forces must follow the guidance provided by the FSS.

Managing the DNA

2.46 The following issues were also found:

- ❑ A wide variation in the availability and use of IT
- ❑ Lack of formal training for most staff.
- ❑ Little evidence of written guidance or policies for staff reference.
- ❑ Poor monitoring of error rates.
- ❑ Little performance management information.
- ❑ Administrative errors not rectified.
- ❑ Inadequate dispatch or delivery service security arrangements.
- ❑ Inadequate storage of samples.
- ❑ Inadequate processes for the retaking of failed samples.

2.47 Despite the above list of matters to be corrected, the existence of a DNA unit is viewed as good practice. There is a range of tasks that can be assigned to these units (a checklist is given at the end of this chapter). Benefits accrue from co-ordinating DNA functions within one unit, such as limiting the ownership of processes to fewer bodies and reducing lines of communication.

2.48 Her Majesty's Inspector suggests that forces review their use of DNA units in order to increase the efficiency of their DNA processes.

Conclusion

2.49 As DNA technology continues to develop, the service will need to ensure that training and awareness in relation to DNA is being dealt with effectively. There is a need to ensure that CJ sampling policies are being adhered to and that sampling opportunities to expand the NDNAD are not being lost. The service will also need to ensure that scene attendance and submission policies do not restrict its ability to realise the potential of DNA.

2.50 The government has shown a substantial commitment to the development of the NDNAD by investing considerable resources. It is therefore vital that the service is able to demonstrate its full commitment to the recovery of DNA material wherever possible in order to detect crime and reduce offending.

Check list of functions that could be performed by a DNA unit

- ❑ Prevention of unnecessary CJ sample submissions.
- ❑ Correction of administrative errors in documentation on CJ samples.
- ❑ Updating of PNC markers.
- ❑ Managing of duplicate CJ sample submission if profile already exists, but is not confirmed.
- ❑ Quality control of CJ submitted samples.
- ❑ Administration of re-sampling requirements if CJ samples fail.
- ❑ Acquittal notifications to the NDNAD.
- ❑ Storage of scene samples pending authorisation.
- ❑ Updating crime records with reference to scene sample submissions.
- ❑ Handling of DNA identification information as first point of contact from the NDNAD.
- ❑ Production of performance indicators for scene sample outcomes.
- ❑ Production of performance indicators for CJ sampling.
- ❑ Production of performance indicators for outcomes of identifications.
- ❑ Budgetary administration.

