PATHOLOGICAL ERROR: REACTING TO THE LIMITS OF EXPERTISE IN LEGAL PROCESS

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ABSTRACT

The application of medical expertise within a legal context presents a number of difficulties that demand consideration if the courts are to continue to rely upon complex medico-scientific evidence in criminal cases. Using examples from England and Wales, this article examines how miscarriages of justice have systematically resulted from the expert testimonies of paediatric forensic pathologists in criminal cases involving Sudden Infant Death Syndrome (SIDS). Although there are regulatory bodies in place to ensure that forensic pathologists conduct themselves professionally, we argue that the courts must also recognize the intrinsic limits to their expertise. Paediatric forensic pathologists are 'gate-keepers' who determine how medical and legal institutions will deal with child fatalities when the cause of death is suspicious or unascertained. Over the course of their infant death investigations, paediatric forensic pathologists will make what are often subjective interpretations of complex data concerning the child's medical, social, and familial histories. Such interpretation is open to dispute, so over-reliance upon a particular expert witness increases the likelihood that a verdict will be declared unsafe upon review. Comparisons will be made to the recent province of Ontario experience with the Goudge Commission of Inquiry into Paediatric Forensic Pathology and its subsequent recommendations.

Key words: Goudge Commission, Paediatric Forensic Pathology, Paediatric Forensic, Sudden Infant Death Syndrome (SIDS), medical evidence.

ÖZET

Hukuki bir çerçeve içerisinde tıp uzmanlığının kullanılması, mahkemelerin ceza davalarında karmaşık tıbbi delilleri esas alıp almaması hususunda göz önünde bulundurulması gereken bir takım güçlükler içermektedir. Bu makale, İngiltere ve Galler'den alınan bir takım örneklerden hareketle, adli tıp pediatri pataloglarınca verilen uzman beyanlarının nasıl yanlış kararlara yol açtığını, Ani Bebek Ölümü

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Sendromunu da (ABÖS) içeren bir şekilde incelemektedir. Her ne kadar adli patalogların usulünce faaliyet göstermelerini temin eden düzenleyici kuruluşlar bulunsa da, bize gore mahkemeler de onların mesleki yeterliliklerinin sınırlarını göz önünde bulundurmalıdırlar. Çocuk adli patalogları, tıbbi ve hukuki kuruluşların sebebi şüpheli veya tespit edilemeyen çocuk ölümlerini nasıl inceleyeceklerini belirleyen bekçilerdir. Çocuk ölümleri soruşturmalarının yürütülmesinde çocuk adli patalogları sıklıkla çocuğun, tıbbi, sosyal ve ailevi geçmişiyle ilgili karmaşık bilgileri subjektif olarak yorumlama eğilimindedirler. Bu tip yorumlar, belirli bir uzman görüşüne aşırı itibar göstermenin, verilecek mahkumiyet güvenilmez olarak nitelendirilmesine yol açabileceği endişesini haklı çıkarttığı oranda tartışmaya açıktır. Ontario bölgesinde son olarak Çocuk Adli Patolojisinin araştırılmasıyla ilgili kurulan Goudge Komisyonu tecrübesi ve buradan çıkan önerilerle ilgili kıyaslamalarda bulunualacaktır.

Anahtar Kelimeler: Goudge komisyonu, çocuk adli patalojisi, çocuk adli tıp, ani bebek ölümü sendromu, tıbbi delil.

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INTRODUCTION

Errors made by pathologists reporting on sudden deaths of infants in criminal cases have resulted in serial miscarriages of justice in the United Kingdom. These types of mistakes are exceptionally grievous for bereaved families, for the credibility of experts, and for the standing of the justice system. Conclusions presented by experts at trial are often cloaked in dense scientific and technical language which serves to imply that such results and testimony are factually unassailable by mere laypersons, but, in reality, these conclusions have been found to be interpretations affected by subjective inferences and shoddy case-construction. Despite the high costs of such errors, the problem of miscarriages has persisted for various reasons. Contemporary developments in sciences, particularly forensic sciences, have resulted in increasing appearances of experts before the courts and a growing pressure to seek out forensic evidence. In some cases, experts have become not only notable figures in their profession but also 'celebrity witnesses', appearing in successive suits, with their evidence becoming more irrefutable as time passes.

The focus of this article is an examination of the designation and work of forensic pathologists, how they relate to courts in England and Wales, and the impact of their testimony on convictions. We shall argue that, until judges and juries recognize the structural limitations to the evidence and testimony of forensic pathologists, miscarriages of justice in sudden infant death cases will continue to be generated. To demonstrate this point, it is necessary first to consider how the courts referee forensic disputes both pre-trial and at trial and, indeed, also act as gate-keepers in terms of what counts as an 'expert' and what counts as 'expertise'. Equally important is the impact of expert testimony on juries, whether they are equipped to pass verdicts on

scientific disputes, and how the courts can help them in that task. The discussion then addresses the inter-relationships between legal processes that produce verdicts upon experts, including the condemnation of their errors, and the processes which review legal or professional error. The foremost cases that can illustrate the role of experts, such as the leading paediatrician, Professor Sir Roy Meadow, and their forensic and professional implications, are those of Sally Clark and Angela Cannings. A review of those cases will also allow us to consider the specialised procedures in England and Wales that handled the response to the findings of miscarriage of justice in those cases, including the Attorney General to the Criminal Cases Review Commission (CCRC). As well as the individual cases dealt with through these official channels, independent and official inquiries have been convened, and their findings will also be taken into account, including from closely parallel controversies in Canada.

Controversy about forensic pathology has revolved principally around sudden unexplained death from unexplained causes of an apparently well baby aged from birth to two years (also known as Sudden Infant Death Syndrome (SIDS) or 'cot death'). SIDS was first accepted as a certifiable cause of death in 1971.[1] In the United Kingdom, about 300 babies die each year from such causes. It is the leading cause of death in babies between the ages of one to twelve months; in 1997, 27 per cent of post-neonatal infant death was attributed to SIDS.[2] It is estimated that deliberate action by a parent or carer is a probable contributory factor in around 14% of deaths registered as sudden unexplained death.[3]

I. EXPERIENCES WITH FORENSIC PATHOLOGY AND EXPERT WITNESSES

A. Personnel

Forensic pathologists become involved in death investigations as practitioners who conduct autopsies and when the cause of death is suspicious or unascertained. The pathologist consulted to undertake the autopsy will be listed on the Home Office Register of Forensic Pathologists.[4]

1 D. Armstrong, "The invention of infant mortality" (1986) 8 *Sociology of Health and Illness* 211.

2 See P. Fleming et al., *CESDI/SUDI Report 1993-1996: Sudden Unexpected Deaths in Infancy* (Stationery Office, London, 2000) [Fleming]. For more research on a related injury causing sudden child death see C. Cobley & T. Sanders, *Non-Accidental Head Injury in Young Children: Medical, Legal and Social Responses* (London, Jessica Kingsley Publishers, 2006), or more generally L. Hoyano & C. Keenan, *Child Abuse: Law and Policy Across Boundaries* (Oxford University Press, 2010).

3 Fleming, *supra* note 3, at p. 126. A higher figure is estimated in other studies: R. Meadow, "Unnatural sudden infant death" (1999) 80 *Archives of Diseases in Childhood* 7; M. Green, "Time to put 'cot death' to bed" (1999) 319 *British Medical Journal* 697. Compare S. Limerick, "Not time to put 'cot death' to bed" (1999) 319 *British Medical Journal* 697.

4 http://www.npia.police.uk/en/docs/Current_Home_Office_Register.pdf.

Entrance onto the register of Forensic Pathologists is controlled by the Registration and Training Sub-Committee of the Pathology Delivery Board.[5] This Board succeeded in 2005 the Home Office Policy Advisory Board for Forensic Pathology, set up in 1991. The Home Office in conjunction with the Royal College of Pathologists developed the *Code of practice and performance standards for forensic pathologists* in 2004.[6] The Board's work is monitored by the National Police Improvement Agency on behalf of the Home Office.[7] Standards are developed also by the Forensic Pathology Specialist Group which supports the Forensic Science Advisory Council.[8] Some practitioners are university professors or hospital doctors, but around half operate in the private medical sector.[9] Forensic pathologists are now organised as part of seven regional practices (consortia) which support the coroners and the police authorities. Each practice must have a minimum of three registered forensic pathologists, and all registered forensic pathologists must be associated with a practice. This setting is designed to allow for the mutual oversight of standards. Dr Freddy Patel, who was criticised for his findings in a number of cases (including that of Ian Tomlinson, who died after being struck by a police officer during a G20 demonstration), was removed from the Home Office Register specifically because he was not attached to any practice.[10]

The investigation of the sudden and unexpected death of an infant requires that the pathologist reviews, not only the circumstances occurring immediately prior to the child's death, but also the child's previous medical, family, and social history, including past contact with the social service or justice system regarding issues of abuse and/or neglect.[11] Emergency

5 http://www.npia.police.uk/en/docs/PDB_constitution.pdf.

6 http://www.rcpath.org/NR/rdonlyres/5289B6B2-939A-4D4E-A4329BC1716F70B0/0/CodeOfPracForensicPath1104.pdf.

7 http://www.npia.police.uk/en/9507.htm.

8 http://www.homeoffice.gov.uk/publications/agencies-public-bodies/fsr/forensic-terms-of-ref?view=Binary.

9 Private sector input may also be illustrated by GSTS Pathology, a partnership between Guy's and St Thomas's hospitals and Serco Ltd: http://www.gsts.com.

10 See P. Lewis and C. Chambers, 'National: G20 pathologist is suspended from Home Office register' *The Guardian* 3 July 2009 p.8. The assailant, PC Simon Harwood, is being tried for manslaughter.

11 See W. Sturner, "Sudden infant death syndrome : The Medical Examiner's viewpoint", in J. Dimmick and D. Singer (eds.), *Forensic Aspects in Pediatric Pathology* (Perspectives in Pediatric Pathology, Vol. 19, Basel, Karger, 1995), p. 76.

care and resuscitative efforts should also be documented, as attempts at resuscitation may themselves cause injury. In addition, a careful examination of the crime scene is necessary, as well as a post-mortem examination and analysis of laboratory findings (including bacteriological, histological and toxicological analyses), and certification of the cause of death by the attendant doctor.[12] It is in the next stage, as expert witnesses in court, where forensic pathologists have encountered the greatest difficulties, due in part to the fact that, when testifying in court, their frame of reference is based on medical opinion, itself based on complex and equivocal data,[13] whereas the lawyers seek to coax out a high level of legal proof and also, for the sake of the jury, simplicity.[14]

A further complication is that paediatric pathologists may be called to testify at both criminal court and family court.[15] Aside from the lower standards of proof in civil cases,[16] when presenting expert testimony[17] in family court, pathologists must consider what is perceived to be the best interests of the child, rather than liability or fault. In particular, there are difficulties with pre-litigation child protection conferences, given that a great majority of claims of child abuse are unsubstantiated.[18]

12 *Ibid* pp.76-84.

13 The point may be exemplified by the Independent Inquiry into Histopathology Services (University Hospitals Bristol, Bristol, 2010) para.101 sustaining 26 cases of serious error but still declaring the department's service to be 'safe'.

14 See Report of a Working Group convened by The Royal College of Pathologists and The Royal College of Paediatrics and Child Health, *Sudden Unexpected Death in Infancy* (2004), available at http://www.rcpath.org/index.asp?PageID=455; M. Coen and L. Heffernan, "Juror comprehension of expert evidence" (2010) *Criminal Law Review* 195.

15 See E. Fish, L. Bromfield and D. Higgins, "A New Name for Munchausen Syndrome by Proxy: Defining Fabricated or Induced Illness by Carers" (2005) 23 *Child Abuse Prevention Issues* 1, '… different legal proceeding, not only have different aims, but different rules of evidence, and different standards of proof,' p.7.

16 Miscarriage of justice cases relating to sudden infant death have not impacted on standards of proof for child protection cases, which remain those of civil proceedings. See *Re B (children) (sexual abuse: standard of proof)* [2008] UKHL 35.

17 For an overview of how expert testimony is weighed in civil trials, see Deirdre Dwyer, *The Judicial Assessment of Expert Evidence* (Cambridge University Press, 2008).

18 For example, at year end of March 2004, out of 68,500 cases where there was initial suspicion of child abuse, only 37,400 were subjected to child protection case conferences, and following further investigation 31,000 were ultimately found to be unsubstantiated. See C. Pragnell, "Child Protection Case Conferences – or Kangaroo Courts?" posted August 8, 2006 at http://www.fassit.co.uk/child_protection_conferences.htm.

Problems arise with these proceedings as there is often little differentiation between fact and opinion evidence, legally untrained individuals make decisions about placing children on the 'At Risk Registry,' there is much confirmatory bias throughout the proceedings, and there is an absence of clarity as to who constitutes an 'expert.' When testifying in criminal court, the foundational elements are different,[19] as are the stakes. In these latter cases, there is a higher burden of proof and the presumption of innocence.[20] It has been noted that doctors are not sufficiently trained in understanding the differences between the courts, nor do they understand the scientific foundation needed for expert testimony.[21]

In addition, there continues to be a shortage of available pathologists, due in part to the limited number of university departments offering this medical specialty. In 2004, a Working Group convened by the Royal College of Pathologists and the Royal College of Paediatrics and Child Health made the following observation:

There is only one paediatric forensic pathologist in the country. Throughout the whole of England and Wales there are just 40 paediatric pathologists, which means that they are thin on the ground and often unavailable at the crucial time. There should be a drive to increase those numbers but it has been recognized that negative media coverage is reducing the pool of paediatricians who will testify in court and particularly the number of trainees willing to enter paediatric pathology.[22]

This limited number of forensic pathologists and paediatric pathologists is likely to continue, given the recent high-profile cases in which the testimony of medical experts or pathologists was found to be defective. The courtroom is increasingly being viewed as a hostile environment by qualified professionals.

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19 See Report of a Working Group convened by The Royal College of Pathologists and The Royal College of Paediatrics and Child Health, *Sudden Unexpected Death in Infancy* (2004), p. 5; available at http://www.rcpath.org/index.asp?PageID=455. [Report]

20 See G. Edmond, 'Pathological Science? Demonstrable Reliability and Expert Pathology Evidence', in K Roach (ed.), *Pediatric Forensic Pathology and the Justice System*, (2008) Queen's Printer for Ontario, Toronto, p. 96.

21 Report, *supra* note 15 at p. 5.

22 *Ibid* at p. 8-9. The current Home Office Register lists 36 names.

Paediatric forensic pathologists have been described as 'gatekeepers', since their decision-making around the cause of death may likely determine how the medical and legal systems will deal with a child fatality.[23] Nonetheless, there can be dispute amongst expert paediatric pathologists regarding cause of death, as forensic investigation is an inexact science and 'cases of sudden infant death… are often indistinguishable from deaths involving intentional suffocation.'[24] In such cases, even the presence of injuries is not clear evidence of intent to harm and, often, 'far from being based on hard, indisputable 'facts,' infant death investigations involve subjective interpretation of the available evidence.'[25]

B. Evidence of Experts in English Courts

Evidence proffered by witnesses in criminal courts must adhere to strict standards of admissibility.[26] In general, witnesses must refrain from testifying about anything other than their own first-hand knowledge regarding the facts. Thus, opinion evidence is only allowed in exceptional circumstances. Experts may proffer opinions because they are 'expected to give the court information which falls outside the general knowledge of the judge or jury'[27] and to assist the trier of fact in making a decision regarding the importance of, and weight to be given to, certain evidence. Expert evidence is also exceptional in relation to the normal rules about hearsay. Expert witnesses may provide opinion evidence regarding the work of other individuals; the evidence on which they are providing an opinion, if taken alone, would be hearsay. However, hearsay evidence in this instance is usually considered admissible, given that much scientific research is collaborative and that it is possible to speak knowledgeably about accepted developments in a particular field without having personally conducted the research.

[23] N. Ballenden, K. Laster and J. Lawrence, "Pathologist as gatekeeper: Discretionary decision-making in cases of sudden infant death" (1993) 28 *Australian Journal of Social Issues*, 124.

[24] F. Brookman and J. Nolan, "The dark figure of infanticide in England and Wales: Complexities of diagnosis" (2006) 21 *Journal of Interpersonal Violence*, 878.

[25] *Ibid* p. 884.

[26] See M. Redmayne, "Expert Evidence and Criminal Justice" (Oxford University Press, 2001).

[27] T. Rothwell, "Presentation of expert forensic evidence" in P. White (ed.), *Crime Scene to Court: The Essentials of Forensic Science* (2nd ed., The Royal Society of Chemistry, Cambridge, 2004), p. 419. The forms of opinion were explored in *A County Council v K, D AND L* [2005] EWHC 144 (Fam).

Part 33.3 of the Criminal Procedure Rules 2010,[28] as well as section 127 of the Criminal Justice Act 2003, allow for expert witnesses to speak to either written or oral statements of evidence in court prepared by other experts. Furthermore, case law has demonstrated that judges can admit opinion evidence when the primary information presented is composed mainly or entirely of hearsay evidence. In *R. v. Abadom*,[29] the defendant appealed a conviction for robbery, based on the alleged inadmissibility of expert evidence described as hearsay. The expert witness in this case testified that the refractive index of a piece of glass found in the defendant's shoe was only found in 4 per cent of all glass, and this fact was then very strong evidence that the sample matched glass from the crime scene. His testimony was based on a construction of Home Office statistical tables, of which, the defence argued, he had no personal knowledge. In dismissing the appeal, the court found that the evidence given did not infringe the hearsay rule. As Lord Justice Kerr stated, '[o]nce the primary facts on which their opinion is based have been proved by admissible evidence, they are entitled to draw on the work of others as part of the process in arriving at their conclusion,' and they are encouraged to do so. Moreover, if an expert's report has not been contested, the report can then be put into evidence at trial, a further exception to the hearsay rule.[30]

Overall, the manner in which expert opinion evidence has been accepted by courts in common law jurisdictions has been neither straightforward nor coherent. What is apparent is that scientific evidence is being introduced in an increasing number of criminal trials and the frameworks of analysis for one discipline (science) are being put to the test in another (law). Accordingly, 'scientific evidence is an inescapable fact of modern litigation,'[31] and it has been argued that, 'although scientific evidence is

[28] SI no.60.
[29] [1983] 76 Cr. App. R. 48.
[30] P. Roberts, "Science, experts, and criminal justice", in M. McConville and G. Wilson (eds.), *The Handbook of the Criminal Justice Process* (Oxford University Press, Oxford, 2002) p. 276.
[31] E. Beecher-Monas, *Evaluating Scientific Evidence: An interdisciplinary framework for intellectual due process* (Cambridge University Press, NY, 2007) p.4.

not used in very many police investigations, its significance to debate is amplified because it is represented to be *the* most reliable category of evidence available.'[32] Given that forensic scientists are considered to be 'expert witnesses,' they can provide information to the courts on both fact and opinion; the difficulty occurs when the courts (and even the scientists themselves) are unclear as to which is which.[33]

Influenced by long traditions of pragmatism, the English courts have not adopted any single test for scientific proof and have not been convinced by legal rationalisations in the United States which would require them to intervene much more actively as scientific gatekeepers, most notably according to *Daubert v. Merrel Dow Pharmaceuticals, Inc*.[34] In English courts, it is traditionally assumed that the 'ordinary processes of examination and cross-examination are capable of exposing any deficiencies in scientific evidence and that juries are capable of assessing the weight of such evidence.'[35] However, that stance may change if the Law Commission's Report on *Expert Evidence in Criminal Proceedings in England and Wales* were to be implemented, since it calls for more explicit, standardised and staged processes of testing.[36] Details will be given later in this paper, though an example of where confusion can arise through a case by case approach relates to a pathologist's finding of the death of Jacob Michael by 'excited delirium', a medical term that is not recognised by the Department of Health.[37]

[32] P. Alldridge, "Forensic science and expert evidence" (1994-5) 21 *Journal of Law and Society*, 137 at p.137 (emphasis in original).

[33] C. Walker and R. Stockdale, "Forensic evidence" in C. Walker and K. Starmer (eds.) *Miscarriages of Justice* (Blackstone, London, 1999) p.120. [Walker and Starmer]

[34] 509 U.S. 579 [1993]. But the English courts have called for scientific method by the rigorous use of research papers: *A Local Authority v S* [2009] EWHC 2115 (Fam).

[35] J. Jackson, "Trial procedures" in C. Walker and K. Starmer, *supra* note 29, chap 9.

[36] (Law Com 325, London, 2011). See A. Roberts, "Rejecting general acceptance, confounding the gate-keeper: the Law Commission and expert evidence" [2009] *Criminal Law Review* 551; G. Edmond and A. Roberts, "The Law Commission's report on expert evidence in criminal proceedings" [2011] *Criminal Law Review* 844; G. Edmond, "Is reliability sufficient? The Law Commission and expert evidence in international and interdisciplinary perspective: Part 1" (2012) 16 *International Journal of Evidence & Proof* 30.

[37] http://www.guardian.co.uk/uk/2012/feb/01/excited-delirium-custody-death.

II. LEADING CASES OF PAEDIATRIC FORENSIC PATHOLOGY ERROR

A. The Court of Appeal Judgments

There were two leading 'cot death' cases, one in January 2003 and the other in December 2003, involving Sally Clark[38] and Angela Cannings.[39] In each case, the Court of Appeal was faced with evidence that expert medical testimony (provided by Professor Sir Roy Meadow amongst others) was more problematic than previously acknowledged, and this stance resulted in the quashing of the verdicts. In between these appeal hearings, in June 2003, occurred the highly publicised prosecution of Trupti Patel, who had been acquitted of the murder of her three children by suffocation by the jury at Reading Crown Court; amongst the experts called by the Crown at her trial was Professor Meadow.[40] In this case, Meadow's testimony for the prosecution relied on four specific indications of Patel's guilt: evidence of injuries (broken ribs) suffered by the third child, the fact that the children had been frequently seen by physicians, the fact that they had been healthy just prior to death, and the fact that three children had died consecutively in that family. Meadow told the jury that, '[i]n general, sudden and unexpected death does not run in families.'[41] However, two other prosecution witnesses, pathologists Professor Rupert Risdon and Nathaniel Carey, had initially believed the broken ribs to be evidence of intentional injury, but later 'downgraded' their significance, viewing them as quite likely the result of resuscitation efforts. A genetics expert for the defence, Professor Michael Patton, further testified that there was evidence of an undiscovered genetic link to the babies' deaths; he believed that the risk of more than one cot death in a family could be as high as one in 20.[42]

[38] [2003] EWCA Crim 1020. See further J. Batt, *Stolen Innocence: The Sally Clark Story - A Mother's Fight for Justice* (Ebury Press, London, 2004); http://www.sallyclark.org.uk/.

[39] [2004] EWCA Crim 1. See further T. Ward, "Experts, juries and witchhunts" (2004) *Journal of Law & Society* 369; A. Cannings and M.L. Davies, *Against All Odds: The Angela Cannings Story* (Little, Brown Book Group, London, 2006).

[40] H. Studd, "Mother cleared of killing her babies" *The Times* 12 June 2003 p.1.

[41] See J. Vasagar and R. Allison "How Cot Deaths Shattered Mother's Dreams", *Guardian*, June 12, 2003, p 3.

[42] "The Lessons of the Trupti Patel Case", *BBC News*, June 12, 2003 (http://news.bbc.co.uk/1/hi/programmes/breakfast/2983480.stm).

At the second time of asking,[43] on January 29, 2003, the Criminal Division of the Court of Appeal quashed the conviction of Sally Clark. The Crown did not seek a re-trial. In 1999, Clark had been convicted at Chester Crown Court of the murder of her two sons, C and H, in the one case by smothering and in the other by suffocation. A Home Office pathologist, Dr Alan Williams, recorded injuries on C's body, which he claimed were consistent with minor harm caused during the resuscitation procedures adopted by the ambulance personnel or the medical staff at hospital. He also found an infection in C's lungs. Nevertheless, the case was treated as SIDS. As for H, Williams concluded that there was evidence of non-accidental injury consistent with shaking over several days – a conclusion that caused him to reconsider the cause of death in respect of C, which was then attributed to smothering. In addition to Williams, the prosecution relied upon the medical evidence of three other eminent expert witnesses, two of whom felt that the deaths of C and H remained 'unascertained':[44] Professor Sir Roy Meadow, Emeritus Professor of Paediatrics and Child Health at St James's University Hospital in Leeds; Dr Keeling, a consultant paediatric pathologist; and Professor Michael Green, Emeritus Professor of Forensic Pathology at the University of Sheffield. The evidence from Professor Meadow also included statistical evidence in relation to the likelihood that two SIDS deaths would occur within one family. Asked to calculate the risk of two infants dying of SIDS in the same family, he based his reply on the calculation that 1 in 8,543, and then 'you have to multiply 1 in 8,543 times 1 in 8,543 and … it's approximately a chance of 1 in 73 million.'[45] Experts also appeared for the defence, one of whom substantially qualified the statistical evidence, and this was reflected in words of caution in the summing up of the judge. The second appeal, on referral back to the court by the Criminal Cases Review Commission, was founded on fresh evidence concerning microbiological test results, which showed the presence of

[43] For her earlier appeal, see [2000] EWCA Crim 54.

[44] *Ibid* at paras. 59, 60, 90.

[45] *Ibid* at para. 96. But Meadow has argued in the Clark case that this estimate is irrelevant in any event because the pathologists did not suggest a diagnosis of SIDS, R. Meadow, 'A case of murder and the BMJ' (2002) 324 *British Medical Journal* 41. This point does not of course deal with the impact of an irrelevancy on the jury.

staphylococcus aureus in the case of H, of which Williams had been aware, but which he had not mentioned in his post mortem examination report; nor were they subsequently disclosed by the prosecution. In addition, the appellant contended that statistical information given to the jury about the likelihood of two sudden and unexpected deaths of infants from natural causes misled the jury and overstated the rarity of reoccurrence.

The Court of Appeal's conclusions on the pathology evidence were inconclusive – it was 'a difficult case.'[46] As a result, the precipitating cause of the overturning of the conviction was the non-disclosure of expert microbiological evidence by Williams in respect of H, which also cast doubt on the conclusions on C.[47] The conduct of Williams fell 'a very long way short of standards to be expected of someone in his position upon whose evidence the court was inevitably going to be so dependent.'[48] Though the statistical analysis of Professor Sir Roy Meadow was of lesser impact, it was called into question by the Court as grossly overstating the chance of two sudden deaths and should have been excluded.[49] The 'squaring' of the odds is only valid if each of the deaths is truly independent of the other; that is, without the shared genetic and environmental circumstances of the children being members of the same family.[50]

Turning to the other leading case, Angela Cannings had been convicted at Winchester Crown Court in 2002 of murder by smothering of two of her four children. A third baby had also died, and the surviving child had experienced an acute or apparent life threatening event at the age of 11 weeks, from which she had made a full recovery. The Crown's case heavily depended on specialist evidence about the conclusions to be drawn from the history of three infant deaths in the same family. On December 10, 2003, the Court of Appeal quashed the convictions and emphasised that, if each was an unexplained death, then the fact of their recurrence did not

46 *Ibid* at para. 93.
47 *Ibid* at para. 135.
48 *Ibid* at para. 164.
49 *Ibid* at para.178. The Court of Appeal hearing in 2000 had concluded that the conviction was not rendered unsafe by the statistical evidence: *supra* note 40, at para. 273.
50 *Meadow v. GMC* [2006] EWCA Civ 1390 at para.135.

lead to the inexorable conclusion that they must have resulted from the deliberate infliction of harm. However, a clinching factor was that there was significant and persuasive fresh evidence relating to a realistic albeit unquantified possibility of a genetic problem within the defendant's family. This alternative thesis (along with a variety of other novel theories, such as environmental toxins or immunisation injections) was not ultimately proven, but it was sufficient to render the verdict unsafe. The Court was explicit about the values underlining its approach, namely its abhorrence of the wrongful conviction of a mother, 'already brutally scarred by the unexplained death or deaths of her babies.'[51] One must of course recognise that the stakes are high for all concerned, and that an unduly reluctant diagnosis of SIDS may also threaten the lives of subsequent siblings – a point that the court was less wont to emphasize.[52]

Professor Meadow, who again appeared as an expert, did not offer mathematical probabilities in *Cannings*.[53] In *Cannings*, the criticism went further - to the value of the scientific bases for the evidence of Professor Sir Roy Meadow. The prosecution asserted that there had to be some criminal action, likely to be smothering, on the part of the mother, in light of the fact that babies in the same family died in similar equivocal circumstances when in her sole charge. This multiple occurrence was the core of Professor Meadow's thesis: one sudden infant death is a tragedy, two is suspicious, and three is murder until proved otherwise.[54] Likewise, his inference, that a short interval between an independent report that the baby was well and a sudden death was suggestive of wrongdoing,[55] was also contested.

With mounting disquiet about expert evidence, the Court in *Cannings* was forthrightly concerned about 'dogma' on the part of the experts.[56] The

51 [2004] EWCA Crim 1 at para. 179 [*Cannings*]

52 See J. Stanton and A. Simpson, "Murder misdiagnosed as SIDS" (2001) 85 *Archives of Diseases in Childhood* 454.

53 *Cannings*, *supra* note 48, at paras. 16-17.

54 See further R. Carpenter et al., "Repeat sudden unexpected and unexplained infant deaths natural or unnatural" (2005) 365 *The Lancet* 29; C. Bacon and E. Hey, "Uncertainty in classification of repeat sudden unexpected infant deaths in Care of the Next Infant programme" (2007) 335 *British Medical Journal* 129.

55 *Cannings*, *supra* note 48, at para. 150.

56 *Ibid* at para. 29.

Court thus came late to an understanding that science is dynamic, with professional cultures influencing experimentation and interpretation in the natural sciences just as they do in the social sciences.[57] The Court's response to the revelation was seemingly to cast a plague on both houses in the battle of forensic experts.[58] Given evidence based on science that is 'still at the frontiers of knowledge', where there is 'a serious disagreement between reputable experts about the cause of death', the prosecution of a parent for murder should only be pursued, according to the Court, if there is additional cogent evidence, extraneous to the experts. But this approach immediately raised several imponderables. Does the basic scientific methodology of ongoing falsification not mean that *all* science is 'at the frontiers of knowledge'? Indeed, if a science ceases to have frontiers where received wisdom is questioned, then it should be debunked as unscientific creed. Next, what constitutes 'serious disagreement'? Who are 'reputable' experts, and who makes that judgement? Furthermore, a policy that excludes 'serious' scientific dispute is disturbing and runs contrary to the principles of adversarialism. Do the courts believe they are merely capable of handling 'easy' forensic disputes? The answer must surely be not to eschew scientific disputes, but to develop appropriate standards and techniques for hearing and resolving them. In *Cannings*, the Court showed an impressively painstaking approach to the scientific testimony, and application of the burden and standard of proof surely assists in cases where significant uncertainty cannot be resolved.[59] The same observations apply, in principle, to civil cases, though it may be admitted that the standard of proof may be less decisive in that sphere, meaning that a higher degree of scientific uncertainty may remain.

[57] See S. Jasanoff, *Science at the Bar* (Harvard University Press, 1995) p. xv; B. Wynne, "Establishing the rules of law constructing expert authority" in R. Smith and B. Wynne, (eds.), *Expert Evidence* (Routledge, London, 1989).

[58] *Cannings*, *supra* note 48, at para. 178.

[59] Compare in civil cases: See *Re LB and Re LU* [2004] EWCA Civ 567; *Re Uddin (a child) (serious injury: standard of proof)* [2005] EWCA Civ 52; D. Wheeler, "The far-reaching impact of Cannings" (2004) 154 *New Law Journal* 1131.

The untenable retreat from dispute apparently enunciated in *Cannings* was corrected in *R. v. Kai-Whitewind*.[60] The defendant's third child was conceived in the course of an alleged rape. Immediately after the birth, she suffered from depression and also admitted to a health visitor that there had been a fleeting moment when she felt like killing the child. Shortly before the child's death, the defendant sought medical advice about two incidents of vomiting and a spontaneous nosebleed. Post-mortem examinations revealed a number of features, including old blood in the lungs, consistent with two distinct episodes of upper airway obstruction. The prosecution relied, *inter alia*, upon the findings from a second post-mortem examination, from which the conclusion of their expert was that the immediate cause of death was lack of oxygen resulting in asphyxiation. A different expert concluded that obstruction of the airways was the most likely cause of bleeding, and he could think of no alternative explanation than asphyxia. The defence relied, *inter alia*, upon the conclusion from the first post-mortem that the cause of death was 'unascertained' and the opinion of a consultant paediatric pathologist that death by natural causes was more probable than unnatural death. The defendant's appeal against conviction of murder was rejected. The Court noted that, though there were disputes between reputable experts about the significance of some of the findings made at post-mortem, as there had been in *Cannings*, this similarity did not preclude conviction.

It was noted, in this case, that disagreement between medical experts was not, on its own, sufficient to find a conviction unsafe; it is the role of the jury to appraise the expert evidence and to pick through the testimony of forensic pathologists. The Court of Appeal stated: 'We understand that Cannings is being deployed in many cases by the defence as authority for different arguments running along the lines that whenever there is a genuine conflict of opinion among reputable experts, the prosecution should not proceed, or should be stopped, or that the evidence of the prosecution experts should be disregarded. If so, the single passage found in part of paragraph 178 in Cannings, taken in isolation, is being asked to sustain an

[60] [2005] EWCA Crim 1092 [*Kai-Whitewind*]

unforeseen, and as we shall explain, inappropriate burden'.[61] The Court of Appeal distinguished the cases on the basis that '[i]n Cannings there was essentially no evidence beyond the inferences based on coincidence which the experts for the Crown were prepared to draw. Other reputable experts in the same specialist field took a different view about the inferences, if any, which could or should be drawn. Hence the need for additional cogent evidence. With additional evidence, the jury would have been in a position to evaluate the respective arguments and counter-arguments: without it, in cases like Cannings, they would not'.[62]

In this way, the strength of *Cannings* has waned – but by how much? In *Kai-Whitewind*, the Court of Appeal starkly concluded that *Cannings* was not applicable at all.[63] One important distinction was said to be the fact that the latter experienced serial deaths, whereas there was only one infant death for the former. But the appeal in *Cannings* essentially refuted the theory of Sir Roy Meadow that multiple deaths are themselves evidence of culpability, so it is hard to see why this factor should remain a crucial division. Another distinction was said to be the greater availability of evidence in *Kai-Whitewind*. But there remained the first post-mortem conclusion that the cause of death was 'unascertained' and that natural causes could not be ruled out. Of course, one might conclude in *Kai-Whitewind* that the evidence was quantitatively and qualitatively stronger on the prosecution side. There were more thorough second and third post-mortem inquiries, evidence of the confession of a fleeting thought of killing the baby and of the infliction of serious prior injury, plus the failure of the accused to give evidence at trial.[64] But to say that the case had no resonance with *Cannings* is untrue, and the two trial experts for the defence continued to assert, having reviewed the later post-mortem inquiries, that the cause of death was unascertained.[65]

61 *Ibid* at para. 74.
62 *Ibid* at para. 85.
63 *Ibid* at para.83.
64 See Criminal Justice and Public Order Act 1994 s.35.
65 *Kai-Whitewind, supra* note 57 at paras. 57, 66.

Though none matched the publicity afforded to *Clarke* and *Cannings*, several other controversial cases involving paedriatic pathology have emerged.[66] In *R. v. Anthony*,[67] following a reference by the Criminal Cases Review Commission, the conviction of Donna Anthony in 1998 for the murder by smothering of her two children was overturned, uncontested by the crown. In that case, the assertion of Professor Sir Roy Meadow regarding 'such incredibly long odds' against two children in the same family dying of natural unexplained causes, which were obtained by multiplying the chances of single deaths was again disputed[68] and viewed as 'flawed statistical evidence.'[69]

In *R. v. Harris*,[70] four appellants, two of whom had been invited by the Attorney General's Inter-departmental review (see below) to consider an appeal following *Cannings*, sought to overturn their convictions for manslaughter, murder, manslaughter and inflicting grievous bodily harm, respectively, arising from allegations of non-accidental head injuries (NAHI), previously referred to as Shaken Baby Syndrome (SBS). The traditional medical view had been that the coincidence of a triad of intracranial injuries consisting of encephalopathy (defined as disease of the brain affecting the brain's function), subdural haemorrhages, and retinal haemorrhages, in babies aged between one month and two years, was the hallmark of NAHI. New medical research, 'the unified hypothesis' challenged the supposed infallibility of the triad. In contrast to *Cannings*, the Court declined to specify any new procedures or rules of evidence where medical experts are involved.[71]

The summation of a decade of Court of Appeal attempts to handle medical experts in child death cases was delivered in *R v Henderson; R v Butler; R*

66 See also *Re B* [2004] EWHC 411 (Fam); *Birmingham City Council v H* [2006] EWHC 3062 (Fam).
67 [2005] EWCA Crim 952.
68 *Ibid* at para. 69.
69 *Ibid* at paras. 85, 92.
70 [2005] EWCA Crim 1980 [*Harris*]. See Lord Goldsmith, *The Review of Infant Death Cases: Addendum to Report, Shaken Baby Syndrome* (London, 2006). For her compensation claim, see *R (Allen, formerly Harris) v Secretary of State for Justice* [2008] EWCA Civ 808.
71 *Harris*, *supra* note 67, at para. 270.

v Oyediran in 2010.[72] The Court recognised that scientific evidence is not omniscient. Though it may be able to divine some injuries and causes, the evidence may be insufficient to exclude an unknown cause; alternatively, it may be able to exclude every possible known cause but not to isolate the operative cause and it must also be recognised that 'today's orthodoxy may become tomorrow's outdated learning'.[73] However, there are recognised limits to legal judgment, and a previous legal authority (such as on the cogency of the 'triad' in child death cases - widespread bilateral retinal haemorrhages, thin film subdural haemorrhage and encephalopathy) cannot determine whether a later medical report should be accepted or rejected. The courts cannot resolve medical controversy save in the applied circumstances of a given case.[74] The Court next warned against admitting fresh expert evidence on appeal: 'Trials should not be a "dry run" for experts.'[75] In this way, the primacy of jury trial can be preserved, though it must be assisted by strict marshalling and control of the issues presented by experts through robust pre-trial and trial management, including a summing-up which indicates the route followed by the jury in reaching its verdict and, if necessary, a warning to distinguish expertise from advocacy. In handling the experts under the Criminal Procedure Rules 2010, the court should normally direct a meeting of experts so that a statement can be prepared of areas of agreement and disagreement under r 33.6.2. but need only 'bear in mind' the possibility of a single joint expert.[76] Pre-trial case management hearings can also handle the establishment of the expert's credentials (or lack of them).

B. Reviews and Further Appeals

Prompted by the decision in *Cannings*, in January 2004, the Attorney General announced a review of 258 convictions within the previous 10 years relating to homicide or infanticide of a baby under two years old

72 [2010] EWCA Crim 1269.
73 *Ibid* paras 1, 207.
74 *Ibid* para 6.
75 *Ibid* para 3.
76 *Ibid* para 210.

by a parent.[77] In total, 297 cases were reviewed by the Attorney General's Office after *Cannings*. Three cases were considered worthy of referral as precisely analogous to the facts of *Cannings*, with 28 in total deemed worthy of further examination by the Criminal Cases Review Commission.[78] The Commission referred just one case in response to the Attorney General's review, Lisa Gore's,[79] in addition to the case of Donna Anthony, following *Cannings*.[80] Others sought to appeal without waiting for the endorsement of the Commission, as illustrated by the case of *R. v. Harris*[81] described earlier. To this review must be added the 49 cases reviewed following the acquittal of Sally Clark and affected by the work of Dr. Alan Williams.[82]

There was a parallel review in civil cases, ordered by Margaret Hodge, the then Minister of State for Children.[83] This review found 5,175 cases going through the family courts, involving 9,195 children. Of these, 385 cases hinged on expert evidence, but dispute among experts was detected in only 47 cases. So far as reports disclose, in only one case has the care plan changed subsequent to review.[84] In a second stage of the review, the authorities were asked to review 28,867 care orders already in place. Of these cases, only 26 were found to involve disagreement between medical experts, and only five raised 'serious doubt' about the reliability of the evidence.[85] The care plan remained unchanged in three of these five cases; in the fourth, the plan had been changed already in the light of fresh information received; in the fifth, further consideration of medical evidence by the court was awaited.

77 *The Times* 20 January 2004 pp.1, 4.
78 See *The Review of Infant Death Cases* (2004); House of Lords Debates vol.678 col.1079 14 February 2006, Lord Goldsmith.
79 Annual report 2006-07 (2006-07 HC 771) p.29. She was convicted of infanticide in 1996 and died in 2003.
80 Annual Report 2004-05 (2004-05 HC 115), p. 19.
81 [2005] EWCA Crim 1980.
82 *The Times* 5 December 2003, p. 4.
83 House of Commons Debates vol.422 col.52ws 17 June 2004.
84 C. Dyer, "Review of Child Care Cases Finds Few Instances That Raise 'Serious Doubt'" (2004) 329 *British Medical Journal* 1256.
85 House of Commons Debates vol.426 col.1294ws 16 November 2004. See J. Gornall, "Standing up for justice" (2007) 334 *British Medical Journal* 1139.

The criminal and civil reviews were both essentially administrative. The legal professions were also invited to identify troubling cases and to make representations on those already under review. The administrative review did not in any way dispose of the cases, but it could recommend that further legal action be taken, including by the representatives of the parties. In the criminal cases only, notification to the Criminal Cases Review Commission triggered a more formal review process. In addition, the Crown Prosecution Service has issued lengthy guidance on the handling of *Non Accidental Head Injury Cases (NAHI, formerly referred to as Shaken Baby Syndrome [SBS]) - Prosecution Approach*,[86] including the advice that 'it is unlikely that a charge for a homicide (or attempted murder or assault) offence could be justified where the only evidence available is the triad of pathological features ...'.

C. Disciplinary Proceedings

There were two disciplinary cases that directly arose from the foregoing appeals.[87] The most notable concerned Professor Sir Roy Meadow. His case was heard before the General Medical Council (GMC) Fitness to Practice Panel (FTP Panel), convened through section 35D of the *Medical Act* of 1983.[88] The FTP Panel is empowered to examine a physician's fitness to practice and can make recommendation regarding disqualifying decisions or other determinations through a hearing. The FTP Panel examines cases of misconduct, deficient professional performance, cases where there has been a conviction or caution for a criminal offence, adverse physical or mental health, or a determination by another health authority that fitness to

[86] http://www.cps.gov.uk/legal/l_to_o/non_accidental_head_injury_cases/, 2011. The guidance was first issued in 2006.

[87] In addition, Dr Freddy Patel was found guilty of misconduct and suspended by the GMC for his reports on the death of Sally White in 2002: O. Boycott, "Pathologist faces being struck off after missing murder clues: Patel guilty of misconduct over woman's autopsy" *The Guardian* 18 March 2011 p.12.

[88] For procedures, see Sched. 4. These provisions were inserted into the 1983 Act by the *Medical Act 1983*(Amendment) Order 2002 Statutory Instrument No. 3135 and following the Department of Health review, *Reform of the General Medical Council, A Paper for Consultation* (London, May 2002) http://www.dh.gov.uk/dr_consum_dh/groups/dh_digitalassets/@dh/@en/documents/digitalasset/dh_4082186.pdf.

practice was impaired.[89] If the FTP Panel determines that fitness to practice is impaired, it may direct that a person's name be erased from the register or suspended for up to 12 months; it may also direct that registration be conditional upon compliance, or where fitness to practice is not impaired, give warning.[90]

It was determined by the FTP Panel that Meadow's work amounted to an attempt, based on rational argument and research, to change perceptions and approaches to the suspicious death of babies. Equally, of course, there are arguments, common to all scholarly progress, that some of his presentations were misleading or wrong. In that context, it was exceptional that he should be subject to disciplinary proceedings, and some viewed that process to be as much a witch-hunt as others had so depicted his attitude to suspected parents.[91] In any event, he was struck off the medical register in July 2005 on grounds of serious professional misconduct by having given evidence about statistics that he had misunderstood and by having failed to make clear that he was not an expert in statistics.[92] The latter contention implies that only qualified statisticians should present evidence relying upon statistics, a degree of specialism which, if enforced, would cause many costly delays in the courts, but there was more general agreement amongst commentators that Meadow's handling of the statistics had been misleading.[93]

There followed litigation as to whether an expert should be disciplined for testimony in court, or whether, as sustained by the High Court, there exists immunity from suit enjoyed by an expert witness in respect of the evidence related in court.[94] The Court of Appeal in *GMC v. Meadow*[95] found that

89 s.35C(2).
90 s.35D(2).
91 R. Horton, "In defence of Roy Meadow" (2005) 366 *The Lancet* 3.
92 CO/5763/2005.
93 See P. Dawid, "Statistics on trial" (2005) 2 *Significance* 6; R. Hill, "Reflections on the cot death cases" (2007) 47 *Medicine, Science, Law* 2; R. Nobles and D. Schiff, "Misleading statistics within criminal trials" (2007) 47 *Medicine, Science, Law* 7.
94 [2006] EWHC 146 (Admin). See Sir L. Blom-Cooper, "Disciplining expert witnesses by regulatory bodies" [2006] *Public Law* 3.
95 [2006] EWCA Civ 1390. See Sir L. Blom-Cooper, "Fault lines remain after Meadow" (2006) 156 *New Law Journal* 1697.

an expert witness has no immunity from disciplinary proceedings, for disciplinary proceedings are in the public interest. But it concluded that the penalty imposed was not proportionate for an eminent person who had made errors in good faith and without intention to mislead. 'Serious professional misconduct' need not relate to clinical practice and could include misconduct in other contexts, including the giving of medical evidence in court; it does not demand the presence of bad faith or moral turpitude but must be based upon incompetence or negligence to a high degree.[96]

Aside from disciplinary proceedings conducted by the GMC, the Home Office directly disciplines the pathologists who act on its behalf. The Home Office Disciplinary Panel can hear complaints, referred by the Delivery Board, pursuant to the Home Office Register of Forensic Pathologists, Disciplinary Rules.[97] Various levels of sanction exist and, in cases where a complaint has been made against a pathologist, he or she may be brought before the Disciplinary Committee, Hearing Panel, or, in the most serious cases, the Disciplinary Tribunal. The Disciplinary Tribunal has a range of sanctions available to it, including the removal of a pathologist's name from the register. The purpose of the disciplinary procedures is to ensure that the register 'continues to identify only those who are fit to practise'[98], and can be punitive as well as remedial in function. The Home Office operates this disciplinary system (which includes legal and medical experts) because of the highly specialized nature of pathology services. The Home Office operates its own register of approved pathologists, aside from the register of medical practitioners overseen by the GMC or the Royal College of Pathologists. There is the potential for conflict between the professional standards set by the Home Office Panel, by the GMC (as in the case of Paterson), and by the Royal College. However, there are no current proposals for the amalgamation of these systems, and the main focus of reform is upon the GMC[99].

[96] *Ibid* at paras.200, 201.
[97] http://www.npia.police.uk/en/docs/pdb_disciplinary_rules_issue2.pdf, 2007.
[98] *Ibid* s. 10.
[99] See for example, http://www.rcpath.org/resources/pdf/rcpathar20082009.pdf

Under the Home Office process, Dr. Alan Williams, a Home Office pathologist who conducted the post-mortem in the Sally Clark case, was found guilty of serious professional misconduct by its Medical Board, in June 2005, for failing to disclose microbiology tests which showed infection. He was banned from pathology work for three years.[100] However, an appeal panel in 2007 reinstated him on the basis that he had made an honest albeit serious error, which was not likely to be repeated and which he had not sought to conceal.[101]

D. Other Legal Issues Arising

A variety of other issues have been raised by these key cases. One problem faced by the Court of Appeal is that it cannot know the 'reasons' for conviction by the jury. Assuming that a disparate and inexpert body like a jury has 'reasons,' it would be helpful on appeal to know whether a conviction was based on suspect evidence.[102]

A second issue is whether the jury is apt to dispose of clashes between experts, howsoever the verdict may be addressed. However, if the judge is properly trained in appreciating and handling expert evidence, and in asking the right questions in the summing up, then the jury remains suitable as a mechanism for deciding whether the community wishes to apply punishment in the light of the weight of evidence it has heard. It is not necessary to find that the science is absolutely true or false.

A third issue is whether experts should be appointed for each party or whether a single court-appointed would allow for the better resolution of forensic disputes?[103] The concept is problematic in the context of an adversarial process, where a range of contending interpretations is the norm. Furthermore, this concept is criticized for reasons other than

[100] C. Dyer, "Clark Pathologist Guilty of Misconduct", *The Guardian*, June 4, 2005, p. 7.

[101] P. Gooderham, "Experts Exonerated" (2007) 157 *New Law Journal* 1285. See also *Williams v General Medical Council* [2007] EWHC 2603 (Admin).

[102] The absence of reasons may be a defect under the European Convention on Human Rights, art.6, as was pointed out by Sir Robin Auld in his Review of the Criminal Courts of England and Wales, 2001 (para.11.52). This contention was rejected in *Cannings*, *supra* note 48 para. 173.

[103] See the power of the court to direct an appointment under the Criminal Procedure Rules 2010 r 33.7.

ensuring fairness to the parties. There are questions as to whether the courts are qualified to discern, in advance of a trial, who is the best person to conduct the forensic analysis. A more fundamental concern is that, given the premise of this commentary that science is inherently controversial and fluid, with scientists unable to answer scientific questions conclusively, the idea that a court-appointed expert or some form of external panel should decide would simply repeat or even compound the problem of undue legal faith in scientific finality by having the expert seemingly backed by the judge. A single expert suggests that science can only produce one true result, but science is about interpretation and probabilities rather than absolutes. So, a range of views might better capture true science than a single view.[104] Therefore, while not faultless, the adversarial system of competing experts, combined with legal burdens and standards of proof, in most instances provides an appropriate means to air and resolve scientific disputes and also allows for scientific innovation. At the same time, effective adversarial combat is diminished if the pool of available experts is small and narrowly self-referring and if state legal funding for defence work is inadequate.

III. REFORM PROPOSALS REGARDING FORENSIC PATHOLOGY

A. UK Responses

The problems of forensic pathology cannot be wholly disentangled from wider forensic problems and responses to them which face the legal system as a whole. This paper has focused upon the reforms most directly affecting forensic pathology, but more general measures are also worthy of note. They include the development of the Criminal Cases Review Commission, implemented through Part II of the Criminal Appeals Act 1995,[105] the appointment of a Home Office Forensic Science Regulator

[104] See J. Spencer, "The Meitra; Expert: An Implausible Bogey" (1991) *Criminal Law Review* 106; "Court Experts and Expert Witnesses" (1992) 46 *Current Legal Problems* 213; S. Jasanoff, "Just Evidence" (2006) 34 *Journal of Law, Medicine and Ethics* 328.

[105] See N. Taylor with M. Mansfield, "The post-conviction process" in Walker and Starmer, *supra* note 29.; R. Nobles and D. Schiff, *Understanding Miscarriages of Justice: Law, the Media, and the Inevitability of Crisis* (Oxford University Press, Oxford, 2000); M. Naughton , *Rethinking Miscarriages of Justice: Beyond the Tip of the Iceberg* (Basingstoke: Palgrave Macmillan, 2007);

(following a Consultation Paper, *Standard Setting and Quality Regulation in Forensic Science*[106] and in succession in 2009 to the Council for the Registration of Forensic Practitioners),[107] and the regulation of aspects of the work of expert witnesses by the Civil Procedure Rules[108] and the Criminal Procedure Rules.[109]

Returning to forensic pathology, the Leishman Report ('Review of Forensic Pathology Services in England and Wales')[110] conducted a wide-ranging study in 2003. The Report identified a number of problems with pathology: inconsistency in practices, training, and standards;[111] a decline in numbers – from 52 in 1992, down to 36 in 2001; and a lack of management on the part of the Home Office. It proposed, in response, a national body to provide regulation,[112] plus national standards to be prepared by the Home Office. The former has been achieved through the Home Office Protocol for Home Office Registered Forensic Pathologists (2005), which defines their responsibilities. Accreditation as a pathologist on the Home Office Register was also revised in 2005 and since.[113]

L. Elks, *Righting Miscarriages of Justice? Ten Years of the Criminal Cases Review Commission* (JUSTICE, London, 2008); M. Naughton (ed.), *The Criminal Cases Review Commission: Hope for the Innocent?* (London: Palgrave, 2009).

106 London, 2006. See A. Rawley and B. Caddy, "Damilola Taylor: An independent review of forensic examination of evidence by the Forensic Science Service" (Home Office, London, 2007) para.65. Compare the approach in National Research Council of the National Academies, *Strengthening Forensic Science in the United States: A Path Forward* (National Academic Press, Washington DC, 2009).

107 See Forensic Science Working Group, *Report* (Royal Society of Chemistry, London, 1997); House of Commons Science and Technology Committee, Forensic Science on Trial (2004-05 HC 96) para.135-136; Forensic Science Regulator, Codes of Practice and Conduct for Forensic Science Providers and Practitioners in the Criminal Justice System (2009, available at http://www.homeoffice.gov.uk/publications/police/forensic-science-regulator1/quality-standards-codes-practice).

108 Civil Procedure Rules, Statutory Instrument 1998 No. 3132 Pt. 35.

109 Criminal Procedure (Amendment No. 2) Rules 2006 SI no.2636 Pt. 33. See P. Cooper, "Different court; different rules" (2006) 156 *New Law Journal* 310.

110 Home Office, 2003.

111 The lack of management structure and fragmentation of the forensic pathologist service had also been noted in on-going inquiries, which examined the conditions surrounding the multiple murders of patients by Dr. Harold Shipman. See the reports issued pursuant to the Shipman Inquiry (http://the-shipman-inquiry.org.uk), especially the Third Report - Death Certification and the Investigation of Deaths by Coroners (Cm.5854, London, 2003).

112 The suggested body was the Forensic Science Service. However, the government announced in December 2010 that it should be closed by 2012.

113 See now http://www.npia.police.uk/en/docs/PDB_criteria_registration.pdf.

Further important work on standards relating to infant deaths was triggered by a joint working group of the Royal Colleges for Paediatricians and Pathologists, chaired by Helena Kennedy, QC. It recommended a national protocol to ensure that all sudden infant deaths in England and Wales are investigated thoroughly, quickly, and consistently by specialist paediatric pathologists, to reduce the risk of wrongful convictions.[114] More generally, the protocol establishes standards for multi-agency responses to every sudden unexpected infant death, and details the duties of every relevant agency – medical, police, and legal. Initial home visits by paediatricians alongside the police are considered vital. The group further proposed that expert witnesses in murder prosecutions involving the death of a baby should be tested in Plea and Directions Hearings, whereby experts should identify the issues on which they agree and disagree. The report also made recommendations for the pre-court phase of investigation, ultimately demanding national, compulsory protocols to reflect high standards of care. The protocol for the Management of Sudden Unexpected Death in Infants is being implemented through the Local Safeguarding Children Boards, established under section 13 of the Children Act 2004, as implemented by article 6(b) of the Local Safeguarding Children Boards Regulations 2006,[115] which requires 'putting in place procedures for ensuring that there is a co-ordinated response by the authority, their Board partners and other relevant persons to an unexpected death'. It was also endorsed by the Court of Appeal in *R v Henderson; R v Butler; R v Oyediran*.[116]

The message conveyed by the Court of Appeal and GMC is that there is a need for increased scrutiny of scientific and medical expertise, with less indulgence afforded to claims to expertise or to the admission of error. A consequence of this tougher climate, as mentioned earlier, has

[114] The report of a working group convened by The Royal College of Pathologists and The Royal College of Paediatrics and Child Health, Sudden unexpected death in infancy, http://www.rcpath.org/index.asp?PageID=455, 2004. See further P. Fleming, et al., "Investigating sudden unexpected deaths in infancy and childhood and caring for bereaved families: an integrated multiagency approach" (2004) 328 *British Medical Journal* 331; J. Gornall, "Sudden infant death" (2007) 334 *British Medical Journal* 1083.

[115] SI no.90.

[116] [2010] EWCA Crim 1269 para 207.

been the reluctance of experts to work in forensic child protection.[117] Professor Alan Craft, president of the Royal College of Paediatrics and Child Health, has described child protection work as being in a state of 'crisis' with paediatricians, 'not surprisingly, increasingly reluctant to act as expert witnesses in these complex cases.'[118] In response, a report by the Chief Medical Officer, Sir Liam Donaldson, 'Bearing Good Witness,'[119] suggested that the role should be filled by multi-disciplinary National Health Service (NHS) teams. There were several adverse comments in response to this idea.[120] Why should NHS teams provide a higher standard than the current situation? How would experts be trained and accredited by the NHS? How are the extra costs for the NHS to be allocated given that experts will operate nationally but will be employed locally? How are teams to work and to what extent will there be disclosure about the team deliberations. Should innovation and choice in the independent sector be curtailed?

Most recently the Home Office, the Forensic Science Regulator and the Royal College of Pathologists have developed a *Code of practice and performing standards for forensic pathology in England, Wales and Northern Ireland.*[121] This document has been built on earlier editions of the code and outlines how in investigating suspicious deaths that while there are two separate and simultaneous investigations (first by the coroner

[117] See Royal College of Paediatrics and Child Health, An investigation into the nature and impact of complaints made against paediatricians involved in child protection procedures (London, 2007); Independent Inquiry into Histopathology Services (University Hospitals Bristol, Bristol, 2010) para.124 (noting the 'devastating' impact of the Learning from Bristol: the report of the public inquiry into children's heart surgery at the Bristol Royal Infirmary 1984 -1995 (Cm.5207, London, 2001), resulting in the loss of all four hospital specialists).

[118] "Need to review child protection" *The Times*, 2 February 2004 p. 17.

[119] http://www.dh.gov.uk/prod_consum_dh/groups/dh_digitalassets/@dh/@en/documents/digitalasset/dh_4140011.pdf, 2006. Department of Health.

[120] See G. Wannan and M. E. Jan Wise, "Bearing Good Witness: does it withstand cross-examination?" (2007) 31 *Psychiatric Bulletin* 201; McDonald, I., Heenan, S., and Heenan, A., "Consultation Document: Bearing Good Witness - Proposals for Reforming the Delivery of Medical Expert Evidence in Family Law Cases" (2006-2007) 29 *Journal of Social Welfare and Family Law* 151. The Royal College of Pathologists has expressed support: http://www.rcpath.org/resources/pdf/BearingGoodWitnessResponseFinalFeb07.pdf, 2007.

[121] Home Office, The Forensic Science Regulator and The Royal College of Pathologists. October 2011.

to identify the deceased and the cause of the death, and the second by the police to determine whether a criminal offence has occurred) the pathologist is involved in both. It further articulates specific duties and responsibilities of the pathologist and establishes professional standards in forensic pathology. Moreover, it outlines the particular steps to be undertaken from initial contact to autopsy reporting, in cases where:

'(a) there is, or is likely to be, an investigation by any authority leading to serious criminal charges and (b) information derived from the post-mortem examination may be used in the investigation or at trial (whether by the prosecution or the defence).'[122]

The code further outlines subsequent actions, and while it has been written from the standpoint of a pathologist instructed by the Crown, it also delineates aspects of the role of the pathologist with defense counsel and attendance at court.

Also in 2011, a Criminal Evidence (Experts) Bill[123] was proffered by the Law Commission and outlines important proposed changes to the law on expert evidence in a bid to address the House of Commons' Science and Technology Committee's concern that expert opinion evidence was being admitted in cases without sufficient scrutiny.[124] The Law Commission, recognizing the common law approach to the admissibility of expert opinion as one of 'laissez-faire', with little practical effect, addresses the fact that judges rarely rule expert evidence as inadmissible. The current requirements for the admissibility of expert evidence in criminal proceedings in the UK, as discussed earlier outline the need for such testimony to provide assistance, the expertise be relevant and the expert impartial, as well as it be sufficiently reliability. In their Code, the Law Commissioners proffer a new evidentiary reliability test, one that is meant to address the basis of the expert's opinion, with respect to their field of expertise, methodology, and the validity of their assumptions. In particular, these considerations include the following:

122 ***Ibid*** at p. 2.
123 *Expert Evidence in Criminal Proceedings in England and Wales,* The Law Commission, Law Com No. 325, London, 2011. [Criminal Evidence (Experts) Bill]
124 Consultation Paper No 190, paras. 3.15-3.17

'The opinion evidence of an expert witness is admissible only if the court is satisfied that it is sufficiently reliable to be admitted.

The opinion evidence of an expert witness is sufficiently reliable to be admitted if:–

(a) the evidence is predicated on sound principles, techniques and assumptions;

(b) those principles, techniques and assumptions have been properly applied to the facts of the case; and

(c) the evidence is supported by [that is, logically in keeping with] those principles, techniques and assumptions as applied to the facts of the case.'[125]

The onus for establishing reliability is on the party tendering the expert evidence. Similarly, the bill provides guidelines to help in determining whether this test is satisfied, for both scientific evidence and non-scientific evidence.[126] Essentially, such a reliability test would also be accompanied by better quality control in forensic sciences laboratories.[127] In areas of doubt, any matters of expert evidence presented as fact, should be treated as expert opinion evidence, subjected to particular scrutiny. No moves have been taken as yet towards implementation.

B Lessons from Canada

Corresponding problems were recently encountered in the province of Ontario. The errors in paediatric forensic pathology evidence arose from cases of sudden infant death, with strikingly similar results to the English experiences.

The key case concerned Dr. Charles Smith, who worked as a paediatric forensic pathologist at the world-renowned Hospital for Sick Children in Toronto, from 1981 to 2005, in spite of the fact that he had neither formal training or certification in forensic pathology, nor had he much experience

[125] Criminal Evidence (Experts) Bill, at para. 3.6
[126] *Ibid.* at para. 3.10
[127] *Ibid.* at para. 3.34.

in death investigations prior to his hiring.[128] Nevertheless, he was involved in investigating a number of criminally suspicious cases where he testified as an expert witness regarding the nature and cause of sudden infant death. In 2005, following a number of incidents where Smith's testimony was found to be questionable or problematic, the Chief Coroner for Ontario, Dr. Barry McLellan called a full review into Smith's work, to be conducted by pathologists external to the Chief Coroner's office, on 44[129] criminally suspicious cases and homicides from 1991 to 2005 where Smith had either conducted the autopsy or provided an opinion; this was done to ascertain whether Smith's conclusions in those cases were 'reasonably supported by the materials available for review'.[130] In 2007 the Coroner's review revealed that in twenty cases the reviewing pathologists took issue with Smith's opinion, expressed through either or both of his report or testimony and in 12 of the twenty cases there had been findings of guilt by the courts.[131] These twenty cases became the focus of the Commission of Inquiry into Paediatric Forensic Pathology in Ontario, chaired by Justice Stephen T. Goudge of the Ontario Court of Appeal. The Inquiry was called in 2007 to examine the more flagrant of Smith's errors, as well as to make recommendations regarding the practice and oversight of pediatric forensic pathology in Ontario, and to restore and enhance public confidence in the system.

The Goudge Report outlined a number of specific errors[132] that appeared consistently across the cases examined. A major flaw that permeated throughout the manner and content of his testimony was that Dr. Smith did not understand that in his role as an expert witness, he was meant to provide evidence as an impartial observer, rather than support the Crown's

[128] Report of the Inquiry into Pediatric Forensic Pathology in Ontario, by Commissioner Stephen T. Goudge released on October 1, 2008 (http://www.attorneygeneral.jus.gov.on.ca/inquiries/goudge/index.html).

[129] Ultimately, the review examined 45 cases.

[130] Office of the Chief Coroner (Ontario), *Public Announcement of Review of Criminally Suspicious and Homicide Cases where Dr. Charles Smith conducted Autopsies or Provided Opinions,* Backgrounder, April 19, 2007, p.4.

[131] *Ibid* p. 4.

[132] *Ibid* p.16-19.

case.[133] What became evident during much of his trial testimony was that Smith failed to prepare himself adequately on complex matters and he often became defensive when questioned about the limits of his experience, overstating his knowledge and testifying outside his own limited area. From time to time Smith would even rely on his personal experience as a parent to bolster his testimony. Smith's presentation of the evidence was rarely balanced and far too equivocal for such a controversial topic as sudden infant death. Moreover, he was critical of other professionals and consequently unethical in his review of others' findings. Smith would often provide opinions to the court about the 'profile' of certain types of abusers or perpetrators, which reflected opinion evidence far outside his expertise and ability. The inquiry established that Smith's opinions were at times 'speculative, unsubstantiated, and not based on pathology findings'.[134] These traits were evident though Smith's language that was, on occasion, unscientific and lacked the candor expected and required of an expert witness. Also apparent were instances of false and misleading statements made to the court.

Shortly following the release of the Goudge Report in October 2008, the government of Ontario acted quickly to implement many of its 169 recommendations, the majority of which were aimed at modifying the institutions and practices related to forensic pathology in Ontario.[135] According to the Ministry of Community Safety and Correctional Services, the Coroners Amendment Act 2009,[136] effectively implemented all the legislative reforms recommended by the Goudge Commission of Inquiry.[137] One important and contested recommendation, that the Chief Coroner be given the exclusive right to conduct an investigation or inquest, was amongst those implemented in the Coroners Amendment Act, section 15. This amendment removed all possible political intervention by stripping the Minister of Community Safety and Correctional Services of

133 *Ibid* p.16.
134 *Goudge Report,* Executive summary, p. 18
135 *Goudge Report,* vol. 3: Policy and Recommendations. [Goudge]
136 c. 15, Amending the Coroners Act 1990, c. 37.
137 Previously, Ontario's forensic pathology services had been decentralized, operating in regional forensic pathology units and hospitals where autopsies were carried out. See http://news.ontario.ca/mcscs/en/2008/10/strengthening-ontarios-death-investigation-system.html.

this power. Some have interpreted this move as contrary to transparency and accountability. According to Andrea Horwath (then New Democratic Party justice critic),

'To take away the minister's right to actually call for an inquest is absolutely unacceptable ... We're left with a watering down of the rights of the people of Ontario to have their elected members, particularly their ministers, speak on their behalf on important issues like the death of loved ones and the people in their community.'[138]

However, it is surely preferable that decisions affecting individuals are taken judicially, with political responsibility arising successively in response to judicial findings of policy failure.

This de-politicization of forensic pathology is accompanied by significant institutional restructuring as well, involving a strategic effort to centralize and expand forensic pathology services in Ontario. Most importantly, the Chief Forensic Pathologist has now been established under section 3 of the Act as the head of forensic pathology for the entire province and administers the registry of pathologists, which authorizes recognized and accredited experts to perform post-mortem examinations in Ontario. Further to this was the creation of an Ontario Forensic Pathology Service, which 'would bring all of the province's forensic pathology services under one umbrella to ensure consistency, accountability and oversight.'[139] This service functions to alleviate the chronic shortage of forensic pathologists available to carry out investigations; first, by supporting the education and training of medical students with respect to issues of jurisprudence e.g., the function of expert testimony and the presentation of scientific evidence. Secondly, it is responsible for ensuring post-mortem examinations are properly conducted in northern and First Nations communities in Ontario.[140]

A further recommendation from the Goudge Commission advised the creation of a governing Council 'to oversee the duties and responsibilities of the Office of the Chief Coroner for Ontario'.[141] This Council, legislated through the Coroners Amendment Act 2009, section 4, serves to oversee

[138] http://www.thestar.com/news/ontario/article/523193.
[139] http://news.ontario.ca/mcscs/en/2008/10/strengthening-ontarios-death-investigation-system.html.
[140] http://www.mcscs.jus.gov.on.ca/english/office_coroner/Strength_invest/OCC_strength.html.
[141] Goudge, *supra* note 130 p 590.

the work of Ontario's death investigation system. Members are appointed by Ontario's Lieutenant Governor and oversee the work of the Chief Coroner and the Chief Forensic Pathologist, to 'hold them accountable for the quality of death investigations in Ontario.'[142] In addition, a complaints committee has also been established, to address concerns related to the '…[t]he non-medical roles of coroners and pathologists (e.g., providing evidence in criminal proceedings).'[143] This imposition of quality audit has resonance with the appointment in England and Wales of a Chief Coroner under the Coroners and Justice Act 2009, section 35, save that the United Kingdom government announced in October 2010 that those reforms would not proceed because of costs.[144] However, the government relented in late 2011,[145] and the appointment was made (of Judge Peter Thornton QC) in May 2012.

Reform is also evident in the practice of forensic pathology as a result of the Goudge Commission recommendations. The Coroners Amendment Act codifies a set of standards and best practices for the investigation of suspicious deaths. For example, section 6 outlines procedures in cases where death has occurred when a young person is in custody. On an institutional level, the Office of the Chief Coroner is required to produce an annual report by the Paediatric Death Review Committee and Deaths Under Five Committee. Finally, the provincial government has begun the construction of a new state-of-the-art Forensic Services and Coroner's Complex in Toronto, to be completed by 2013.[146]

What the Goudge Inquiry ultimately endorsed for courts was an 'evidenced-based' approach to the reception of expert testimony at trial,

[142] Remarks by the College of Physicians and Surgeons of Ontario to the Justice Policy Committee on Bill 115, the Coroners Amendment Act March 12, 2009. In this document, the College sought two other amendments to Bill 115: to loosen legal confidentiality requirements so as to increase information-sharing and to require the Coroner's Office to notify the College if a "pathologist or any other member of the College (acting under powers or duties under section 28) has committed an act of professional misconduct, is incompetent, or is incapacitated" (p.3).

[143] http://news.ontario.ca/mcscs/en/2008/10/strengthening-ontarios-death-investigation-system.html.

[144] See C. Fairbairn, Abolition of the office of the Chief Coroner (House of Commons Library SN/HA/05721, London, 2010).

[145] See C. Fairbairn, *The Office of the Chief Coroner* (SN/HA/05721, House of Commons Library, London, 2011).

[146] http://www.mcscs.jus.gov.on.ca/english/ForensicServicesandCoronersComplex/FSCC_intro.html.

which involves addressing questions of reliability, not only of the theory or technique itself, but of the use made of it by the expert. Additionally, the Inquiry advocated for unbiased and objective experts, who are transparent and rejecting of extraneous information. Finally, this approach requires experts at trial to clearly articulate their opinions in a critical manner, as well as the reasoning that lead to their opinions and their level of certainty with respect to their opinion.[147] The extent to which courts have responded to this call remains to be seen.

One of the most egregious errors Smith committed occurred in the case of William Mullins-Johnson, who has since received an apology and compensation from the provincial government. Mullins-Johnson was convicted of sexually assaulting and murdering his four-year-old niece Valin, in 1995, based largely on Dr. Smith's testimony, and received a life sentence. After serving twelve years in prison he was released and the Ontario Court of Appeal later found that he had been a victim of a miscarriage of justice and acquitted him[148]; in fact no assault or murder had occurred at all and Valin had died of natural causes. In October 2010 Mullins-Johnson was awarded $4.25 million in exchange for dropping the civil suit he had instigated for $13 million against Dr. Smith, and his two supervisors, former chief coroner Dr. James Young and his deputy, Dr. James Cairns.[149]

147 From *Goudge, supra* note 57, at 376, 387-390, 427, as found in D. Paciocco, "Taking a "Goudge" out of Bluster and Blarney: an "Evidence-Based Approach" to Expert Testimony" (2009) 13, 2 *Canadian Criminal Law Review,* at 146-147.

148 *R. v. Mullins-Johnson*, 2007 ONCA 720

149 Two other victims of Dr. Smith's errors recently found some form of redress. In January of 2011, the Ontario Court of Appeal found Dinesh Kumar's conviction for the murder of his son to be unreasonable and entered an acquittal. Kumar had plead guilty to criminal negligence causing the death of his five-week old son Gaurov in 1992, which was thought to have resulted from shaken baby syndrome at that time, based on the expert opinion of Dr. Charles Smith. New evidence presented to the Court of Appeal demonstrated that Smith's conclusions were no longer "scientifically valid". (http://www.cbc.ca/canada/toronto/story/2011/01/20/dinesh-kumar365.html#ixzz1BcNjGLa8). Also in January 2011, Tammy Marquardt's conviction for the murder of her son in 1993 was overturned. Marquardt conviction was based on Smith's testimony that her two-year old son Kenneth, who had a history of epileptic seizures, was asphyxiated; Marquardt served fourteen years in jail before she was released in 2009. It is uncertain as to whether the Crown will proceed with new charges against Marquardt. (http://www.theglobeandmail.com/news/national/toronto/new-trial-for-tammy-marquardt-imprisoned-on-baby-boys-death/article1888753/).

In August 2010, the Ontario government offered what it termed 'recognition' payments to individuals who had been affected by flawed paediatric forensic pathology, aimed specifically at the individuals connected to the 19 cases examined by the Goudge Inquiry. Each case was to be examined individually in order to determine the amount owed in recognition of suffering involved; establishing these payments was based on the advice of a committee, which formed in response to a recommendation from the Inquiry, chaired by former Associate Chief Justice Coulter Osborne.[150] Interestingly, eligibility was not restricted to individuals directly affected (who themselves are eligible for up to $250,000), but children removed from their homes due to these errors were eligible for payments of up to $25,000 and family members for up to $12,500; full legal costs were also reimbursable. The Ministry of the Attorney General for Ontario appointed the Honourable Chester Misener to make decisions regarding eligibility and quantum. Eligibility was based on anyone having been investigated, charged or convicted in relation to the death of a child in one of the 19 cases from the Inquiry (where the conviction was set aside), where faulty pediatric forensic pathology was a material factor in the case, being a family member (spouse, parent, grandparent, child, grandchild) of eligible individuals who was directly affected by their relative's interaction with the criminal justice system or having spent money on legal fees in the defence of the criminal charges or related child protection proceedings.[151] Moreover, factors considered in assessing quantum included: loss of liberty, mental harshness and indignity, damage to reputation, loss of income, whether family members suffered or other personal relationships were affected and whether the conduct of the individual that was investigated, charged, or convicted contributed to their interaction with the criminal justice system.[152]

The government placed a fairly strict time frame on this form of compensation and individuals had until August 10th, 2012 to apply, or

[150] Ontario, Ministry of the Attorney General. http://www.attorneygeneral.jus.gov.on.ca/english/news/2010/20100810-goudge-nr.asp
[151] ***Ibid***
[152] ***Ibid***

within 2 years of having their final disposition resulting in a conviction being set aside, or whichever date was latest. As of January 1st, 2012, expressions of interest or letters regarding the process were received from 86 individual family members or indirect applicants; 18 of which did not proceed forward for various reasons. Payment was made on a total of 55 applicants totally $3,037,747.77 to applicants and $43,000 in legal fees. At the same time, there were 10 direct applicants entitled to apply on August 10, 2010; three chose not to apply but to proceed differently. For the remaining seven, four were allowed a maximum payment of $250,000 each and the remaining three received $200,000 in payment, however reductions of 15%, 20%, and 90% respectively, were made in these latter cases. Thus, the total payment for the seven direct cases was $1,100,000.[153]

Overall the Government of Ontario's responses to the Goudge Commission Report's recommendations have been substantial. Forensic pathology in that province has now been transformed in terms of accountability and transparency. In February 2011, the Ontario College of Physicians and Surgeons instituted a disciplinary hearing against Dr. Smith for failing to maintain the standard practice of the profession and engaging in 'conduct or an act or omission relevant to the practice of medicine that, having regard to all the circumstances, would reasonably be regarded by members as disgraceful, dishonourable or unprofessional'.[154] Smith was absent from this hearing and plead no-contest to these charges through his lawyer, the College nevertheless stripped him of his license to practice medicine (the maximum penalty it is allowed to impose), and fined him $3,650 in costs. This ruling only applies in the province of Ontario and after one year Smith can apply to be re-certified. The generally swift and comprehensive reaction to the Report's recommendations will hopefully ensure that the likelihood of another wrongful conviction arising from the unreliable testimony of paediatric forensic pathologists is significantly reduced.

[153] Information regarding payment of was provided through correspondence with the Ministry of the Attorney General of Ontario.

[154] http://www.cpso.on.ca/whatsnew/committeeschedule/default.aspx?id=1448&terms=Charles+Smith.

CONCLUDING REMARKS

As noted in the U.K. House of Commons Select Committee on Science and Technology's Seventh Report,[155] 'where miscarriages of justice have arisen in association with problems in expert evidence, this reflects a systems failure.' Given that miscarriages of justice generally occur due to the confluence of compounded errors, a systemic approach to solving these dilemmas seems fitting. The legal system in England and Wales has been unconscionably slow to react to its evident problems with forensic science, clearly outlined by the *Runciman Report* in 1993 and further underlined by the failures in sudden infant death cases in the ensuing years. Some important changes, such as the CCRC, did flow from the *Runciman Report*, but a more comprehensive reform program is only recently underway. The protocol put forward by the joint working group of the Royal Colleges for Paediatricians and Pathologists, discussed earlier, offers a sensible multi-agency response, which incorporates high professional standards as well as a sensitive response to sudden infant death. The courts and court rules have also recently begun to implement changes around expert evidence. The willingness of the United Kingdom to implement organizational oversight is more equivocal. On the one hand, the office of the Forensic Science Regulator reflects a concern for high standards, albeit as a factor of value for money. On the other hand, the closure of the Forensic Science Service announced at the end of 2010[156] and implemented in 2012 despite strong Parliamentary misgivings[157] suggests an abdication of public interest in forensic science standards.

The reform programme in the legal system of England and Wales offers valuable lessons for other jurisdictions. Its experiences underline the lesson that the task of ensuring high standards of forensic evidence requires enduring vigilance and self-criticism rather than a single reform deed. However, without systemic and institutional reform, backed by resources

[155] House of Commons Science and Technology Committee, Forensic Science on Trial (2004-05 HC 96) Summary.
[156] House of Commons Debates vol.520 col.94ws 14 December 2010, James Brokenshire.
[157] House of Commons Science and Technology Committee. *The Forensic Science Service* (2010-12 HC 855).

and funding, as sustained in the province of Ontario following the Goudge Commission of Inquiry recommendations, the danger is that standards will slip as the lessons of past tragedies grow dim.