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Dr. Smith and the Practice of Pediatric Forensic Pathology

As required by my terms of reference, I have conducted a systemic review of the policies, procedures, and practices of pediatric forensic pathology in Ontario from 1981 to 2001. In this chapter, I report on that review and assess the systemic failings it revealed. They provide the basis for the policy recommendations I make in Volume 3 to improve the practice of pediatric forensic pathology and to ensure, so far as possible, that history will not repeat itself.

This chapter examines the practices used in pediatric forensic pathology in individual cases, and how those practices could and did fall short of what is required. In Chapter 9, Oversight of Pediatric Forensic Pathology, I do the same when considering the mechanisms of oversight of that work, again to expose the failings that could and did occur. In both contexts, it must be remembered that what was happening with pediatric forensic pathology reflects in very large measure what was happening with forensic pathology generally. The practices used, the oversight mechanisms available, and the shortcomings were common to both. In this sense, pediatric forensic pathology is a subset of forensic pathology.

Before I turn to a detailed report on the troubling aspects of pediatric forensic pathology as practised in Ontario from 1981 to 2001, several things must be said. First, although the Inquiry heard considerable evidence of a general kind about the practice of pediatric forensic pathology in those years, our review for the most part focused on Dr. Charles Smith and the way he did his work. This focus reflects the reality that the errors he made were a primary cause of the significant loss of public confidence that made the review necessary. It is important that these errors be identified because my recommendations must address them if public confidence is to be restored.

Second, although much of what we heard dealt with Dr. Smith, the evidence also showed that, in a number of instances, other pathologists were involved as well. Some made the same errors he did. Many, and in some instances most, fol-

lowed some of the same practices. In all these instances, however, the serious errors that were made, whether by Dr. Smith or others, exemplify grave systemic problems with the practice of pediatric forensic pathology in Ontario at that time. The troubling problems were not confined to Dr. Smith. Without correction of these systemic failings, these errors could well occur again. These were not merely the isolated acts of a single pathologist that could be fixed by his removal.

Third, the evidence of Dr. Smith's mistakes in individual cases is derived largely from 18 of the cases that were the subject of the Chief Coroner's Review ordered by the Office of the Chief Coroner for Ontario (OCCO) and that were examined in detail in our hearings. These cases were selected for the Chief Coroner's Review because they involved Dr. Smith and they engaged the criminal justice system. Although the evidence about Dr. Smith's work in these cases paints a stark picture of the grave errors he made, it is not my role to determine whether or to what extent his mistakes might have led to a wrongful conviction. Whether or not that occurred, the errors were nonetheless serious. They represent ways in which the practice of pediatric forensic pathology in Ontario in Dr. Smith's time could and did go badly wrong.

Fourth, these cases were part of a complete review of Dr. Smith's work in criminally suspicious cases between 1991 and 2001. They provide little basis, however, on which firm conclusions can be drawn about his work in hospital pathology or his work for the OCCO in cases that were not criminally suspicious.

Finally, it is important to remember that the troubling aspects of the practice of pediatric forensic pathology that occurred in Ontario during this time took place within a setting larger than that of the individual pathologists. As my review of the oversight of pediatric forensic pathology in Ontario in these years later describes, the senior officials who oversaw the death investigation system must also be held responsible for the tragic events about which I have heard.

I turn then to the various aspects of Dr. Smith's work that I have found wanting and that demonstrate systemic failings in the practice of pediatric forensic pathology from 1981 to 2001. I will begin with the training and experience that Dr. Smith brought to his work.

Training and Experience

In this section I address three questions. First, what was Dr. Smith trained and certified to do, and what training did he lack? Second, how did he become the dominant figure in pediatric forensic pathology when he had no formal training or expertise in the core discipline, forensic pathology? And third, how did this deficiency affect his work in the cases before me?

Dr. Smith's Training

Dr. Smith is a pediatric pathologist, not a forensic pathologist. He has neither formal forensic pathology training nor board certification in that field. Nevertheless, the OCCO and the Hospital for Sick Children (SickKids) appointed him director of the Ontario Pediatric Forensic Pathology Unit (OPFPU) in 1992, and, with time, he came to be known as the province's leading expert in pediatric forensic pathology. Dr. Smith now acknowledges that his forensic pathology training was "woefully inadequate" and that this gap contributed significantly to his mistakes in the cases examined by the Commission.

In the 1980s and 1990s, no formal forensic pathology training or certification was offered in Canada. That remains the case today. The Royal College of Physicians and Surgeons of Canada (Royal College) does not yet offer specialty training or certification in forensic pathology. By contrast, the United States and the United Kingdom have offered specialty examinations in forensic pathology since the 1960s.

In the absence of well-defined postgraduate training programs, pathologists doing forensic work in Canada have traditionally been self-taught or have resorted to informal training networks. A small number have obtained qualifications outside Canada. Few of the pathologists who performed post-mortem examinations for the OCCO in the 1980s and 1990s were formally trained and certified in forensic pathology. Those who did receive formal training and certification did so in the United States or the United Kingdom.

Indeed, in the 1980s and 1990s, the prevailing Canadian view was that pediatric pathologists were best situated to perform forensic autopsies on infants and children. As a result, expertise in pediatric pathology was emphasized over training and qualifications in forensic pathology.

Dr. Smith graduated from the University of Saskatchewan medical school in 1975. He then spent the first two years of his anatomical pathology residency there, and his final two years with the University of Toronto. His fourth and final year was spent at SickKids in pediatric pathology. During his residency, he performed some coroner's autopsies; however, none was in a criminally suspicious case. After completing his residency in anatomical pathology, Dr. Smith remained at SickKids from July 1980 to July 1981 to train further as a Fellow in pediatric pathology. During his fellowship year, he performed some forensic autopsies, but, again, none were in criminally suspicious cases.

In November and December 1980, Dr. Smith passed the examinations in anatomical pathology offered by the American Board of Medical Specialties (American Board) and the Royal College, respectively, and was certified as an

anatomical pathologist. At that time, examinations in the subspecialty of pediatric pathology were not offered in either the United States or in Canada. Nineteen years later, however, that had changed in the United States, and in 1999, he passed the American Board examination and also became certified in pediatric pathology.

In 1981, after completing his fellowship, Dr. Smith started working full time at SickKids. He had no forensic pathology training, and only limited exposure to criminally suspicious cases and death investigations. Because of his strong interest in autopsies, however, he began to perform more of them than did his pathology colleagues at SickKids, who were primarily interested in clinical pathology. By the 1990s, most of his autopsy work was forensic pathology, that is, autopsies performed under coroner's warrant.

Despite his increasing concentration on forensic work, Dr. Smith did not take any forensic pathology training. His continuing medical education, which consisted of attending conferences and reviewing the available literature, focused primarily on pediatric pathology. He told us that at that time he did not view forensic pathology as a separate discipline that could inform his work. He received no training in either injury identification or the appropriate role of the forensic pathologist in the criminal justice system. He had no exposure to any certified forensic pathologists and did not appreciate that there was any value in obtaining knowledge about forensic pathology. As Dr. Smith admitted, "[t]hat thought didn't cross my mind, and certainly no one suggested it ..." Instead, he picked up his limited understanding of forensic pathology on the job.

Over time, however, Dr. Smith's reputation grew. In the mid-1980s, he began lecturing on pediatric forensic pathology, particularly about issues relating to the criminal justice system. By the 1990s, he was lecturing on the subject to Crown counsel and police officers and had become a regular participant at educational courses offered for coroners. There is no doubt that he became an effective speaker to these audiences. At the Inquiry, Dr. Smith testified that these speaking engagements helped to build his experience and comfort level in both pediatric pathology and forensic pathology. His growing reputation seems to have been based more on these speaking engagements than on his work in criminally suspicious cases. It certainly was not based on any formal training in forensic pathology.

Dr. Smith's Experience

In 1992, as mentioned above, the OCCO and SickKids agreed that Dr. Smith should become the first director of the OPFPU. The evidence at the Inquiry sug-

gests that the OCCO and SickKids did not select him on the basis of his forensic pathology expertise. He had only limited experience with criminally suspicious pediatric cases, which are often the most difficult in pediatric forensic pathology. To that point in his career, he had been involved in only 10 to 15 such cases, by his own estimate. Many of those did not involve giving evidence – another aspect of forensic pathology in which he had no training. Dr. M. James Phillips, the pathologist-in-chief at SickKids who formally appointed Dr. Smith to the director's position, was not a forensic pathologist and not in a position to evaluate Dr. Smith's forensic training, skills, or expertise. The OCCO wanted to have someone who would specialize in pediatric forensic pathology and appears to have been moved more by Dr. Smith's reputation and interest than concerned about his lack of training. Equally important, Dr. Smith was the only pathologist at SickKids who had the time and inclination to take on the role. He filled a void that no one else wanted to fill.

As director of the OPFPU and with the active support of the OCCO, Dr. Smith became the dominant pathologist for child abuse and homicide cases in Ontario. He brought with him an impressive title and a growing reputation and, relatively quickly, came to be perceived as the authority in pediatric forensic pathology. Dr. Smith also presented himself in this way. When he testified in September 1994 in Valin's case, for instance, Dr. Smith told the court that, as director of the OPFPU, a "unique" unit in Canada and indeed North America, he probably performed more pediatric forensic autopsies than anyone else in the country. In April 1998, he told the court in Sharon's case that, given his vast experience with pediatric cases, he was more qualified to assess a child's penetrating wounds than a forensically trained pathologist, whose primary experience would have been with adults.

We now know, as Dr. Smith himself admitted, that he was self-taught and his forensic pathology education and training were "minimal" and "woefully inadequate." He simply did not have the specialized professional skills necessary for the work. He acknowledged that his lack of training and expertise contributed significantly to the mistakes he made. This problem was especially true in criminally suspicious pediatric cases, particularly the more difficult ones involving, for example, identification of injury or the timing of the infliction of injury. The consequences are best illustrated in three cases – the cases of Valin, Sharon, and Jenna – where he committed basic forensic pathology errors, with tragic consequences.

Consequences in the Cases of Valin, Sharon, and Jenna[1]

In Valin's case, Dr. Smith did not perform the post-mortem examination but was consulted for a second opinion in August 1993 and testified in court in September 1994. Because he did not understand that normal post-mortem changes can include bruising of the neck and dilation of the anus, Dr. Smith wrongly concluded that Valin had died of manual strangulation and that she had been sexually assaulted. Other pathologists agreed with his opinion, to varying degrees. At the time he provided his consultation report and testified at the trial of Valin's uncle, William Mullins-Johnson, Dr. Smith had never before been involved in a post-mortem examination of a sexually abused child. Many years later, qualified forensic pathologists who reviewed the case, including those who conducted the Chief Coroner's Review, concluded that the cause of Valin's death was unascertained and that there was no evidence of sexual abuse. Dr. Smith's observations of "ulceration, laceration, and hemorrhage in the anus" were properly attributable to the dissection of tissue or its preparation for microscopic work. The dilation of the anus, and much of what Dr. Smith described as bruising to Valin's body, represented post-mortem artefacts – that is, post-death occurrences that have no pathological significance.

Dr. Smith's basic mistakes in interpreting the autopsy findings reflect his inadequate training in forensic pathology. However, he compounded them by failing to recognize the limits of his own expertise. When the pathologist who conducted the post-mortem examination consulted him on the case, Dr. Smith had neither the training nor the experience to provide that opinion. He ought to have recognized his limitations. Dr. Smith's lack of training and experience, and his failure to recognize his lack of experience, had serious consequences. The Court of Appeal for Ontario has concluded that Mr. Mullins-Johnson was wrongly convicted of first-degree murder, yet he spent more than 12 years in prison.

In Sharon's case, Dr. Smith performed the post-mortem examination in June 1997 and concluded that the cause of death was blood loss due to multiple stab wounds. He testified at the preliminary hearing that the wounds were consistent with having been caused by scissors. Dr. Smith was wrong. The stab wounds that Dr. Smith observed at the post-mortem examination were in fact dog bites. When Dr. Smith performed the autopsy, however, he had virtually no training or previous experience with either stab wounds or dog bites. His inexperience with wound interpretation led to this very significant misdiagnosis. At the Inquiry, Dr. Christopher Milroy, a forensically trained and certified pathologist with experi-

[1] See Appendix 28 at the end of Volume 4 for summaries of the cases.

ence in the area, pointed to several basic errors in Dr. Smith's interpretation of Sharon's wounds.

First, Dr. Smith misinterpreted the edges of the wounds, which displayed significant abrasion and contusion. According to Dr. Milroy, this condition indicated that the injuries were not caused by a sharp penetrating weapon, such as scissors or a knife. Contrary to Dr. Smith's testimony at the preliminary hearing, the appearance of the injuries was actually inconsistent with stab wounds.

Second, Dr. Smith failed to recognize that there was a canine bite mark pattern on some of the injuries and on the skull. At the preliminary hearing, Dr. Smith testified that Sharon's wounds and the marks on her skull did not reveal any dog teeth marks. According to Dr. Milroy, Dr. Smith was wrong on both counts. In at least one of the photographs, the injury displayed a patterned abrasion that was highly suspicious of the arch of a dog's teeth. And, on Sharon's skull, there was an almost circular area of indented penetrating fractures, a characteristic of animal tooth bite marks.

Third, Dr. Smith misinterpreted an injury to Sharon's scalp, part of which was torn off during the attack. Dr. Smith testified at the preliminary hearing that the scalp appeared to have been "cut or incised" with some crushing or tearing, indicative of the use of scissors. Dr. Milroy, however, found that the scalp had a lacerated wound edge suggesting that it had been torn or ripped away, not cut.

Fourth, Dr. Smith misinterpreted the wound tracks. He testified at the preliminary hearing that some of the injuries had a double-pointing mark and, in some instances, there were two tracks to the injury. In his view, both characteristics were consistent with the use of scissors. Dr. Milroy told us that one could not be sure that some of the wounds displayed double-pointing marks. In any event, scissors have two blades, with blunt outer edges. Thus, in a penetrating wound caused by scissors, one would typically observe two blunt edges to the wound, not two pointed edges.

Fifth, Dr. Smith failed to consider that the distribution of the injuries to Sharon's body weighed heavily in favour of a dog attack, not a stabbing. The wounds were largely to Sharon's upper arms and neck, with little injury to her trunk. According to Dr. Milroy, a dog would tend to clamp onto the neck and arms with its jaws, but not the trunk – the latter being more difficult to grip. In a stabbing, by contrast, the trunk is typically the target, and there are usually defensive wounds to the hands and forearms as the victim attempts to fend off the attacker. The injuries to Sharon's arms were not defensive wounds. The relative absence of injury to Sharon's trunk and the lack of defensive wounds were strong evidence that Sharon was not stabbed.

In his closing submissions at this Inquiry, Dr. Smith noted that other experts,

including a forensic odontologist, Dr. Robert Wood, also misinterpreted Sharon's wounds. This is true, but does not excuse Dr. Smith's errors in the case. Dr. Smith expressed his opinion that Sharon's injuries were stab wounds several months before Crown counsel consulted Dr. Wood. The reality is that each of the errors identified above contributed to Dr. Smith's misdiagnosis in the case. Had he properly interpreted the wounds, he would not have arrived at the conclusion that he did, regardless of Dr. Wood's opinion. In my view, with appropriate forensic pathology training and expertise, he likely would not have made the basic errors that he did.

Dr. Smith's mistake in Jenna's case was not with respect to the cause of death. Instead, he erred in his interpretation of the timing of Jenna's multiple abdominal injuries. Cases involving the timing of multiple injuries causing death are extremely difficult and require sound forensic pathology knowledge. It is evident from a review of the events of Jenna's case that Dr. Smith lacked the training and experience to take on such a difficult task.

Because the body reacts to injury over time, the forensic pathologist may assist in establishing when a child suffered an injury by examining the progress of the body's healing reaction to the injury at the time of death. For instance, once an injury is inflicted, inflammatory cells rush into the tissue to repair the damage. That process stops when the injured person dies. So, the level of inflammation in the tissue helps the forensic pathologist assess how long before death the damage was sustained.

Dr. Smith performed the post-mortem examination on Jenna's body in January 1997 and correctly determined that Jenna had suffered multiple abdominal injuries. Where Dr. Smith erred, however, was in his ultimate diagnosis of when Jenna suffered her injuries. His error was significant because timing was a central issue in the death investigation, since establishing the timing of the injuries had the potential to exclude one or the other of the two suspects: Jenna was in the care of her mother, Brenda Waudby, before 5 p.m. on the evening of her death, and with her babysitter after 5 p.m.

An added dimension of the problems caused by Dr. Smith in this case is that, over the course of his involvement, he provided several different opinions on the timing of Jenna's injuries. First, after the autopsy, he told the police that there was no evidence to suggest that the injuries to the duodenum, pancreas, and liver had begun to heal, indicating that they had occurred within a few hours of death. This suggested that Jenna's fatal injuries were inflicted while she was in the care of her babysitter.

Subsequently, however, Dr. Smith's opinion appeared to change. One month after the autopsy, in February 1997, Dr. Smith informed representatives of the

OCCO and the police that, although he could not determine the exact time of Jenna's fatal injuries, all injuries took place within 24 hours of death. The police understood Dr. Smith's opinion to mean that Jenna's fatal injuries had occurred approximately 24 hours before her death. Because Ms. Waudby was the only one who had care of her daughter during that time, the police charged her with second-degree murder.

In October 1998, Dr. Smith testified at the preliminary hearing in the case. His evidence on the timing of the injuries can only be described as extremely confusing. His testimony could be understood to say that the healing reactions to Jenna's abdominal injuries suggested that the injuries occurred at different times. However, in all the confusion and apparent discrepancies in timing, Dr. Smith appeared to arrive at a final conclusion by assuming that all Jenna's abdominal injuries occurred at the same time, which could have occurred some 24 or 28 hours before death. Ms. Waudby had care of her daughter during this window of time. The preliminary hearing judge thus committed Ms. Waudby to stand trial on the charge of second-degree murder.

After the preliminary hearing, Dr. Smith's opinion appeared to change once again in the face of contrary opinions. The defence retained a clinician, Dr. Sigmund Ein, a staff surgeon at the Division of General Surgery at SickKids, to examine the timing of Jenna's fatal injuries. In December 1998, Dr. Ein spoke to Dr. Smith about the issue. Both agreed that the fatal injuries occurred on the evening of Jenna's death, which was clearly contrary to the thrust of Dr. Smith's evidence at the preliminary hearing. Then, in April 1999, during a meeting with Dr. Ein, Crown counsel, defence counsel, and the police, Dr. Smith again agreed with Dr. Ein's opinion that Jenna sustained her fatal injuries after 5 p.m. on the evening of her death. Ms. Waudby did not have care of Jenna at that time. Instead, these opinions implicated Jenna's babysitter as the perpetrator.

At the April 1999 meeting, Dr. Smith and the other experts noted, however, that there were also healing rib fractures that happened earlier than the "after 5 p.m." time frame, likely in the days before death. Although they did not cause Jenna's death, they were relevant to the question of whether Jenna had previously been abused.

In June 1999, the Crown withdrew the second-degree murder charge against Ms. Waudby. Before that withdrawal, however, Ms. Waudby pleaded guilty to a charge of child abuse under the *Child and Family Services Act*, RSO 1990, c. C.11, in relation to an incident that occurred in the one to three weeks before Jenna's death. The healing rib fractures, which the experts opined were older than Jenna's fatal injuries, served as the pathology evidence that supported her plea. In other words, according to the factual basis for the plea, although Ms. Waudby was not responsible for the fatal blows, she had abused Jenna in the past.

Dr. Milroy and Dr. Michael Pollanen, Chief Forensic Pathologist, have since reviewed the case. At the Inquiry, Dr. Milroy testified that the pathology findings indicated that the fatal abdominal injuries were likely less than six hours old. There was no inflammation in Jenna's abdominal injuries, suggesting that they had just been inflicted and that a healing reaction had not yet commenced. In addition, the information that Jenna appeared fine when Ms. Waudby handed Jenna to her babysitter at 5 p.m. supported the conclusion. If Jenna had already sustained her injuries by that time, she would have been in obvious pain. Dr. Pollanen also noted, after a review of the histology, that none of the rib fractures that Dr. Smith observed at the autopsy showed a healing reaction. Instead, they occurred at or around the time of death. As a result, the pathology evidence that, along with Ms. Waudby's plea, formed the basis for the child abuse conviction also could not be confirmed on review.

According to the expert forensic pathologists who reviewed the case, there was actually no pathology evidence to support Dr. Smith's opinion at the preliminary hearing that Jenna's fatal injuries could have occurred some 24 or 28 hours before death. Although there was an older liver injury that could have occurred up to several days before Jenna's death, that was not the immediate cause of her death. In Dr. Pollanen's view, Dr. Smith erred by grouping the abdominal injuries together and finding that they all occurred in one period of time. Dr. Smith failed to recognize that the apparent discrepancies in timing suggested that the injuries were inflicted at two different times.

Dr. Smith's misdiagnosis of the timing in Jenna's case had significant consequences for the criminal and child protection proceedings. The criminal case against Ms. Waudby rested primarily on Dr. Smith's opinion. Once it became clear that Dr. Smith's opinion implicating Ms. Waudby was incorrect, and that Ms. Waudby did not have care of Jenna at the time of her fatal injuries, the Crown properly withdrew the second-degree murder charge.

At the Inquiry, Dr. Smith was asked to explain his various opinions on timing. He said that, after the autopsy, when he told the police that the injuries were only a few hours old, he had not yet conducted a microscopic examination of the wounds. Once he reviewed the histology, he reached the opinion that the injury to Jenna's liver had a more advanced healing reaction, suggesting that it occurred in the range of 24 to 48 hours before death. He said that he never believed that the fatal injuries were all 24 to 48 hours old but always recognized, based on the healing reactions he observed microscopically, that some of the injuries were much more recent than that. In his view, however, his opinion on the timing of the fatal injuries needed to take the older liver injury into account, as that could have contributed to Jenna's death. As a result, he extended the time period in

subsequent meetings and in his evidence at the preliminary hearing. In fact, in giving evidence before me, he stated that he continued to be of the opinion that it was possible that the older liver injury contributed to Jenna's death, and he therefore disagreed with Dr. Milroy's opinion that Jenna died within six hours of her fatal injuries.

However, there is no doubt that Dr. Smith agreed with Dr. Ein in December 1998 and April 1999 that Jenna died within six hours of her fatal injuries. At the Inquiry, Dr. Smith attempted to explain the contradiction. He testified that Dr. Ein's opinion was based on clinical information, such as Jenna's behaviour, which he, Dr. Smith, had no reason to question. He, however, had based his opinion on pathology information, including the microscopic analysis of the liver, with which he did not expect Dr. Ein to be familiar. Although he believed that the pathology evidence supported his view, he did not dispute the clinical evidence and, therefore, did not disagree with Dr. Ein at the 1998 and 1999 meetings.

Cases involving the timing of multiple injuries, as in Jenna's case, are some of the most difficult cases that forensic pathologists see. Dr. Smith's struggle in determining the timing of Jenna's abdominal injuries was therefore understandable. I also accept that, in cases involving multiple injuries, the pathologist might not decide which specific injury caused the child's death and instead consider all or several of them to be contributing factors to the death. However, I cannot accept Dr. Smith's explanation of his inconsistent positions. I have reviewed the transcript of Dr. Smith's evidence at the preliminary hearing. At no point in his evidence did Dr. Smith suggest that the liver injury was likely sustained at a different time than the other injuries. In fact, he asserted the opposite. Moreover, he placed more reliance on the liver injury than the others when arriving at an opinion on the timing of the fatal injuries.

In addition, there is nothing to suggest that, in December 1998 and April 1999, Dr. Smith did anything except agree with Dr. Ein's position that the injuries were only a few hours old by the time Jenna died. If Dr. Smith believed at that time that the older liver injury contributed to Jenna's death, I do not understand why he would have kept that belief to himself. In any event, if he had thought that, he certainly should have made it clear to the police, Crown counsel, and the court.

Instead, I agree with Dr. Pollanen's assessment of Dr. Smith's opinion. His fundamental error was in assuming that all the injuries took place within the same time frame. Recognizing that there were some discrepancies in the timing of the injuries, Dr. Smith should have questioned the basic assumption on which he operated – that the injuries were inflicted together – rather than try to fit those discrepancies into one period of time. Had Dr. Smith pushed that analysis a little further, he would have recognized that the pathology evidence supported the

view that Jenna had actually been injured on two occasions. Dr. Smith's lack of knowledge about the timing of fatal injuries caused him to make a significant error regarding the timing of Jenna's injuries.

I draw two main lessons from these episodes. First, Dr. Smith lacked basic knowledge about forensic pathology. It is true that few pathologists were trained in forensic pathology, and that, in several of these cases, other doctors made the same mistakes he did. It is clear, however, that many pathologists without proper forensic training shied away altogether from criminally suspicious cases or were careful to obtain the assistance of those few who had the requisite knowledge in forensic pathology. No other pathologists threw themselves into the challenging area of pediatric forensic pathology, untrained, quite the way Dr. Smith did. Moreover, Dr. Smith tended to work in isolation. He did not readily seek advice from or consult with colleagues about his difficult cases. Over the course of time, as we have seen, this behaviour exacted an unacceptable price in a sequence of cases.

Second, when Dr. Smith now says he was unaware of what he did not know and how damaging that lack of knowledge would be to the validity of his work, he violated a cardinal rule of scientific expertise, especially where it is engaged by the justice system. The expert must be aware of the limits of his or her expertise, stay within them, and not exaggerate them to the court. Dr. Smith did not observe this fundamental rule.

It is essential for a well-functioning pediatric forensic pathology system that criminally suspicious pediatric cases be handled by pathologists who are properly trained and experienced in forensic pathology. And, like all experts, these pathologists must know the limits of their knowledge and observe them.

The Post-Mortem Examination

Many of the pathology practices that Dr. Smith followed illustrate systemic failings that could and did occur in the practice of pediatric forensic pathology from 1981 to 2001. He almost never attended the death scene. He did not always ensure that he had all the relevant medical information before he conducted an autopsy. He was sloppy and inconsistent in documenting the information he did receive. He was indiscriminate in accepting and appearing to rely on information about the social history of those allegedly involved with the death. His reports were typically nothing more than a recitation of the findings at autopsy, and his conclusions typically gave no elaboration of either a reasoning process or supporting literature that might provide a persuasive connection between facts and conclusion. Finally, his reports were frequently very late.

These practices carried adverse consequences for both his work and its utility

to the criminal justice system. Autopsies were performed without the necessary relevant information, but with irrelevant information that left scientific conclusions skewed by unscientific considerations. Untimely post-mortem reports that contained bald conclusions were, at best, of little use to the criminal justice system and, at worst, misleading. Taken collectively, these practices confounded the independent reviewability of his work that is essential for sound practice.

Dr. Smith now says that, in engaging in these practices, he was merely doing what pathologists customarily did in those days. On the basis of the evidence I heard, I can agree that there were other pathologists who did what he did. Although I cannot say with certainty how widespread all of these practices were, they exemplify serious systemic problems.[2] Because of the difficulties they caused, they must be addressed if public confidence is to be restored.

Acquiring Information

It is essential that the pathologist receive and consider all relevant information when conducting a post-mortem examination. This will increase the likelihood of a thorough autopsy and a correct opinion regarding the cause of death. The pathologist must also record the information received and retain copies of those records. This is important to allow the post-mortem examination to be independently reviewed.

The forensic pathologist cannot and should not perform the post-mortem examination in a vacuum. Pathologists need as much relevant information as possible before entering the autopsy suite. The forensic pathologist may obtain information about the case from a variety of sources before the autopsy begins. These sources include the warrant for post-mortem examination, the coroner, the police, a visit to the scene, the treating physicians, and medical records. This information may be very important in two ways. First, it may guide the pathologist during the post-mortem examination. For example, medical records might direct a pathologist to sample and test for certain natural diseases or conditions. Consulting with physicians who cared for the child might point to the need for additional tests. Second, the information may assist the pathologist in interpreting properly the findings made during the post-mortem examination. For instance, medical records could indicate what steps emergency physicians took to resuscitate the child, ensuring that the pathologist does not misinterpret changes

[2] It is clear, however, that pathologists rarely attended the scene of death, and reports of post-mortem examination typically included nothing more than pathologists' autopsy findings and cause of death diagnosis. I discuss these practices in more detail below.

caused by those efforts. Similarly, information provided by the coroner or the police could lead the pathologist to consider other potential causes of death.

Obtaining Relevant Information

In the 1980s and 1990s, no formal systems were in place to ensure that the forensic pathologist obtained all the relevant information about a case. During that time, coroner's warrants for post-mortem examination usually provided little information and few details. Coroners did not always speak with the forensic pathologist before the post-mortem examination to supplement the information contained in the warrant. Instead, pathologists usually received information relating to the case from the forensic identification officer who attended the autopsy. This lack of communication narrowed the sources of information for the pathologist. Moreover, there were occasions when the police obtained additional information that was very relevant to the pathology opinions after the completion of the post-mortem examination, but did not provide that information to the pathologist.

The pathologist largely depends on others to collect and provide relevant information. For instance, the pathologist has no authority to obtain information directly from the hospital or the child's family practitioner. Pursuant to s. 16(2) of the *Coroners Act*, RSO 1990, c. C.37, that authority lies with the coroner. The pathologist can ask the coroner to obtain additional information, but only if the pathologist knows what to ask for.

Failing to obtain the necessary information about a case or to act on it may cause the pathologist to miss necessary tests or misinterpret the significance of a particular finding. Such mistakes increase the risk of misdiagnosis – as is readily seen in Amber's case and Jenna's case.

Amber was in the care of her babysitter when she sustained her head injury. The babysitter said that Amber had fallen. Before Amber died, she was transported to SickKids, where a pediatric radiologist reviewed her CT scan, and a pediatric neurosurgeon performed a craniotomy and removed a subdural hematoma. A physician with the Suspected Child Abuse and Neglect (SCAN) Program also became involved. Before conducting the post-mortem examination, however, Dr. Smith did not consult with the pediatric radiologist or the neurosurgeon. He concluded that a head injury caused Amber's death and that the babysitter had caused it by shaking Amber.

In his reasons for judgment acquitting Amber's babysitter of manslaughter, Justice Patrick Dunn of the Ontario Court (Provincial Division) rejected Dr. Smith's opinion that the cause of death was shaken baby syndrome and criticized him for failing to consult with the treating physicians. Had Dr. Smith consulted with the radiologist and the neurosurgeon, Justice Dunn wrote, he would have

learned that a full skeletal survey had not been performed and that the subdural hematoma had not been sent for analysis. Because he did not consult with the physicians, Dr. Smith did not order a full skeletal survey or a histological analysis of the subdural blood that could have shed light on the alleged fall. Moreover, had the SCAN physician obtained a better history of the alleged fall and had Dr. Smith obtained a more detailed history from her, he might have examined more closely several bruises that he dismissed as being trivial.

I agree with Justice Dunn's criticisms. Dr. Smith erred by not consulting with the relevant physicians. Although it is impossible to know if such a consultation would have affected Dr. Smith's diagnosis, a pathologist should always strive to perform as thorough a post-mortem examination as possible. Dr. Smith did not. Even if Dr. Smith did not have a chance to speak with the physicians before the autopsy, he certainly should have done so before completing his report.

In Jenna's case, Dr. Smith failed to use a sexual assault evidence kit and to take genital swabs during the post-mortem examination. At the Inquiry, he testified that his practice was only to take such samples when specifically requested to do so and in cases where there was some evidence suggesting that a sexual assault might have occurred. As far as he was aware, neither of those circumstances was present in Jenna's case. He testified that nothing in the information he received from the coroner and the police pointed to the possibility of sexual assault, and that he and a SCAN physician, Dr. Dirk Huyer, examined Jenna's anogenital area for signs of sexual abuse and apparently agreed that there were none. Dr. Smith was wrong. The evidence shows that, before the post-mortem examination, Dr. Smith was given a copy of the hospital emergency record, which contained an emergency physician's observation that there were numerous areas of bruising, possible rectal stretching, and tears in the vulva, and that a hair had been found in Jenna's genital region. Although the police and coroner certainly should have highlighted that information for him, Dr. Smith was responsible for carefully reviewing all the information provided to him. That information suggested that Jenna might have been sexually assaulted.

There was also physical evidence of a possible sexual assault that should have affected how Dr. Smith conducted the post-mortem examination. According to Dr. Milroy, reddening was visible in the photographs taken of the vagina. In addition, Dr. Smith found a hair in the genital region, which should have alerted him to the possibility that Jenna had been sexually assaulted. In my view, in light of the evidence suggesting a sexual assault, Dr. Smith's failure to conduct a detailed sexual assault examination, including the taking of genital swabs and the dissection and sampling of appropriate tissues, was inexcusable.

Visiting the Scene

Another source of information for pathologists is the scene itself. In some jurisdictions, forensic pathologists regularly visit the scene of death (or the scene of the incident that leads to death) in criminally suspicious cases. The experts who appeared at the Inquiry gave two reasons why such a visit can be important. First, the forensic pathologist can give early expert assistance to the police and ensure that appropriate trace evidence is properly collected at the scene. Second, and more important, visiting the scene can provide the pathologist with information not otherwise available that may assist the pathologist in analyzing the case. According to the experts, such information may be valuable even if the child's body is no longer at the scene when the pathologist attends.

In the 1980s and 1990s, pathologists in Ontario typically did not visit the scene of death. When a pathologist did visit the scene, it was at the invitation of the investigating coroner in consultation with the police. In most of Ontario, these invitations were extended infrequently. The exception was in Hamilton, where for some time pathologists have regularly visited the scene in criminally suspicious cases. Those pathologists advised the Inquiry that they have found the practice to be very valuable.

In keeping with the general practice, the pathologist did not visit the scene in any of the cases examined by the Commission. In several instances, a visit to the scene might have been of assistance. Two examples are Sharon's case and Joshua's case. Dr. Smith performed the post-mortem examination in both cases. No one asked him to go to the scene, and he did not do so. Visiting the scene in Sharon's case could have assisted Dr. Smith in better appreciating the evidence that supported the theory of a possible dog attack. Similarly, in Joshua's case, where Joshua's mother discovered him in bed with a mound of blankets around him, visiting the scene could have provided more evidence to Dr. Smith that Joshua's dangerous sleeping environment may have caused his death.

In light of the prevailing practice in Ontario in the 1980s and 1990s, I do not criticize Dr. Smith for failing to visit the scene in the cases examined by the Commission. However, as is now recognized, that practice represents a systemic failing in those years.

Disregarding Irrelevant and Prejudicial Information

As I have described above, it is essential that the forensic pathologist receive and consider all relevant information before performing the post-mortem examination. It is equally clear that the pathologist must disregard irrelevant and prejudicial information. Good science demands no less.

The coroner and the police often do not know what information the pathologist

will need. For this reason, there appeared to be a consensus among the experts who appeared at the Inquiry that the more information provided to the pathologist, the better.

Inevitably, some of the information will be irrelevant to the pathologist rendering a reasoned and objective pathology opinion. The justice system expects forensic pathologists to screen out irrelevant or prejudicial information and not be influenced by it when arriving at a diagnosis. Pathology opinions should be based primarily on the pathology evidence, not on irrelevant historical and circumstantial information.

This screening process depends on the pathologist's judgment. There is no list of types of information that the pathologist should automatically disregard. Dr. Pollanen explained that the best way to guard against relying on extraneous information is by emphasizing the importance of practising in an evidence-based framework. As will be discussed in detail in Volume 3, evidence that is relevant to an opinion should be included, and information that is not should be screened out. This approach is more likely to be taken when pathologists are required to explain how their opinions are derived from the evidence.

At the Inquiry, Dr. Smith denied that he ever allowed irrelevant or prejudicial information to affect his decision making in an individual case. It is clear, however, that in a number of cases he recorded irrelevant social history in his reports. For instance, in Kenneth's case, Dr. Smith recorded in the SickKids final autopsy report that Kenneth's mother's husband, who was not Kenneth's father, was not present when Kenneth's body was found because he was with his girlfriend, who was giving birth to his baby. The reason he was not there has no relevance to the pathology, but hints at an adverse moral judgment. In Tyrell's case, Dr. Smith recorded in the final autopsy report that Tyrell's mother had left him in Jamaica when he was young and that his father was in jail at the time, having killed a bystander during a shootout. In Joshua's case, Dr. Smith recorded in the final autopsy report that Joshua's mother was married, but did not officially live with her husband so she could continue to collect welfare.

None of this information is at all relevant to the pathology. Although there is nothing wrong with forensic pathologists recording all the social history provided to them, they must screen out the irrelevant information and ensure that it plays no part in their consideration of the case. If Dr. Smith relied on this type of information, he should not have done so. None of the information set out above should have been included in a final autopsy report because it leaves the impression that it somehow played a part in Dr. Smith's thinking.

In Jenna's case, there is convincing evidence that Dr. Smith indeed relied on such irrelevant information. Around the time of the autopsy, he was given

information that Jenna's mother had left home several hours before Jenna's death, that she was expected to return home within the hour, but that she actually returned much later. Dr. Smith recorded the information in his rough notes of the case. Several years after the autopsy, he repeated this same information to an assessor for the College of Physicians and Surgeons of Ontario (CPSO) and said that the real issue in the case was that Jenna's mother had not returned home until eight or nine hours later.

At the Inquiry, Dr. Smith explained that he considered this information important because it had to do with a critical issue that he might assist in answering – whether Jenna's mother had exclusive opportunity to cause Jenna's injuries. I do not accept that explanation. In this case, the pathologist's job was to determine the timing of the injuries based on the pathology evidence. Whether or not Jenna's mother came home later than she predicted was entirely irrelevant to that task. Dr. Smith should not have considered this aspect of the history in his analysis of the case, much less elevated its status to that of the real issue in the case. It allows the impression that Dr. Smith's opinion was reached in part because of his view that Jenna's mother was irresponsible.

Recording Information

It is difficult to overemphasize the importance of written documentation to the discipline of forensic pathology. The need for a written record permeates every stage of the process. Pathologists must make notes about all the information they receive verbally. They must make notes of what they do, observe, and collect during the post-mortem examination. They must retain these notes and any other material from the autopsy in an organized fashion and a secure place. Their opinions should be committed to writing and not just provided verbally. These basic principles of recording information support the independent reviewability of the work by other pathologists – something that is vital to quality assurance and essential to the criminal justice system. These principles must be seen as necessary to the work of a competent forensic pathologist.

Taking Notes of Information Provided Verbally

Some of the information provided to the pathologist before the post-mortem examination is already documented in some form: the coroner's warrant, medical records, and pictures of the scene. However, in the 1980s and 1990s, police officers and coroners passed on a substantial amount of information to pathologists verbally, either in person at the post-mortem examination or by telephone. At that time, many pathologists did not take extensive notes of these communications.

The forensic pathology experts who appeared at the Inquiry emphasized that pathologists must document the information they receive. This practice ensures that the pathologist has an accurate record of the evidence base, which can change as the death investigation progresses. Maintaining a record of the information as it is received helps a potential reviewer to understand what information pathologists had at all times during their involvement in the case, including at the time they arrived at the diagnosis. Failing to do so impairs a reviewer's ability to assess the basis for the pathologist's conclusions.

Like many pathologists, Dr. Smith did not consistently document the information he received verbally from the police and coroners. Although he sometimes took notes, in the majority of cases we examined he did not.

In Sharon's case, the notes written by the forensic identification officer reveal that two days after the autopsy, on June 17, 1997, he telephoned Dr. Smith regarding the markings on Sharon's back. Dr. Smith told the officer that they were not made by a "domestic or wild animal in any way." Dr. Smith testified at the preliminary hearing of Sharon's mother in April 1998 that he did not keep notes of his conversations with police officers or anyone else. Because Dr. Smith did not keep notes of the conversation, it is unclear precisely what the officer told him about the possibility of a domestic or wild animal's involvement. Moreover, by April 1998, when he was questioned on this conversation in court, he no longer had any recollection of what he had been told. It was, therefore, impossible to determine what Dr. Smith knew about the possibility of a dog attack and when he knew it.

In light of the way many pathologists practised in the 1980s and 1990s, I cannot single Dr. Smith out for criticism for failing to document communications with the coroner or the police. However, his failure to keep notes represents a systemic failing. A lack of notes creates significant difficulties for anyone trying to review the case, and for any pathologist trying to reconstruct later what was known and when it was known.

Recording the Pathologist's Actions

Pathologists must record what they did, saw, and collected during the post-mortem examination at the time these events took place. They can then refer to these notes when analyzing the evidence, writing the final report, or preparing to testify in court. Moreover, this record allows anyone reviewing the case to understand what procedures the pathologist employed, in what order, and what samples or exhibits were collected during the autopsy.

In the 1980s and 1990s, no formal systems were in place to ensure that pathologists kept contemporaneous records of their post-mortem examinations. With some exceptions, the OCCO left note-taking to the pathologist's

personal practices. In a commendable but seemingly unique exception to this practice, the Hamilton Regional Forensic Pathology Unit used a specific form to document all samples and exhibits taken at every post-mortem examination performed at the unit.

According to the forensic pathology experts I heard from, the method used by the pathologist – dictation, handwritten notes, or typed notes – is not important. What matters is that pathologists create and maintain a complete, contemporaneous record of their post-mortem examination, including observations of any pathology findings, the procedures used, and any samples or evidence collected.

Dr. Smith had no systematic way of recording what he did, observed, or collected during the post-mortem examination. He took notes in a variety of ways – sometimes on a laptop, sometimes on a piece of paper, and sometimes by dictation. He failed to keep an adequate record of the post-mortem examination in several of the cases examined by the Commission. His notes typically contained his observations but not the procedures followed or the samples taken. He testified that he took notes from the perspective of a pediatric pathologist. He focused on finding the correct diagnosis and completing the report of post-mortem examination, which did not require a list of the procedures performed or the samples collected.

For example, in Tiffani's case, Dr. Smith performed a second post-mortem examination after an exhumation, but it was unclear from the records who examined the microscopic slides and when – the pathologist who performed the first autopsy, or Dr. Smith who conducted the second. Similarly, in Sharon's case, where the autopsy took place over two days, Dr. Smith failed to document whether certain events happened on the first day or the second day. Moreover, before resuming the autopsy on the second day, Dr. Smith looked at photographs of the scene, and a pair of scissors seized from the scene, but did not record that he had viewed them. Given the lack of direction from the OCCO, I do not fault Dr. Smith for his failure in this respect. However, failing to keep a record of the steps taken at the initial or any subsequent post-mortem examination may leave doubt about what the pathologist did and hamper another pathologist's ability to review the case. Reviewers must know exactly what the initial pathologist did or failed to do at the post-mortem examination in order to review the case properly, and the pathologist must be able to tell the criminal justice system with certainty what was done (or not done) in reaching the opinion.

In other cases, Dr. Smith failed to document properly the samples he took and the exhibits he collected during the post-mortem examination. In Amber's case and Kasandra's case, the source of certain histology blocks was unclear. In Jenna's case, Dr. Smith collected a hair from Jenna's genital region but did not

record that he had done so. This omission left the police and the defence not knowing whether there was a hair and, if so, what happened to it. In fact, throughout the initial investigation into Jenna's death and the criminal proceedings against Jenna's mother, no one from the death investigation team was aware that Dr. Smith had collected the hair. It was not until several years later, after the Crown withdrew the charges against Jenna's mother, that the police discovered the existence and whereabouts of this piece of evidence. At the Inquiry, Dr. Smith acknowledged that his conduct in this respect was a mistake. He should have documented that he had collected the hair and ensured that investigators were aware of its existence.

In my view, Dr. Smith ought to have known of the importance of recording properly the samples and exhibits he collected. It is just common sense. Beyond that, his failure to do so represents another systemic failing. Particularly in criminally suspicious cases, failure to document the samples properly may not only hinder the reviewability of the case but also interfere with the ongoing death investigation and impair subsequent criminal proceedings.

Preserving Autopsy Records

Once pathologists have recorded both the information received verbally and what they did, observed, and collected during the post-mortem examination, these notes and materials must be carefully preserved for future use in the criminal justice system or for independent review. The duty is the same whether the pathologist performs the post-mortem examination or merely provides a consultation report.

Paper documents should be filed in clearly labelled files in a secure location. Tissue is stored in one of three ways: first, it may be fixed in liquid formalin; second, some fixed tissue is dehydrated and set in paraffin wax, which is known as a tissue block; and third, a section of the tissue block may be sliced and mounted onto a microscopic slide. The forensic pathologist is responsible for ensuring that the samples are properly preserved and that the wet tissue, blocks, and slides are labelled, indexed, and stored in a secure location.

In the 1980s and 1990s, the OCCO did not have any formal policies or procedures in place that addressed how pathologists should store materials from autopsies performed under coroner's warrant. Individual pathologists and hospitals had their own practices. Pathologists usually kept notes and draft reports in a working file on the case, typically in a filing cabinet in their office. Specimens taken from the post-mortem examination, such as wet tissues, tissue blocks, and microscopic slides, were usually kept in hospital storage facilities. At SickKids, for example, policies were in place in the 1990s requiring specimens to be stored in

specific locations within the hospital and signed out when removed. In addition, SickKids policy required pathologists receiving materials from outside the hospital for review to record that fact and assign a unique SickKids identification number to the materials – a process known as accessioning. After accessioning, it was common for the pathologists to keep case materials in their offices until they completed the consultation report, when the material would be returned to the referring institution.

In some of the cases examined by the Inquiry, Dr. Smith made serious errors in the preservation of autopsy materials. He lost his notes for years at a time. In some cases, he actually lost evidence, including X-rays, tissue blocks, slides, and a cast of a child's skull.

In Jenna's case, Dr. Smith failed to take proper care of the notes he made before and during the autopsy. During and after his involvement in the initial criminal proceedings, he indicated on at least three occasions that he had no such notes, including at the preliminary hearing in October 1998. However, in October 2004, his counsel provided seven pages of Dr. Smith's handwritten notes to the OCCO. At the Inquiry, Dr. Smith testified that he could not recall how the notes were discovered.

Dr. Smith's conduct in this aspect of Jenna's case is troubling. Pathologists are responsible for keeping their notes in a secure place and producing them when asked to do so by the criminal justice system. Dr. Smith did not. Crown or defence counsel, or another pathologist reviewing the case, all have a right to review those contemporaneous notes. It is equally problematic that Dr. Smith was unable to explain how his notes were eventually discovered. It appears that he did not know they even existed, let alone where they were. In Joshua's case and Sharon's case, Dr. Smith lost physical evidence during the criminal proceedings. In Joshua's case, Dr. Smith was asked to provide to the defence the microscopic slides and X-rays relating to the case before the preliminary hearing. Dr. Smith failed to deliver the material requested. In fact, he lost the slides for some time, although he eventually found them. The X-rays, however, were lost and never found. Similarly, in Sharon's case, Dr. Smith lost two pieces of evidence: a cast of Sharon's skull and a set of X-rays taken at the initial post-mortem examination. Neither has been found. Whether or not the loss of this evidence affected the outcome in either case, Dr. Smith's conduct is inexcusable. Evidence must be properly preserved.

Finally, in Valin's case, Dr. Smith said he was unable to find tissue blocks and slides that had been sent to him for review. Almost 18 months after he was initially requested to look for the materials, a diligent administrative assistant at SickKids located some of the slides in Dr. Smith's office. She found the rest of the materials about five months later.

Dr. Smith's failure to maintain proper care and control of the autopsy materials in Valin's case had dire consequences. Dr. Bhubendra Rasaiah performed the post-mortem examination on Valin's body on June 27, 1993. In August 1993, Dr. Rasaiah consulted a SCAN physician at SickKids and Dr. Smith. The two SickKids doctors authored a joint consultation report. In June 1994, Dr. Rasaiah sent the tissue blocks and slides to Dr. Smith so he could prepare to testify in September. At the trial, Dr. Smith expressed the opinion that Valin had died of manual strangulation and that she was the victim of a recent sexual assault. Mr. Mullins-Johnson was convicted of first-degree murder and sentenced to life in prison.

In February 2003, the Association in Defence of the Wrongly Convicted (AIDWYC) requested that the Ministry of the Attorney General provide it with the tissue blocks and slides so that another pathologist could review them. In May 2003, the police contacted Dr. Rasaiah about the autopsy materials. Dr. Rasaiah determined that Dr. Smith had not returned them. In June 2003, Dr. Rasaiah phoned Dr. Smith about the missing slides and tissue blocks. Dr. Smith told Dr. Rasaiah that he would look for the materials. Dr. Smith did not get back to Dr. Rasaiah and failed to return a follow-up call.

In October 2003, Crown counsel Philip Downes wrote to Dr. Smith and asked him about the material. Dr. Smith did not reply to the letter. Mr. Downes followed up by telephone in December. Dr. Smith informed him that he had asked his assistant to search the archives for the material, but that the search had proven fruitless. Dr. Smith indicated that he did not believe he still had the samples, but would take another look when his assistant returned that week. Mr. Downes asked Dr. Smith to confirm in writing his position on the whereabouts of the material, and Dr. Smith agreed. However, Dr. Smith did not get back to Mr. Downes and ignored two follow-up letters, one sent by registered mail.

Finally, in November 2004, Mr. Downes sought the assistance of the OCCO in his search for the materials. Shortly after receiving this request, Deputy Chief Coroner Dr. James Cairns and Dorothy Zwolakowski, the executive officer of investigations at the OCCO, met Dr. Smith at SickKids to discuss the missing slides and blocks. During the meeting, Dr. Smith told Dr. Cairns, first, that he did not remember the case and then, after Dr. Cairns reminded him of the case, that he had sent the slides back to Dr. Rasaiah in Sault Ste. Marie. Dr. Smith indicated that he had personally gone to the post office and returned the slides via registered mail. He said he did not have the file on the case, nor did he have the consultation report that he had prepared. Dr. Cairns asked Maxine Johnson, a senior administrative assistant at SickKids, and Ms. Zwolakowski to search Dr. Smith's office for the materials. The same day, a Friday, they located Dr. Smith's working file on the case in his filing cabinet and several slides from the case in his office.

The following Monday, Ms. Johnson found 20 additional slides on a shelf in Dr. Smith's office. At the Inquiry, Ms. Johnson testified that she found the slides quickly and easily that Monday morning, in a place she had already searched on the previous Friday. She therefore inferred that the slides had been placed there over the weekend. Despite the discovery of the additional slides, all the tissue blocks were still missing.

Dr. Pollanen then reviewed the slides to index them for the Crown and discovered Dr. Smith's diagnostic errors. In January 2005, he reported that he had found no evidence of sexual abuse and concluded that the cause of Valin's death was unascertained or undetermined.

Several months later, in May 2005, Ms. Johnson found an additional 10 slides and all of the tissue blocks on a shelf in Dr. Smith's office. Again, Ms. Johnson found the additional materials in locations she had previously searched. She inferred that the materials had been placed there sometime between the end of November 2004 and May 2005. At the Inquiry, Dr. Smith could not explain how this loss and later recovery could have happened.

Events unfolded quickly after the discovery of the tissue blocks and slides. On receipt of the additional materials, Dr. Pollanen issued a supplementary report in late May 2005. As in his first report, he found the cause of death to be undetermined. In September 2005, Mr. Mullins-Johnson filed an application for ministerial review of his conviction pursuant to Part XXI.1 of the *Criminal Code*. Later that month, he was granted bail pending his application. Ultimately, the federal minister of justice granted his application and referred the case to the Court of Appeal for Ontario, which acquitted Mr. Mullins-Johnson in October 2007.

Dr. Smith's handling of Valin's case reveals a troubling lack of competence and professionalism. He failed to store the slides and tissue blocks in a way that would permit them to be located easily. He did not accession the case to the SickKids record system. Almost 18 months elapsed from the initial request for the materials to their initial discovery (and 23 months passed before all of them were located). Mr. Mullins-Johnson spent those months in jail. Pathologists are responsible for properly preserving the autopsy materials in their cases and providing them when requested. Dr. Smith failed to do so.

Dr. Smith testified that he had searched his office for the autopsy materials and his file, to no avail. However, Ms. Johnson found the file, the tissue blocks, and the slides in Dr. Smith's office. Indeed, the file was in his filing cabinet. Dr. Smith testified at the Inquiry that he had searched the filing cabinets in his office but did not see the file. Equally troubling is Ms. Johnson's testimony, which I accept, that she ultimately found the materials in places that she had previously

searched unsuccessfully. I find Dr. Smith's lack of professionalism in this aspect of Valin's case to be disturbing.

Dr. Smith expressed regret at the Inquiry about his conduct in the case. He acknowledged that his office was disorganized and, as a result, that important materials could not readily be retrieved from his office. He also admitted that he did not keep a log of the materials he received or sent out. Dr. Smith's explanation was that he did not know any better. He said that, although he understood that continuity of evidence was a basic principle of the criminal justice system, he did not fully understand its implications.

I do not accept Dr. Smith's explanation. Someone with the expert witness experience he had by the time he became involved in Valin's case could not have been as unaware as he claims of the importance of this evidence in a serious criminal case. His behaviour here is an example of carelessness, not ignorance.

Other pathologists, many of whom also lacked formal forensic training, recognized the importance of preserving the integrity and continuity of the evidence, and of maintaining an accurate record of specimens sent and received. For instance, in May 2003, nine years after his involvement in the case, Dr. Rasaiah was able to refer to his own record and tell the police of the exact dates on which he sent the autopsy materials to the other pathologists involved in the case. Although Dr. Smith claims that he did not intend to hinder a review of the case, his conduct certainly had that effect.

Autopsy Practice

Every post-mortem examination consists of three steps: an external examination, an internal examination, and the performance of ancillary tests. Each step is distinct, but each depends and builds on the earlier steps. Each step must be completed before the pathologist has sufficient evidence on which to base an opinion. The various elements of the post-mortem examination are described in Chapter 4, Investigation of Suspicious Pediatric Deaths.

Until the mid-1990s, there were no standardized procedures in Ontario for the performance of pediatric forensic autopsies. On April 10, 1995, however, the OCCO distributed Memorandum 631, attaching the Protocol for the Investigation of Sudden and Unexpected Deaths of Children under 2 Years of Age (the 1995 Infant Death Investigation Protocol), to all coroners, pathologists, and chiefs of police in Ontario. For the first time, the Protocol and its accompanying appendices gave Ontario pathologists a standardized procedure to follow in all cases involving children under the age of two. Dr. Smith wrote Appendix D to the Protocol, which set out a standard approach for pathologists to follow.

An inadequate post-mortem examination can create at least two significant problems. First, because the forensic pathologist relies on the findings made at autopsy to arrive at his or her opinion in the case, a failure to conduct a proper post-mortem examination can lead to an incorrect diagnosis. Since each step feeds into the next, errors in one step may well contribute to errors in another. Second, inadequate dissections, sampling, and testing all prevent a thorough review of the pathologist's findings and opinion. Since the condition of the body changes significantly after the post-mortem examination, the pathologist must ensure that appropriate dissections, sampling, and testing are conducted at the autopsy. Moreover, they must be conducted in a way that preserves the ability of a reviewer to understand the initial pathologist's opinion and to assess the case. Both problems are exemplified in the cases we examined. The first is most evident in two cases: Sharon's case and Jenna's case. Significantly, the 1995 Infant Death Investigation Protocol, which was in place by the time Dr. Smith performed the autopsies in those cases, was of little assistance: Sharon was not under two years of age, and the memorandum did not speak to a critical aspect of Jenna's autopsy – the sexual assault examination.

Sharon's body had multiple penetrating injuries when the police brought her to Dr. Smith for autopsy. The forensic pathology experts found that Dr. Smith's post-mortem examination was inadequate in a number of respects. First, during the examination of Sharon's scalp injury, Dr. Smith did not shave the hair to conduct a detailed assessment of the wound margins. According to the experts, shaving the hair is a standard procedure when there are scalp injuries because hair hides the details of the wound. Second, Dr. Smith did not take swabs of the wounds to test for saliva. Although the experts acknowledged that swabbing is not routinely done on wounds and that Sharon's injuries were so clearly bite marks that they might not have thought it necessary, swabbing the wounds could have assisted Dr. Smith in determining whether Sharon's wounds were in fact stab wounds or if they were bite marks, as alleged by the defence in the case. Third, during the internal examination, Dr. Smith did not dissect the spinal canal and cord as he should have, given that the injuries went down to the spine; nor did he measure carefully the depth of key injuries, such as a penetrating wound in the neck. An accurate and precise measurement of the depth of that wound would have been significant evidence to help determine if a dog could have caused Sharon's injuries. Fourth, during the ancillary testing phase of the autopsy, Dr. Smith did not examine the scalp adequately under the microscope. At the Inquiry, he admitted that, as a result, the examination did not yield as much information as it could have. Ultimately, Dr. Smith wrongly concluded that Sharon had died of multiple stab wounds, not dog bites.

In Jenna's case, Dr. Smith also made serious errors during the post-mortem examination. Although he observed a possible bite mark on Jenna's knee, he did not swab the wound for saliva. A swab could have assisted in determining if the mark was actually a bite mark, and, if it was, the swab could have been analyzed for DNA. Dr. Smith also failed to perform an adequate sexual assault examination. Although he appears to have considered the possibility of sexual assault during his external examination of Jenna's body, he did not complete the examination. He did not use a sexual assault evidence kit; he did not take swabs; and he did not dissect Jenna's genitalia or anus to perform a histology examination of those areas. Finally, he took a hair from Jenna's genital region but failed to submit it to the Centre of Forensic Sciences for testing.

Ultimately, Dr. Smith concluded that there was no evidence of sexual abuse in the case. Several years later, however, Jenna's babysitter confessed to the police that he had sexually assaulted Jenna. Dr. Smith's errors amounted to a lost opportunity to collect evidence that might have identified Jenna's assailant or provided evidence of a sexual assault. Of importance is the fact that, although the 1995 Infant Death Investigation Protocol and its appendices were intended to ensure that pathologists performed complete post-mortem examinations, they failed to speak to a central aspect of Jenna's autopsy. They made no mention of when and how to conduct a complete sexual assault examination of a child, and the OCCO did not have any other protocol or guideline in place to deal with the issue.

In several other cases involving children under two years of age, the expert reviewers found failures on the part of other pathologists to undertake necessary ancillary investigations. There were cases in which ancillary investigations involving microbiology and biochemistry testing and metabolic studies were not done. Although such investigations were not specifically called for by the 1995 Infant Death Investigation Protocol, they were considered routine by the mid- to late 1990s. These investigations would have been significant to rule out the possibility of natural causes of death. The failure to perform a thorough and complete post-mortem examination was thus not limited to Dr. Smith.

In one case involving the death of a child under the age of two, the expert reviewers found that the pathologist who performed the post-mortem examination in August 1996 should have undertaken additional investigations, including microbiology, toxicology, and more extensive histology. The 1995 Infant Death Investigation Protocol, which was in place by 1996, dealt specifically with toxicology and histology. Pathologists were told to order toxicology tests in every case involving the sudden unexpected death of a child under the age of two. Appendix D to that Protocol also recommended that specific tissues be removed for microscopic examination. The pathologist's actions were thus inconsistent with the

OCCO's policy at the time. Moreover, microbiology, though not a part of the protocol, was by that time routinely ordered by pathologists. The pathologist's failure to order microbiology was therefore also a mistake even by the standards of the day.

Unfortunately, the 1995 Infant Death Investigation Protocol did not list the other ancillary tests, beyond toxicology and histology, that needed to be performed in cases involving the death of a child. Although biochemistry and microbiology tests were routinely conducted by 1995 when the OCCO developed the Protocol, they were not specifically included. Had the OCCO included such investigations in the Protocol or had Dr. Smith provided for them in Appendix D, pathologists across the province might have come closer to performing all requisite procedures and tests in all pediatric forensic cases.

Despite the advances it offered in the detection of child abuse, these examples demonstrate that the 1995 Infant Death Investigation Protocol covered too few pediatric deaths, provided for too few procedures and tests, and sometimes was not carefully followed. Partly as a result, inadequate autopsies were performed in several of the cases examined at the Inquiry. Significant opportunities to identify all of the existing pathology evidence or to help identify a possible perpetrator were lost.

Handling of Exhibits for Testing

During the autopsy, the forensic pathologist collects tissues and fluids and may collect other physical evidence, such as fibres and hairs. This material forms the basis for ancillary tests performed by either the forensic pathologist or a forensic testing laboratory – the Northern Forensic Laboratory for cases in Northern Ontario or the Centre of Forensic Sciences (CFS) for all other parts of the province.

It is important that the pathologist handle this material properly because it may significantly affect the opinion on cause of death and may also play an important part in any criminal trial. Toxicology can indicate the presence of alcohol or other toxins, for instance, and DNA analysis can help to identify who may have caused the deceased's injuries. Because forensic pathologists understand the value of such evidence, they are primarily responsible for determining if evidence ought to be collected from the body and tested. Of course, the police and coroner can also request that certain evidence be collected for testing. Either the pathologist or the investigating police force is charged with sending the samples to the laboratory for the ancillary tests.

In the 1980s and 1990s, the OCCO had no formal policies or procedures relating to the collection and submission of exhibits for testing. Pathologists generally developed their own procedures, which were designed to protect the integrity and

continuity of the evidence. After the evidence was collected, the pathologist usually assumed responsibility for the samples taken from within the body, such as bodily fluids, and the police were responsible for other types of evidence, such as clothing and fibres found on the body.

The importance of establishing proper procedures and following them is graphically illustrated by the serious error Dr. Smith made in Jenna's case. During the post-mortem examination, in January 1997, Dr. Smith identified a hair located in Jenna's genital area. He collected the hair, placed it in an envelope, labelled it "hair from pubic area," and applied a sequential seal to the evidence. However, he did not submit it to the CFS for analysis. Eventually, in 2001, four years after the post-mortem examination, the police learned that Dr. Smith had collected and kept the hair. The police obtained the hair and eventually submitted it for analysis to both the CFS and the Federal Bureau of Investigation (FBI) laboratory in Washington, DC. The CFS reported that it was not able to do a DNA analysis because the hair did not have a root. In addition, in part because of the length of time between Jenna's autopsy (when the hair was first collected) and the forensic analysis, microscopic comparison was of little or no value. The FBI laboratory was, however, able to rule out both Jenna's mother and her babysitter as the source of the hair based on a mitochondrial DNA analysis.

At the Inquiry, Dr. Smith gave varying accounts to explain his failure to submit the hair for testing immediately after the post-mortem examination. He testified that, at the time of the post-mortem examination, the police were not interested in the hair because they believed it to be a contaminant, which was left behind during resuscitation efforts. He provided a similar account to several other people in the early 2000s and added that the attending officer actively refused to take it. Dr. Smith also testified that he personally believed that the hair was a contaminant because contaminant hairs are often found on a child's body; the location of the hair indicated to him that it was left behind during or after resuscitation; the hair appeared to be a trunk or head hair, not a pubic hair; and, finally, anything that might have been in the pelvic region before the commencement of resuscitation would have been altered or displaced by the end of it. In addition, Dr. Smith testified that, by the completion of the autopsy, he believed that there were no other findings that suggested that Jenna had been sexually assaulted. Therefore, he said, he had no reason to submit the hair for analysis.

I do not accept Dr. Smith's assertion that the police refused to take the hair. Constable Scott Kirkland of the Peterborough Lakefield Community Police Service was the only police officer present at the post-mortem examination. He testified at the Inquiry that he did not know that the hair existed, and he certainly

did not refuse to take it. He explained that he would never make an independent decision not to submit a sample for analysis. As he put it, "it would be against all my training, all my experience, my personal ethics and it wouldn't even make any sense." I accept that. No forensic identification officer would refuse to take a hair that a pathologist seized from a dead child's genital area, where that child's body had suffered significant physical trauma.

Nor can I accept Dr. Smith's explanation that he believed the hair to be a contaminant and not relevant. The reason to submit the hair for testing is to answer the very question Dr. Smith assumed away – whether the hair was indeed relevant. It was not for Dr. Smith to answer that question based solely on a visual inspection and without the benefit of ancillary testing. At the time of the autopsy, Dr. Smith knew that Jenna was in the company of either her mother or a male babysitter when her injuries occurred. The identification of the owner of the hair could easily have been relevant to the investigation into Jenna's death. That is so regardless of whether the hair was a trunk or a pubic hair, whether it could have been altered or displaced during resuscitation, and whether there was other evidence of sexual abuse. If Dr. Smith had truly believed that the hair was a contaminant, I cannot understand why he would have seized it, placed it in an envelope, labelled the envelope, applied a seal, and offered it to the forensic identification officer.

Dr. Smith first offered his tortured explanation when Dr. Cairns confronted him about it. Dr. Cairns found it simply not credible. I agree. Whatever the explanation, and regardless of the fact that the hair proved to be unhelpful, Dr. Smith's failure to record and send this important exhibit for forensic testing represents a serious systemic failing in the practice of pediatric forensic pathology.

Even without formal policies or systems in place in the 1980s and 1990s with respect to the seizure and collection of exhibits, I find Dr. Smith's conduct in this case inexcusable. There is no evidence to suggest that other pathologists performing coroner's autopsies at the time made such grave mistakes. Instead, the evidence suggests the opposite. Most pathologists developed their own systems, understanding the importance of maintaining continuity and ensuring that such evidence is not compromised. Although far short of the protection that a uniform policy provides, leaving it to individual pathologists appears to have worked to some extent, but, given this example, obviously did not work well enough.

The Pathology Opinion

After completing the post-mortem examination, the forensic pathologist's task is to arrive at an opinion on the cause of death and any other issues relevant

to the death investigation that the pathology can assist in resolving. The latter can include, for instance, the timing of fatal injuries or the way in which injuries occurred.

In the course of our systemic review, the Inquiry heard detailed evidence from the expert reviewers, all renowned forensic pathologists, about the serious diagnostic errors Dr. Smith made in the 18 cases we examined in detail.

For several reasons, it is important that I report on these misdiagnoses. First, these errors and their tragic outcomes were in large measure responsible for the dramatic loss of public confidence in pediatric forensic pathology, and thus for the creation of this Inquiry. It is important that I report on the facts underlying these misdiagnoses. Second, understanding these errors in the context of how they came about is essential to determine what systemic changes must occur if similar mistakes are to be avoided in future.

Dr. Smith made a number of different diagnostic mistakes. I have grouped them into several categories.

Interpreting Artefacts

An artefact, in relation to the post-mortem examination, is a sign or finding that imitates pathology, disease, or injury occurring in life.[3] Artefacts can arise from treatment, resuscitation, or post-mortem phenomena. Aside from treatment or resuscitation, they are typically caused in one of two ways. They can occur naturally. For instance, gravity and the position of the body at death can cause blood to accumulate in certain areas of the body. This accumulation can appear indistinguishable from bruising, which by definition would have occurred before death. Similarly, a child's anus can relax and widen after death, which can be misinterpreted as evidence of a sexual assault. In addition, forensic pathologists can create artefacts when they dissect tissues at the post-mortem examination. For example, blood can leak out during dissection, which leaves the tissue appearing exactly as if there had been a hemorrhage.

Because post-mortem artefacts can appear at every autopsy, the pathologist must consider them as a possibility in every case. Recognizing a certain feature, whether it appears to be a bruise, hemorrhage, or some other kind of injury, is insufficient. If the body was found in a certain position, the pathologist should question if certain apparent bruises were actually inflicted before death. If microscopic hemorrhages were found in certain tissues in the absence of any other

[3] Medical terms used in this Report are defined in the medical glossary at the front of this volume.

findings, the pathologist should consider the possibility that they were caused during dissection.

Forensic pathology is described as an interpretive science because of this need to interpret the signs and findings apparent at autopsy. The pathologist's interpretation of a particular feature often determines its significance. Artefacts are a good example of the risk arising from the interpretive nature of the science. Without proper training and knowledge of the various changes that occur in the body after death, the danger of assigning significance to an insignificant finding is very real.

Unfortunately, the leading forensic pathology textbooks have historically contained relatively little information about post-mortem artefacts. The phenomenon has yet to be the subject of detailed research. As with other areas of forensic pathology, this body of knowledge has grown over time, and, in the 1980s and 1990s, the level of research on certain post-mortem changes was not as advanced as it is today. For example, although forensic pathologists in the 1990s were aware that dilation of the anus can occur after death, the definitive study on the issue, which confirmed and revealed the potential extent of the dilation, was not available until 1996.

Establishing diagnostic criteria for certain findings could enable a pathologist to avoid some of the pitfalls in the science. Diagnostic criteria could help the pathologist to determine, for instance, if microscopic hemorrhages in the neck indicate neck compression or manual strangulation, or if certain findings in the anus confirm penetrating anal trauma. Without diagnostic criteria, it can be difficult for a pathologist to determine what qualifies as sufficient evidence to make a diagnosis and what is an artefact. Unfortunately, in the 1990s, there were no universally accepted diagnostic criteria for either neck compression or anal trauma. This deficiency made the interpretation of findings associated with these diagnoses all the more difficult, and the risk posed by artefacts all the greater.

Dr. Smith misinterpreted both natural and pathologist-made post-mortem artefacts in several of the cases examined by the Commission. In some cases, he was not alone. Other pathologists made the same or similar mistakes. Three examples are provided by the cases of Valin, Nicholas, and Joshua.

In Valin's case, Dr. Smith made significant errors in his interpretation of the post-mortem findings. The Crown theory was that Valin was the victim of chronic sexual abuse and died during the course of a sexual assault by Mr. Mullins-Johnson. Two of the key pathology issues at trial were the cause of death and whether there was evidence of sexual assault.

Dr. Rasaiah conducted the autopsy. Upon a review of the autopsy materials, Dr. Smith found: petechiae and small bruises to the face and upper chest; bruising

to the inner thighs and anal area; dilation of the anus; and a laceration and fissures in the anus. Based on these findings, Dr. Smith testified at Mr. Mullins-Johnson's trial that the cause of death was asphyxia, possibly due to manual strangulation, and that there was evidence of recent sexual assault. Other pathologists, including those retained by defence counsel, agreed with him to varying degrees. As it turned out, however, the observations of laceration and fissures in the anus were properly attributable to the dissection of tissue or its preparation for microscopic work. The dilation of the anus was a natural post-mortem occurrence. Much of what was described as bruising represented artefacts relating to lividity. And, facial petechiae may also have been explained by lividity, particularly in light of the fact that Valin's body was found face down. In other words, the findings were attributable to insignificant artefact. The experts who later examined the case concluded that the cause of Valin's death was undetermined and that there was no evidence of sexual abuse.

In Nicholas' case, there was a first autopsy, and an exhumation and second autopsy 18 months after death. At the second post-mortem examination, Dr. Smith found some discolouration in the skull over the right parietal bone and along the sutures, which he suggested was consistent with blunt force injury. He concluded that the cause of death was cerebral edema, consistent with blunt force injury.

The expert reviewers who later examined Nicholas' case disagreed. Dr. Jack Crane, state pathologist for Northern Ireland, testified that this discolouration was a common finding visible whenever a body has been buried and subsequently exhumed. It was an artefact of no significance and did not indicate the presence of injury. In addition, the pathologist who performed the first autopsy found no evidence of scalp bruising that would suggest a blunt force injury.

Finally, in Joshua's case, Dr. Smith performed the post-mortem examination and found a microscopic hemorrhage in the connective tissues of Joshua's neck. He concluded that the cause of death was asphyxia, and testified at the preliminary hearing in the case that the hemorrhage was a "worrying" finding, suggesting that Joshua was suffocated. That diagnosis was wrong. The experts who examined the microscopic slides determined that the hemorrhage was likely caused during dissection at the autopsy. It likely was a post-mortem artefact and was therefore unrelated to Joshua's cause of death. Dr. Smith acknowledged his mistake at the Inquiry and explained that his error was in overestimating his own dissection skills.

In all three cases, Dr. Smith made misdiagnoses based on post-mortem artefacts. While this subject remains a challenge for forensic pathology, these cases exemplify the risks of inadequate forensic pathology training.

Diagnosing Asphyxia

Asphyxia can be a confusing term if it is used to describe a cause of death. Experts question whether, when, and how the term should be used. There are two problems associated with diagnosing asphyxia as the cause of death. First, there is a pure issue of terminology. At the Inquiry, the expert reviewers opined that asphyxia is not really a cause of death. At best, it describes a mode or mechanism by which a person has died – a lack of oxygen. The problem is that asphyxia fails to describe the cause of the lack of oxygen, and therefore is a markedly ambiguous diagnosis. This ambiguity is compounded further by the fact that different pathologists use the term in different ways. Some may use it to mean mechanical asphyxia that may be accidental. Others may mean that another person caused the lack of oxygen deliberately. Without some indication of how a particular pathologist uses the term in a particular case, it can easily be misunderstood. However, Ontario pathologists in the 1980s and 1990s often diagnosed "asphyxia" alone as the cause of death. Dr. Smith certainly did, as did other pathologists performing coroner's autopsies at the time.

Second, there is a problem with the basis on which asphyxia is diagnosed. Diagnostic criteria that were commonly used for establishing asphyxia – petechial hemorrhages in the thoracic viscera, congestion and edema of the lungs, cyanosis of the fingernails, and cerebral edema – are in fact non-specific findings. In other words, these findings can appear on a body for a variety of reasons, including, but in no way limited to, asphyxia. They are meaningless without more evidence and cannot properly be said to be diagnostic of asphyxia.

As early as 1974, forensic pathology textbooks were referring to those criteria as "obsolete," in recognition of the fact that they were non-specific and therefore non-diagnostic. As a result, in the 1980s and 1990s, forensic pathologists should have been aware that certain findings, such as intrathoracic petechiae and congestion of the lungs, were non-specific and were insufficient on their own to substantiate the diagnosis of asphyxia.

Nonetheless, Dr. Smith determined that asphyxia was the cause of death in nine of the 18 cases the Commission examined in detail. In several others, he found that there was an asphyxial component to the death, but that it was not the cause of death. At the Inquiry, Dr. Smith testified that he was aware that certain findings, like petechial hemorrhages in the thoracic viscera, were non-specific and therefore not diagnostic of asphyxia. As a result, he said he diagnosed asphyxia only when he observed these non-specific findings at autopsy and when there was some other evidence to suggest an asphyxial mechanism of death. The latter took two forms: specific pathology findings, or a history suggesting asphyxia.

I have reviewed all nine cases and find that Dr. Smith adopted the approach he described in some cases, but not others. In some instances, he appeared to do exactly the opposite – he diagnosed asphyxia based solely on the presence of non-specific findings.

In Tiffani's case, Dr. Smith concluded that the cause of death was asphyxia. He added a "notanda" to the report of post-mortem examination that the etiology of the asphyxia could not be determined. In that case, however, the only evidence to support the diagnosis of asphyxia was Dr. Smith's observations of petechial hemorrhages to the pulmonary pleura, pulmonary congestion, and cerebral edema. All these findings were non-specific and therefore non-diagnostic. There was nothing in the pathological or the circumstantial evidence to support Dr. Smith's diagnosis. At the Inquiry, Dr. Smith acknowledged this point and explained that he included that notanda in recognition of the fact that his diagnosis was based entirely on non-specific findings. I cannot accept his explanation. That is not what the notanda states, and, more important, the diagnosis of asphyxia was not available to him on the basis of the findings. They were non-specific.

In Taylor's case, Dr. Smith did not find asphyxia to be the cause of death but determined that there was an "asphyxial component" to the death. As in Tiffani's case, however, Dr. Smith based this conclusion entirely on non-specific findings – petechial hemorrhages of the thymus and the pulmonary pleura. There was no other evidence to suggest that asphyxia played a part in Taylor's death. Contrary to Dr. Smith's assertion that he did not diagnose asphyxia based on non-specific findings alone, he did exactly that in Taylor's case.

Now I turn to Dr. Smith's explanation that he diagnosed asphyxia when he observed the host of non-specific findings and "something else" – specific pathology findings or circumstantial information. I consider Delaney's case and Katharina's case to be the clearest examples of Dr. Smith's reliance on that "something else."

In Delaney's case, the coroner advised Dr. Smith that Delaney had been left alone at night with his mother and his two-year-old cousin. When family members discovered Delaney's body the following morning, they found his mother sitting in the same room, covered in blood, clutching a piece of broken glass. The police informed Dr. Smith that Delaney's mother had confessed to putting her fingers down Delaney's throat three times until he stopped breathing.

In his August 1994 report of post-mortem examination, Dr. Smith listed "Asphyxia (digital airway obstruction)" as an abnormal finding. At the Inquiry, Dr. Smith explained that he arrived at his conclusion on the basis of three findings: first, intrathoracic petechiae; second, hemorrhage in the upper laryngeal region, the epiglottic region, and the lower neck region; and third, a history that Delaney's mother had placed her finger in Delaney's airway on three occasions.

He believed that this history served as a sufficient basis for the diagnosis, and that, given the overwhelming circumstantial evidence, other pathologists would have concluded the same.

The expert reviewers did not agree. The primary reviewer assigned to the case, Dr. Pekka Saukko, a certified forensic pathologist, found no pathology evidence to support the suggestion that the mechanism of death involved a digital airway obstruction. According to Dr. Saukko, the toxicology, radiology, and histology examinations did not reveal any specific or significant findings that could explain Delaney's death. Although the circumstances suggested homicide, there were no pathology findings to substantiate it or to exclude it. Therefore, Dr. Smith, as the pathologist, should have classified the cause of death as undetermined.

Dr. Smith repeated the same kind of reasoning in Katharina's case, where he concluded that the cause of death was "Asphyxia (filicidal)." Again the expert reviewers disagreed with the diagnosis and found insufficient pathology evidence to support an asphyxial cause of death. In both Delaney's case and Katharina's case, the expert reviewers added that, if Dr. Smith had diagnosed asphyxia based on the circumstantial, rather than the pathology, evidence, he should at least have said so in his report. Instead, his reports were silent on the issue.

Delaney's case and Katharina's case raise two questions. First, should Dr. Smith have refrained from using the term "asphyxia" altogether? If so, second, did he properly diagnose "asphyxia" in each case?

Given the evidence that, in the 1980s and 1990s, many pathologists in Ontario listed "asphyxia" on its own as a cause of death, I do not criticize Dr. Smith for doing the same. Nevertheless, the problems associated with the term are very real. At the Inquiry, Dr. Smith gave his definition of the term: "a state of compromised supply or utilization of oxygen by the tissues of the body." He acknowledged that this definition was broader than one other pathologists might use. The lack of uniformity and specificity of the term is problematic. If one pathologist uses it to describe one condition and another pathologist uses it to describe another very different condition, how are the family, police, coroner, Crown counsel, court, or other persons supposed to know the difference? In my view, Dr. Smith's use of the term "asphyxia" by itself had the potential to cause confusion.

With respect to the second question, whether Dr. Smith properly diagnosed asphyxia in Delaney's case and Katharina's case, I return to Dr. Smith's evidence at the Inquiry. Dr. Smith testified that he was aware that certain findings were non-specific but believed that they, in conjunction with specific autopsy findings or a history suggesting asphyxia, would form a sufficient basis for the diagnosis. I agree with one-half of that statement. If there are specific pathology findings suggesting that a child has died of asphyxia resulting from strangulation, for

instance, then a pathologist can properly arrive at a diagnosis of strangulation. That makes perfect sense; as a general rule, the pathologist can arrive at an opinion if the pathology substantiates it. In Delaney's case and Katharina's case, however, there was no basis in the pathology evidence for Dr. Smith's diagnoses.

I disagree with the second half of Dr. Smith's assertion – that non-specific findings coupled with a history suggesting asphyxia are enough to ground the diagnosis. History and non-specific findings alone are insufficient to substantiate any pathology diagnosis. The forensic pathologist's task is to arrive at an opinion on the cause of death based on the pathology. In the absence of any specific pathology findings suggesting that a child has died of some form of asphyxia – for instance, strangulation – non-specific pathology findings are meaningless. The pathologist cannot resort to the history and circumstantial information to give meaning to non-specific findings. Instead, the pathologist should simply state that the cause of death is undetermined, but that the circumstantial information might suggest a cause.

Dr. Smith raised two important points at the Inquiry, however. Both have to do with the culture of pediatric forensic pathology in Ontario in the 1990s. First, in the early and mid-1990s, when he wrote the report of post-mortem examination in Delaney's case and Katharina's case, pathologists in Ontario did not have a practice of stating "undetermined" or "unascertained" as the cause of death. Terms like "undetermined," "unascertained," or "no anatomical cause of death" did not become a part of pathologists' lexicons until the late 1990s. Indeed, the expert reviewers themselves testified that they now use the term "undetermined" more than they did in the past. Second, in the 1980s and 1990s in Ontario, post-mortem reports prepared for the coroner generally did not include any reference to the history or circumstantial information of which the pathologist was aware or relied on in arriving at a diagnosis.

However, that still does not justify Dr. Smith's opinions in many of the "asphyxia cases." I can understand that, because the practice was to provide a cause of death and not to conclude that the cause of death was undetermined, a pathologist performing coroner's autopsies in the 1980s and early 1990s might have been inclined to arrive at a definite diagnosis despite tenuous pathology evidence supporting that diagnosis. I cannot understand, however, how a pathologist could arrive at such a diagnosis when there is no pathology evidence to support it. As I have said, in many of the "asphyxia cases," Dr. Smith arrived at a diagnosis on the basis of non-specific findings alone or in combination with the circumstantial information. Where there was no pathology evidence to support Dr. Smith's conclusions, his diagnosis was wrong.

Moreover, as I discuss later, Dr. Smith should, in any event, have made his reasoning transparent. As a general rule, whenever the pathologist relies in part on

the history or other circumstantial information to reach a conclusion, he or she must say so. This transparency enables others reviewing the opinion to understand the basis for the original pathologist's conclusions. However, the main systemic failing exemplified by these cases is that the use of the term "asphyxia" as a cause of death is problematic. If used at all, it has to be explained. I return to this issue in Volume 3.

Diagnosing Head Injury

As I describe in Chapter 6, The Science and Culture of Forensic Pathology, the understanding of head injury in infants and children has evolved from the 1980s until today. In the 1980s, many believed that three pathology findings, known as the "triad," were diagnostic of shaken baby syndrome (SBS): subdural hemorrhage, retinal hemorrhage, and hypoxic-ischemic encephalopathy. Over time, however, the mainstream opinion shifted. Many began to question whether the triad was indeed diagnostic of SBS, and whether that constellation of findings could be seen in other conditions, including an accidental fall.

As the knowledge on SBS grew, knowledge about another aspect of pediatric head injury did as well. In the 1980s, the mainstream view was that low-level falls in the home could not cause serious injury or death in infants and children. However, as time went on, anecdotal evidence began to suggest that small falls about the home could indeed kill, although rarely.

Dr. Smith made serious errors in his diagnosis of head injury in several of the cases before me. In some instances, his diagnosis, which today would be considered unreasonable, was acceptable given the state of the knowledge at the time. In others, however, Dr. Smith's diagnosis was unreasonable then and would be unreasonable now.

In Amber's case, the reported history was that Amber had fallen down some carpeted stairs. At the autopsy performed in 1988, Dr. Smith discovered subdural hemorrhage, retinal hemorrhages, and hypoxic-ischemic encephalopathy. He concluded that Amber had died of SBS. Although in the 1980s the diagnosis of SBS was often made on the basis of the triad alone, this was not a triad case. The autopsy findings, which included a forehead bruise and a unilateral space-occupying subdural hemorrhage, provided clear pathology evidence of a blunt-impact – not a shaking – head injury.[4] Dr. Smith's failure to account for these

[4] The triad, as traditionally understood, involves bilateral subdural hemorrhage, not unilateral and space-occupying subdural hemorrhage as seen in Amber's case.

findings is discussed in more detail below. The point here is that, although the criteria for diagnosing SBS has evolved significantly from the 1980s to today, that evolution does not explain Dr. Smith's misdiagnosis in all of the head injury cases reviewed in detail by the Commission. In Amber's case, the pathology findings and the circumstantial evidence, which included a history of a fall, suggested an accidental fall. Dr. Smith wrongly diagnosed SBS on the basis of the triad, when, in fact, the triad, as traditionally understood, was not present at all.

In Tyrell's case, Tyrell's caregiver reported that he had been jumping on the couch, had slipped, and had fallen backwards, hitting his head on the marble coffee table or the tiled floor. Dr. Smith rightly concluded that Tyrell had died of a head injury. However, he failed to recognize that the pathology findings supported the position that Tyrell had suffered a *contre coup* brain injury, which is classically associated with a backward fall. When people hit the back of their head, they may suffer some bruising to the scalp or a skull fracture at the point of impact. However, the brain damage is commonly on the opposite side (*contre coup*), since the impact drives the brain forward within the skull. Tyrell had bruising to the back-left side of his scalp and a contusion to the right frontal lobe of his brain. Dr. Smith failed to correlate these pathology findings with a *contre coup* injury, and he concluded incorrectly that Tyrell could not have fallen in the manner suggested by his caregiver.

Moreover, in 2000, when he testified for the Crown at the preliminary hearing of Tyrell's caregiver, Dr. Smith wrongly asserted that the caregiver's explanation could not possibly account for Tyrell's injuries. He went as far as telling the court that the literature suggested that children do not die from a fall of less than three or four storeys. This was clearly wrong. By 2000, there had already been a number of anecdotal reports of small household falls causing serious injury and even death in infants and children. Dr. Smith's unequivocal opinion failed to reflect the state of the knowledge in 2000.

Accounting for Contradictory Evidence

As the expert reviewers made clear, forensic pathologists must consider all relevant evidence in reaching an opinion on the cause of death – both evidence that supports a particular diagnosis and evidence that contradicts it. The pathologist must begin each autopsy without preconception and follow the evidence to a conclusion. Some findings might suggest one diagnosis, and other findings might suggest another. In those circumstances, the pathologist's task is to take account of all the evidence and determine if a diagnosis can be made in the circumstances. Where contradictory evidence continues to exist, the pathologist must consider how and to what extent that evidence undercuts any proposed conclusion.

Although the presence of contradictory evidence may not necessarily preclude a diagnosis, it requires the pathologist to consider whether the diagnosis is the correct one. In all cases, pathologists must determine whether the contradictory evidence affects their opinion, and why. Failing to do so risks overlooking important information and ultimately misdiagnosing the case.

Similarly, pathologists must take into account any evidence learned subsequent to completing the report of post-mortem examination. They must consider the new evidence in light of the old and determine if and how it affects the opinion already given. If it does, they must be willing to change that opinion accordingly.

In several cases, Dr. Smith failed either to account for contradictory evidence in arriving at his opinion or to consider adjusting his opinion to take new information into account. These failures contributed to misdiagnoses with significant consequences.

In Amber's case, Dr. Smith concluded that a short fall down the stairs could not account for her fatal head injury. Instead, he concluded that Amber had been shaken to death. As described above, Dr. Smith made three key observations at the autopsy that supported his conclusion: subdural hemorrhage, retinal hemorrhage, and hypoxic-ischemic encephalopathy. Many believed in the late 1980s that this triad of findings was diagnostic of shaken baby syndrome. There was, however, also evidence that was inconsistent with the diagnosis of shaken baby syndrome.

At the post-mortem examination, Dr. Smith observed several bruises to Amber's forehead, her cheek, her hip, and her legs. The expert reviewers found such bruising, particularly the forehead bruise, as indicating an impact, not a shaking, injury. Dr. Smith gave these findings little weight at the trial. He told the court that "very little bruising" was present and that the forehead bruise was in a location where one would expect to find a bruise in a child of Amber's age. He assumed, on the basis of a statement made by Amber's mother, that the forehead and cheek bruises were present before Amber's collapse. He also dismissed the bruises to her hip and legs as being trivial and independent of both each other and an alleged fall.

In fact, several defence experts testified at the trial that the forehead bruise that Dr. Smith dismissed as insignificant was actually a very significant subgaleal bruise. Moreover, it was something that one would expect to find after a fall. In his reasons for judgment acquitting Amber's babysitter, Justice Dunn criticized Dr. Smith for assuming that the forehead and cheek bruises predated Amber's collapse. Justice Dunn found that Dr. Smith did not know enough about the case to justify his assumption.

Further, the subdural hemorrhage was unilateral – that is, it was more on one side than the other. In the majority of shaken baby syndrome cases, however, there is hemorrhage on both sides of the brain. The finding of unilateral subdural hemorrhage undercut the shaking diagnosis and supported the conclusion that Amber had suffered an impact injury, perhaps from a fall.

A surgeon operated on Amber's brain and removed a subdural hematoma (blood resulting from the subdural hemorrhage). The surgeon described the removed hematoma as "very large" and "very extensive." He did not send it for pathological testing, however, so he did not have the hematoma's exact measurements. The international experts told me that, typically, in shaking cases, the blood resulting from the subdural hemorrhage forms a thin film over the brain's hemispheres. The surgeon's observation of a very large and extensive hematoma was, therefore, atypical of a shaking case. When confronted with this contradictory evidence during the trial, Dr. Smith pointed to the absence of an exact measurement of the hematoma and countered that a seemingly large blood clot is sometimes not really so large when examined "in the relaxed light of day." In my view, his response was inadequate. Dr. Smith was asked to consider and explain how a finding of a large subdural hematoma would affect his analysis. Instead, he attacked the accuracy of the surgeon's observation although there was nothing to suggest that the surgeon had described the hematoma incorrectly.

Finally, there was additional evidence that Dr. Smith should also have considered in arriving at his diagnosis. A pathologist must consider the victim's physical attributes in a shaking case. At trial, however, Dr. Smith testified that he diagnosed shaken baby syndrome before he knew Amber's size and weight. Although he acknowledged that it would be more difficult to injure a child of Amber's age (16 months) than a younger child, he told the court that Amber's age did not cause him to rethink his diagnosis. At the Inquiry, Dr. Helen Whitwell, a widely respected forensic neuropathologist, gave her opinion that Dr. Smith should have considered Amber's physical attributes before diagnosing shaken baby syndrome, and that Amber's age should have caused him to reconsider whether she had been shaken to death.

I accept that the presence of the triad was considered by some to be diagnostic of shaken baby syndrome in the 1980s. However, Dr. Smith failed to consider seriously all the available evidence, particularly evidence that was inconsistent with his opinion.

In Nicholas' case, Dr. Smith failed to reconsider his initial diagnosis despite the discovery of new information. He prepared a consultation report in January 1997, after he reviewed the initial autopsy findings, and concluded that Nicholas' death was attributable to blunt head injury. He did so based on five main find-

ings: cerebral edema, increased head circumference, a scalp injury, splitting skull sutures, and a left-sided mandibular fracture.

At the Inquiry, Acting Inspector Robert Keetch of the Greater Sudbury Police Service testified that he provided Nicholas' medical records to Dr. Smith in May 1997. These records demonstrated that Nicholas had a large head throughout his life and that his post-mortem head circumference was what one would expect. It was not "increased." Moreover, when Dr. Smith examined Nicholas' body after exhumation, he confirmed that there was no mandibular fracture. As a result, the five findings on which Dr. Smith relied in arriving at his original diagnosis were reduced to three. This new information did not appear to alter Dr. Smith's thinking, however.

In his report of post-mortem examination, dated August 1997, Dr. Smith gave his opinion as before – that the cause of death was cerebral edema, consistent with a blunt head injury – despite elimination of two of the factual underpinnings of the diagnosis. Indeed, Dr. Smith continued to refer to his original finding of an "increased" head circumference in his August 1997 report and wrote that the exhumation was due in part to that very finding.

In my view, Dr. Smith's failure to reconsider his initial opinion in light of the new and contradictory information was problematic. Indeed, his reaction to Nicholas' medical records, which demonstrated that Nicholas' head circumference had always been large, was similar to his reaction in Amber's case. He continued to maintain, as late as March 2001 in a letter to the CPSO, that Nicholas' head circumference was "clearly abnormal." When pathologists arrive at a diagnosis on the basis of the autopsy findings, they must be willing to revisit that diagnosis when those findings are challenged by other evidence. In several cases, Dr. Smith did not.

The failure to seriously consider additional evidence that contradicts an initial diagnosis is symptomatic of what is known as confirmation bias. This bias must be avoided at all costs. At no time is it the task of the forensic pathologist to find evidence to confirm or deny a theory. Rather, it is to approach a case with an open mind and to let the evidence lead the way. As I discuss in Volume 3, the profession must guard against confirmation bias in forensic pathology.

Use of Default Diagnosis

A default diagnosis is one that is assumed to be correct because the evidence does not exclude it. It must not be confused with diagnosis by exclusion, a traditional method of medical reasoning, which arrives at a diagnosis by using the evidence to eliminate the other diagnostic possibilities. For example, assume a case where

the only medical findings are X, Y, and Z, and the only possible diagnoses are 1, 2, and 3. A doctor using diagnosis by exclusion would reason as follows: findings X, Y, and Z exclude 2 and 3, but do not exclude 1. Therefore, the diagnosis is 1. A doctor using a default diagnosis would say simply: X, Y, and Z do not exclude 1. Therefore, the diagnosis is 1. In the latter circumstances, concluding that 1 is the correct diagnosis would be arbitrary and misleading. This form of reasoning has no basis in science.

As the expert reviewers made clear to me, it is problematic for a forensic pathologist to use a default diagnosis approach. Just because there is no evidence to exclude a diagnosis does not mean that it is the only possible conclusion. Relying on a default opinion is therefore unscientific.

In cases like Valin's and Nicholas', Dr. Smith concluded that his post-mortem findings were the result of non-accidental injury because there was no explanation of accidental injury that he regarded as credible. His reasoning in these cases is one variant of the default diagnosis approach. It makes non-accidental injury the pathologist's default position and puts the onus on others to exclude it. This approach becomes even more troubling when transposed into the criminal justice system.

In Valin's case, Dr. Smith and a SCAN physician reviewed the autopsy photographs and wrote a joint consultation report, dated August 6, 1993. In their report, they noted that Valin's anus was gaping with a large opening and that there appeared to be fissures inside. They wrote, "In the absence of a history of severe constipation, these findings would be suggestive of anal penetration, likely forceful, by a round blunt object." The SickKids doctors also noticed bruising to Valin's face and upper chest and concluded: "In the absence of a reasonable explanation by history, [the findings] indicate non-accidental trauma, including sexual abuse."

In Nicholas' case, Dr. Smith initially wrote a consultation report, finding that Nicholas had cerebral edema, an increased head circumference, splitting skull sutures, a fracture to the left side of his mandible, and a scalp injury. He concluded: "In the absence of an alternate explanation, the death of this young boy is attributed to blunt head injury." After Nicholas was exhumed, Dr. Smith performed a second post-mortem examination. In his report of post-mortem examination, he wrote that there was discolouration along Nicholas' skull sutures. He concluded: "In the absence of a credible explanation, in my opinion, the post-mortem findings are regarded as resulting from non-accidental injury." Dr. Smith employed similar reasoning in the cases of Amber, Tiffani, and Tyrell. His reasoning is contrary to the evidence-based approach to forensic pathology. Under an evidence-based framework, forensic pathologists begin from a position of objec-

tivity, have an open mind, and consider all the possibilities before arriving at a conclusion. They do not assume a diagnosis in the absence of another explanation and do not place the onus on others to locate contradictory evidence. The use of the default diagnosis is another systemic failing that must be guarded against in the future.

The Report of Post-Mortem Examination

Forensic pathologists prepare a report of post-mortem examination for every coroner's autopsy they perform. The purpose of the report is to convey, in writing, what they found at the autopsy and their opinion as to the cause of death. Pursuant to s. 28(2) of the *Coroners Act*, pathologists must report their findings in writing only to specific individuals: the coroner who issued the warrant for post-mortem examination, the regional coroner, the Chief Coroner, and the Crown attorney. However, other persons or institutions, including family members, the investigating police force, defence counsel, and child protection agencies, may eventually receive and rely on the pathologist's report.

The reports prepared by many Ontario pathologists had a number of serious shortcomings in the 1980s and 1990s. In this section, I consider those shortcomings by looking at the reports prepared by Dr. Smith in the cases we examined. I want to emphasize that, for the most part, those shortcomings were not limited to Dr. Smith. Many of the problems associated with his reports were symptomatic of a much larger systemic problem. In many respects, Dr. Smith's reports were not unique and were, instead, indicative of how inadequate post-mortem report-writing practices were in Ontario at the time.

The Limitations of Form 12 and Form 14

Until 1999, the format for the report of post-mortem examination was prescribed by the regulations to the *Coroners Act*. In the 1970s, the prescribed form was called a Form 12. Throughout the 1980s and 1990s, it was a Form 14. The two forms were virtually identical. Both required the pathologist to fill out the following sections: who identified the body and who was present at the autopsy; the observations made during the external and internal examinations; the X-ray, microscopic, and laboratory findings; and a summary of the pathologist's abnormal findings. The forms concluded with a final statement setting out the pathologist's opinion on the cause of death. Because they were virtually identical, in this discussion I will simply call them the Form.

In the 1980s and 1990s, pathologists tended to follow the template set out in

the Form. As a result, reports of post-mortem examination typically included a list of the pathologist's observations, a final conclusion on the cause of death, and nothing else. In 1999, the regulation requiring a form was repealed, and the legislature has not replaced it. As a result, since 1999, the *Coroners Act* has not specified the contents of the report of post-mortem examination. Up to that time, however, the Form was used and was the source of problems.

Limitations Related to History and Explanation

The Form did not require pathologists to include the history and circumstantial information on which they may have relied to form a diagnosis or to explain their reasoning process. Dr. Smith's reports followed this approach. The failure to include such information is inconsistent with an evidence-based approach to forensic pathology, which requires a consideration of the history and the autopsy findings as well as the research and literature published on the topic. The pathologist essentially reasons from that evidence base to a conclusion. A report of post-mortem examination that includes only a recitation of the autopsy findings and a concluding statement as to the cause of death fails to set out those two important elements of the evidence-based approach to forensic pathology.

This approach is exemplified by the report of post-mortem examination completed by Dr. Smith in Baby M's case. Dr. Smith presented a summary of abnormal findings, which listed:

1. Asphyxia (infanticide), with
   - 1.1 Body found in toilet (full term pregnancy)
   - 1.2 Air in lungs and stomach
   - 1.3 Focal hemorrhage, soft tissues of neck
   - 1.4 Petechial hemorrhages of
     - 1.4.1. Thymus
     - 1.4.2. Pulmonary pleura
     - 1.4.3. Epicardium
   - 1.5 Cerebral edema, minimal

The cause of death was identified as "Asphyxia (Infanticide)." Dr. Smith did not include an explanation or reasoning for his findings. Such a minimalist report limits the ability of another person to review the pathologist's opinion. The reviewer would not know what information the pathologist relied on, nor would a reviewer know how the pathologist reasoned from the observations and findings listed to the ultimate conclusion. Indeed, one of the difficulties that the expert reviewers encountered with Dr. Smith's reports was in determin-

ing whether and how specific autopsy findings affected his diagnosis of the cause of death.

That said, I do not fault Dr. Smith for failing to incorporate the relevant history and for not explaining his reasoning process. Given that the Form did not request such information and that the practice of pathologists in Ontario was not to incorporate it, Dr. Smith's reports were in keeping with the practice at the time. This inadequate reporting was clearly a systemic failing.

Limitations Related to Opinions

The Form did not require pathologists to include an opinion on any issue other than the cause of death – such as the timing or mechanism of the injuries – even if it was central to the case. Despite the fact that the police often asked Dr. Smith to provide his opinion on such important issues, his post-mortem reports in the cases before me did not contain these opinions.

The timing of the fatal injuries was of critical importance to the investigation in Jenna's death. If Jenna was injured before 5 p.m. on the day before she died, her mother was implicated. If she was injured after 5 p.m., her babysitter was implicated. The police, Crown counsel, and defence counsel repeatedly asked Dr. Smith for his opinion on the timing of Jenna's injuries. However, his report of post-mortem examination, the only time he offered his opinion in writing, did not address this issue.

In my view, the pathologist's opinion on important issues other than the cause of death should be incorporated into the post-mortem report or set out in a supplementary report. Opinions must be committed to writing to crystallize the diagnosis and ensure that all those involved, including defence counsel, are aware of the pathologist's opinion on the issue. Defence counsel must be provided with this significant information well in advance of the preliminary hearing or the trial.

Again, I want to emphasize that Dr. Smith was not alone in his approach. The Form did not request information relating to issues other than the cause of death, and pathologists typically did not volunteer such information in their reports.

Limitations Related to Consultations with Other Experts

The Form did not require the pathologist to include a description of the procedures followed, the material collected, or any consultation opinions obtained from other experts. Dr. Smith rarely recorded such information in his reports of post-mortem examination. The evidence suggests that pathologists typically engaged in corridor conversations and informal consultations with other experts. Those conversations and consultations were rarely, if ever, recorded in

the pathologist's report. Dr. Smith's inadequate reports were, once again, in keeping with the typical practice at the time and exemplified a systemic failing.

Several cases illustrate the importance of recording consultation opinions obtained by the pathologist in the report of post-mortem examination. In Nicholas' case and Jenna's case, an issue arose as to whether Dr. Smith had in fact obtained the opinion of another expert. In both cases, he did not record the purported consultation in his report, and the expert consulted could not specifically recollect her or his involvement in the case.

In Nicholas' case, Dr. Smith performed the second autopsy in August 1997. A pathologist retained by Nicholas' mother and grandfather alleged that Dr. Smith should have consulted with a neuropathologist but failed to do so. In June 1998, Dr. Smith responded that Dr. Venita Jay, a neuropathologist at SickKids, reviewed the case and gave her opinion to him verbally. She did not issue a written report on the case. Dr. Smith did not document the consultation in his own report or notes. When asked about her involvement, Dr. Jay acknowledged that she may have been involved in Nicholas' case in a peripheral, incidental way, but had no specific recollection of it or of any opinion she offered.

Similarly, in Jenna's case, Dr. Smith alleged that he had consulted Dr. Huyer of the SCAN team during the autopsy, performed in January 1997, to consider if there was evidence of sexual abuse. Dr. Smith did not document the consultation in his report, and, when asked about the case, Dr. Huyer had no specific recollection of being involved.

In Amber's case, the failure to record a consultation caused a related problem. Dr. Smith performed the autopsy in August 1988 and testified at the trial of Amber's babysitter in February 1990. The trial judge acquitted the babysitter in July 1991. Six months later, the SCAN team at SickKids held a meeting to review and discuss the decision. During this meeting, Dr. Smith claimed, for the first time, that he had consulted with an expert in the United States. He did not record that fact in his report of post-mortem examination and did not inform Crown counsel of the consultation. Terri Regimbal, the lead prosecutor in the case, learned of this alleged consultation for the first time at that meeting. At the Inquiry, Ms. Regimbal testified that, had she been aware of the consultation before the trial, she likely would have spoken with the consulting expert and considered calling her or him as a witness at the trial.

It is essential that pathologists indicate if they have consulted with any other experts. If the consultation opinion informs their diagnosis, they must say so. Such acknowledgment permits a reviewer to know the entire evidence base on which the pathologist relied. Without it, the ability to review the case is significantly undermined. Such acknowledgment also permits the Crown and defence

counsel to learn that another expert has provided an opinion and to speak with him or her directly, to determine how that expert's opinion affects the case.

The Use of Parentheses

In several cases, Dr. Smith's reports of post-mortem examination contained findings listed in parentheses. He appeared to use parentheses in two ways. First, he sometimes included medical observations in parentheses. For example, in his report on Kasandra's case, he listed "(Status epilepticus)," "(Retinal detachment, bilateral)," and "(Cerebral atrophy)" as abnormal findings. Second, he sometimes included legal conclusions within parentheses. For example, in Baby M's case he included "Asphyxia (infanticide)" as an abnormal finding. Although both usages lack transparency, the second usage is much more problematic.

At the Inquiry, Dr. Smith explained that he used parentheses to denote information that he could not prove or verify by post-mortem examination but that could serve to explain some of the anatomical findings observed at autopsy. He said he learned the convention as a pathology resident at the University of Saskatchewan but also saw it in practice when he was at the University of Toronto. Dr. Pollanen told us that, for hospital autopsies, University of Toronto residents were taught to list in parentheses information communicated to them – for instance, from the hospital chart – that could not be independently verified at autopsy.

None of the expert reviewers was aware of the convention, and all disapproved of the practice. To include pure speculation in the form of apparent findings is inappropriate, even if the pathologist encloses them in parentheses. Someone reviewing Dr. Smith's report in Tiffani's case, for instance, would not have known that the finding of malnutrition was not substantiated. Instead, a reviewer would likely conclude that malnutrition was just like the other findings listed in the report, or at the least, an opinion based on the pathology findings made at autopsy.

It is true that pathologists may consider and rely on information communicated to them by others. Sometimes, pathologists have to consider and rely on information that they did not personally observe. This may be particularly true where the pathologist is performing a second post-mortem examination following exhumation or is providing a consultation opinion. However, placing such observations in parentheses does not communicate this limitation to a reader. It can be misleading for readers of the post-mortem report, who include physicians, police officers, lawyers, judges, and family members. Without an indication of what the pathologist meant by placing certain terms and phrases in parentheses,

readers will not understand that the "findings" contained in parentheses actually were not made by the pathologist during the autopsy, and the risk of misinterpretation is significantly increased.

Dr. Smith's use of parentheses to surround legal conclusions, however, is much more problematic. In Baby M's case, Dr. Smith listed the cause of death as "Asphyxia (infanticide)." Similarly, in his report in Katharina's case, Dr. Smith listed "Asphyxia (filicidal)" as an abnormal finding. Dr. Smith's use of parentheses in these cases went well beyond his own explanation because infanticide and filicide are not medical findings, but legal conclusions. There are at least three objections to this practice.

First, pathologists should never include a legal conclusion in a report of post-mortem examination. Legal conclusions are outside of their expertise. There is no convention to support the inclusion of legal conclusions in parentheses, and doing so has the potential of interfering with the proper functioning of the criminal justice system.

Second, when using those terms, Dr. Smith was simply speculating about who may have caused the death of the infant or child. Dr. Crane and Dr. Milroy testified that the pathologist's duty is to consider and document the objective findings made at autopsy in his or her report. To include pure speculation in the form of findings that cannot be substantiated is inappropriate, even if the pathologist encloses them in parentheses.

Third, there is the same issue of transparency described above. When terms are placed in parentheses, the pathologist must communicate to the reader what those parentheses mean. Otherwise, readers unfamiliar with the convention risk misinterpreting the pathologist's opinion and the level of certainty with which the opinion is held. The placement in parentheses of legal conclusions and speculative "findings" – which have no place in a report of post-mortem examination – only compounds the problem and adds to the potential confusion.

Although I accept that some medical schools teach their pathology residents to use parentheses for clinical cases in the manner described by Dr. Pollanen, the convention is taught in the context of hospital autopsies, not coroner's autopsies. In my view, such a convention should not be used in the forensic context.

Inclusion of an Opinion on the Manner of Death

In Ontario, the pathologist opines on the cause of death, while the coroner is responsible for determining both the cause and the manner of death. The five categories of manner of death used by the OCCO are natural, accident, suicide, homicide, and undetermined.

Despite this division of responsibility between the pathologist and the coroner, Dr. Smith occasionally provided an opinion on the manner of death in his reports of post-mortem examination. He did so in Baby M's case, opining that "Asphyxia (infanticide)" was an abnormal finding. Similarly, in Baby F's case, Dr. Smith attributed the death to "infanticide" in his consultation report. And, in his report in Katharina's case, Dr. Smith listed "Asphyxia (filicidal)" as an abnormal finding. These terms, infanticide and filicide, point to a manner of death – homicide. Indeed, infanticide, which is a legal term, implies the wilful killing of a newborn child by his or her mother. Filicide also points to the perpetrator of the homicide – a parent.

At the Inquiry, Dr. Pollanen pointed out that, although an opinion on the manner of death is not officially within the scope of the pathologist's task, pathologists are often asked to address the manner of death in some way, since that is what interests the criminal justice system. Indeed, the pathologist might give an opinion on the manner of death indirectly in the interpretation of the findings – for instance, by suggesting that the distribution and extent of the injuries indicates that they are non-accidental. In some circumstances, the cause of death might point necessarily to a manner of death. For example, a medical cause of death might lead inevitably to a conclusion that the manner of death was natural. Or a diagnosis of manual strangulation might direct the coroner to a conclusion of homicide.

All the experts agree that, in no circumstances, should pathologists express a conclusion as to the manner of death in the form of a finding in their post-mortem report. To do so would clearly go beyond the boundaries of the pathologist's duty – to consider primarily the pathology evidence and to arrive at a pathology opinion on the cause of death. In my view, Dr. Smith's inclusion of an opinion on the manner of death in the cases listed above was wrong and beyond his professional competence. At no time should a pathologist make a "finding" that the death was due to homicide, no matter how overwhelming the circumstantial evidence.

Reporting in a Timely Fashion

Subsection 28(2) of the *Coroners Act* requires the forensic pathologist to deliver the post-mortem report in a coroner's case "forthwith." In reality, however, the importance of producing the report forthwith varies, depending on the case. In criminally suspicious cases, timely reporting is critical because members of the death investigation team may need the pathologist's written opinion in order to make important decisions, such as whether to lay criminal charges. In cases where

charges have been laid before the pathologist's report is finalized, the Crown must receive the report in a timely manner to provide disclosure to the defence.

Of course, the significance of timely reporting is not limited to its effect on the death investigation and on any criminal proceedings. Family members will normally be anxious to receive the pathologist's report to understand the cause of a loved one's death. Addressing those anxieties in a timely fashion is also an important goal. However, in cases that raise no criminal suspicions, the receipt of the post-mortem report may be less time sensitive, particularly where the pathologist has already provided an opinion verbally to the coroner and the police, and the coroner has passed that opinion on to the family.

The report of post-mortem examination is not the only report that pathologists are responsible for producing. In some cases, after the pathologist has completed the report of post-mortem examination, Crown counsel may request an additional opinion in writing. There may be several reasons for this request. Crown counsel may seek clarification of the pathologist's opinion. Or Crown counsel may want an opinion on an issue not addressed in the report of post-mortem examination. Alternatively, the pathologist may receive or discover important information after the report has been completed that may affect the opinion expressed in the report. The pathologist should provide any supplementary report to the Crown in writing and in a timely manner for the reasons I have identified above: it avoids misinterpretation, enables independent review, allows the death investigation team to make important decisions, and permits disclosure.

In the 1980s and 1990s, delays in the production of pathologists' post-mortem reports represented a system-wide problem in Ontario. Typically, post-mortem reports took several months to complete. In the mid-1990s, the average turnaround time for post-mortem reports at the OPFPU ranged from four to five months. Two common sources of delay were the time required for ancillary testing that must precede report preparation and the heavy workloads of pathologists performing coroner's autopsies at the time. In 1995, the OCCO issued the 1995 Infant Death Investigation Protocol under which toxicology testing became mandatory in all pediatric autopsies where an anatomical cause of death could not be clearly established. In the 1990s, toxicology tests typically took between nine and 16 weeks to complete, and the OCCO's policy was that the pathologist could not complete the post-mortem report until the toxicology test results were received. Delays due to toxicology testing were largely outside the pathologists' control, but they added to the turnaround times.

Most pathologists in those years attempted to manage their delays by dealing with things within their control. They prioritized criminally suspicious and

homicide cases, and tried to respond promptly to requests made for a specific report. In this way, pathologists dealt with the system-wide problem on an ad hoc basis. Although their approach did not resolve the problem, for the most part it was a satisfactory solution. Coroners, police officers, and Crown and defence counsel received the post-mortem reports they needed when those needs became most urgent.

Dr. Smith, however, failed to produce his post-mortem reports or supplementary reports in a timely manner in many of his coroner's cases. In some instances, his delays reached between eight and 10 months, double the average turnaround time at the OPFPU. In contrast to most pathologists, Dr. Smith did not deal with his delays in a satisfactory way. He continued to delay despite numerous and repeated requests for his reports, even when the urgency of the need was clear.

At the Inquiry, Dr. Smith acknowledged his numerous delays and attributed them to his disorganization and his tendency to procrastinate, together with his unpredictable and at times onerous workload. However, this explanation cannot be the full story. Unlike other pathologists, Dr. Smith ignored repeated requests for his reports even when he knew they were needed urgently by the criminal justice system. He frequently blamed others for his delays. In three cases, Dr. Smith produced his report of post-mortem examination only after the police had obtained a subpoena requiring him to bring his report with him to court. In another case, he produced a report only after a judge had made an order compelling him to do so. In my view, this record simply demonstrates a complete disregard for the needs of the death investigation team and of the criminal justice system.

In Tiffani's case, Dr. Smith ignored the requests for both his report of post-mortem examination and a supplementary report. He performed the second autopsy in the case on July 13, 1993. Throughout November 1993, the police repeatedly requested his report, to no avail. Eventually, in January 1994, the police obtained a subpoena requiring him to appear in court two weeks later. Dr. Smith finally produced his report of post-mortem examination to the police almost a month after receiving the subpoena. That was six-and-a-half months after he performed the autopsy, and three months after the police initially requested his report.

In his report of post-mortem examination Dr. Smith concluded only that Tiffani had died of asphyxia. He spoke with Crown counsel several times before and after the release of this report. During those conversations, he provided a more detailed opinion on what had caused Tiffani's death. In April 1994, in preparation for the preliminary hearing in the case, Crown counsel Sheila Walsh wrote to Dr. Smith and requested a supplementary opinion in writing. She set out

her understanding of his new conclusions and requested that he address these issues in a supplementary report. Dr. Smith did not reply to that letter or a follow-up letter. Then, at some later point, Ms. Walsh reached him by phone. He informed her that he had consulted counsel at the coroner's office, and that he was under no obligation to provide anything in writing other than the report of post-mortem examination that he had already prepared.

Four weeks after receiving Ms. Walsh's request, Dr. Smith finally responded in writing. He wrote that Tiffani had suffered an asphyxial mode of death, but that asphyxia on its own did not necessarily indicate that the death was accidental or non-accidental, as it could also result from natural disease. According to Dr. Smith, the autopsy findings did not indicate the cause of the asphyxia. Although the findings "were consistent with" a non-accidental event, such as suffocation, they did not rule out the possibility of a natural cause.

In my view, Dr. Smith's delay in producing his report of post-mortem examination and his further delay in clarifying his opinion in writing exemplify systemic problems that must be fixed. The police should not have to resort to a subpoena to get a pathologist to produce a report on the case. In addition, when Crown counsel specifically requests a clarification of a pathologist's opinion in writing, the pathologist must, acting professionally, comply promptly with the request. It is unacceptable for pathologists to be the cause of further delay in the criminal justice system.

In Taylor's case, Dr. Smith also caused inexcusable delays. Dr. Smith was consulted for a second opinion in August 1996. The police and Crown counsel repeatedly and unsuccessfully asked him to provide his report. Eventually, nine-and-a-half months later, on the eve of the preliminary hearing, the judge ordered the Crown to produce Dr. Smith's report. Faced with the judge's order, Dr. Smith finally responded. He signed his consultation report three days later and sent an unsigned copy of it to the police the next day.

Similarly, in Sharon's case, Dr. Smith did not produce his report of post-mortem examination until he received a subpoena to bring it to court. He performed the autopsy in June 1997. By December 1997, the police and regional coroner had made several unsuccessful requests for the report. In December and January, Dr. Smith failed to acknowledge letters from defence counsel requesting the report. At the end of January 1998, Crown counsel Jack McKenna also wrote to Dr. Smith, stating: "We have been delaying defence counsel for some time. Indeed, he threatened to subpoena you at an earlier date to get the report. It has now become a bit of an embarrassment for my office." Dr. Smith did not reply to Mr. McKenna either. In the second week of February 1998, the police delivered a subpoena to Dr. Smith, requiring him to attend court with his report in early

March. Two days before his scheduled court date, Dr. Smith completed his report of post-mortem examination and faxed it to the Crown.

Finally, Athena's case provides the starkest example of both Dr. Smith's failure to complete his reports in a timely fashion and his refusal to cooperate with the police and Crown counsel. In this case, there were two reports at issue: the report of post-mortem examination and a supplementary report.

Dr. Smith performed the autopsy on Athena in March 1998. Six weeks later, he submitted samples of Athena's blood, liver, and stomach contents to the CFS for analysis. It is not clear why Dr. Smith waited this long to submit the samples, and he should not have done so. The CFS toxicologist then took five months to complete the requisite testing and to produce the toxicology report. That length of time is also too long. Dr. Smith completed his post-mortem report one month after receiving the toxicology report. There was a seven-and-a-half-month delay between the autopsy and the production of Dr. Smith's post-mortem report.

Many months later, in July 1999, Dr. Smith met with the police and Crown counsel. During the meeting, Dr. Smith provided an overview of the timing of Athena's injuries, including an acute injury to the liver. Dr. Smith told the police and Crown counsel that the liver injury likely took place within 12 hours of Athena's death. Athena's parents had told the police that they were with Athena during the entire 24-hour period before her death. In light of Dr. Smith's opinion on the timing of the liver injury, the police believed they had reasonable and probable grounds to charge both parents with second-degree murder. But they wanted Dr. Smith's opinion in writing. Shortly after the meeting, Detective Sergeant Matthew Crone of the Toronto Police Service asked Dr. Smith to prepare an addendum to his initial report, outlining his opinion on the timing of Athena's injuries.

Thereafter, Detective Sergeant Crone contacted Dr. Smith numerous times, both by phone and in writing. At the end of October 1999, Detective Sergeant Crone phoned Dr. Smith, who said he would have the addendum ready that evening. Dr. Smith did not produce it that evening. The next week, Detective Sergeant Crone phoned Dr. Smith again and left him a message. Dr. Smith did not return the call. Four weeks later, Detective Sergeant Crone phoned Dr. Smith one more time. Dr. Smith advised that he would have the addendum ready the next day. He did not.

In February 2000, Detective Sergeant Crone sent a letter to Dr. Smith to formally request the addendum. He indicated that proceedings against Athena's father had been delayed because of Dr. Smith's failure to produce an addendum: "[T]he situation is now critical and I must formally request, in the strongest possible terms, that the additional information I have requested be forwarded to

me as soon as possible." Even faced with such a strongly worded letter, Dr. Smith did not respond.

In the middle of March 2000, Crown counsel wrote to Dr. Smith. She told him that, unless the Crown provided Dr. Smith's addendum, the defence would bring a motion to stay a previously laid charge of manslaughter against Athena's father on the basis of the delay. The matter was to be dealt with in the court in early April 2000. Again, Dr. Smith did not respond. A week before the April court date, Detective Sergeant Crone asked a member of the police service to deliver a subpoena to Dr. Smith, requiring him to appear in court. Later that day, Dr. Smith finally faxed his one-and-a-half-page addendum to Detective Sergeant Crone.

In May 2002, Dr. Smith spoke with a police officer about the reasons for the eight-and-a-half-month delay in producing this addendum. He told the officer that the request for the addendum was inappropriate because the cause of death was the only opinion that he was obliged to provide. He said that he had wanted legal advice before responding, which, he said, explained in part the delay.

Ultimately, on June 23, 2003, the trial judge, Justice W. Brian Trafford, stayed the proceedings against Athena's parents on the basis that the delay violated their *Charter* right to be tried within a reasonable time. On April 15, 2005, the Court of Appeal for Ontario dismissed the Crown's appeal from Justice Trafford's order. In its reasons for judgment, the Court found that the matter was delayed for the better part of two years because of Dr. Smith's failings. It found no justification for the eight-and-a-half months it took Dr. Smith to prepare the one-and-a-half-page addendum. Indeed, there was no reason why Dr. Smith could not have completed the addendum within a few days of the July 20, 1999 meeting.

At the Inquiry, Dr. Smith offered two explanations for his delay. In his written evidence, he stated that he lacked an appreciation of the rules of disclosure of evidence in criminal proceedings, and that he was under the impression he was not obliged to provide written reports on any matters other than the cause of death. He acknowledged that he might have been wrong, and that he ought to have clarified the expectations of him immediately and promptly prepared an addendum, whether or not it was his usual practice. In his oral testimony, Dr. Smith said that, by the time he was involved in Athena's case in 1998, he was aware that he should provide written supplementary opinions when requested. He conceded that, contrary to what he told the officer in May 2002, he did not seek a legal opinion on whether he had to complete a supplementary report in Athena's case. The problem in Athena's case, he said, was that he failed to make the addendum a priority.

I accept Dr. Smith's second explanation. By 1998, Dr. Smith knew the importance of complying with requests from the police and Crown counsel for a written opinion. Although I accept Dr. Smith's evidence that he found it a burden to

prepare a supplementary report, his failure to respond promptly to the requests made by the police and Crown counsel was inexcusable. His opinion on the timing of Athena's injury directly affected the police investigation and the Crown's prosecution of the case. As a professional, the pathologist has a duty to ensure that any reasonable requests from the police and the Crown are answered in a timely manner, regardless of how burdensome the requests may be.

Considered in isolation, Dr. Smith's delay and inaction in each of the cases of Tiffani, Taylor, Sharon, and Athena are troubling. Considered together, they demonstrate a pattern incompatible with the needs of the criminal justice system. The need to prevent this kind of conduct could not be clearer.

The evidence also shows that rather than candidly admitting the reasons for his delay, Dr. Smith unfortunately also often blamed others for his own failings. In Kenneth's case, Dr. Smith produced his report of post-mortem examination in April 1994, six months after the autopsy. In September 1994, he testified at the preliminary hearing in the case. Defence counsel questioned him about that six-month delay. Dr. Smith told the court that the main reason for the delay was a lack of administrative support at SickKids. He said, "thanks to the government cutbacks, I no longer have a secretary, so I have to actually type my own reports, and any report that gets out is because I have sat there at eight o'clock at night typing it myself." He testified that "I have to do all the work myself."

This explanation was simply not true. Dr. Smith never lost an assistant due to "government cutbacks" or otherwise. At no time was he required to type his post-mortem reports himself. Throughout the 1990s, he had administrative assistants available to him. They were diligent and more than willing to do the work assigned to them. In fact, Dr. Smith preferred to type his own reports.

Dr. Smith provided a similar account in Joshua's case. He performed the autopsy in January 1996. In the latter part of March, he told Sergeant Greg MacLellan of the Ontario Provincial Police (OPP) that he had completed his final post-mortem report, but it was waiting to be typed. He indicated that he had no administrative assistant, and that he was the only pathologist on the schedule for the next few days, so he was typing the report himself at home at night. This was untrue. Dr. Smith had access to an administrative assistant, and the 1996 schedule for pathologists showed that Dr. Smith was not the only pathologist on rotation for the few days following his conversation with Sergeant MacLellan. Despite this, when Sergeant MacLellan advised that he needed the report by the following Tuesday because court proceedings were scheduled for Wednesday, Dr. Smith responded that he did not think the report would be ready by then.

More generally, when senior members of the OCCO asked him about the reasons for his chronic delays, Dr. Smith told them the same story: he was very busy

and did not have sufficient administrative support at SickKids. Dr. Smith's statements about the insufficiency of administrative help were all untrue.

At the Inquiry, Dr. Smith acknowledged that there were occasions when he blamed others, particularly the support staff at SickKids, for this lack of timeliness and that he was wrong to have done so. He apologized to his assistants for implicating them. He admitted that he failed to make use of the administrative support available to him at SickKids. Moreover, because Dr. Smith had indicated that administrative support was an issue at SickKids, senior members of the OCCO spent time trying to remedy that situation, when they could have spent time addressing the real reasons behind his delays. This sorry problem of delay speaks to a troubling aspect of Dr. Smith's complex personality.

Pathologists' Interactions with Other Participants in the Criminal Justice System

Pathologists' interactions with other participants in the criminal justice system – police, Crown counsel, and coroners – are crucial to the smooth functioning of that system. Dr. Smith's interactions with these participants displayed another series of systemic problems in the practice of pediatric forensic pathology. In a number of cases, his early informal expressions of opinions to the police were too categorical, potentially skewing the criminal investigation. His recording of these interchanges was as haphazard as his note-taking at autopsy. Requests for timely responses to questions or for supplementary opinions were frequently met with procrastination or were ignored. These cases exemplify practices that can and did cause great difficulties for the criminal justice system. The systemic challenge is to ensure that they not continue.

Interaction with the Police at Autopsy

As described in Chapter 4, Investigation of Suspicious Pediatric Deaths, a forensic identification officer often attended the autopsy in a criminally suspicious infant death and briefed the pathologist on the available history and what the police had uncovered in the early stages of their investigation. Although there was a continuous exchange of information between the pathologist and the police, pathologists typically preferred to limit the police officer's involvement during the autopsy itself to taking photographs and collecting exhibits. Pathologists usually did not communicate their findings to the police during the external and internal examinations. Instead, they waited until after the autopsy, when they had a clearer, if preliminary, picture, before providing the police with their findings and opinion.

At the conclusion of the autopsy, the pathologist usually provided a preliminary opinion on the cause of death to the police and the coroner. When no cause of death was apparent, the OCCO expected pathologists simply to tell the police that the cause of death was "pending further tests." Unfortunately, not all pathologists followed this approach. Sometimes, rather than inform the police that they did not yet know what caused the child's death, pathologists gave speculative and unsubstantiated preliminary opinions.

In the 1980s and 1990s, pathologists tended to provide their preliminary opinions to the police verbally. However, some pathologists, like those at the Hamilton Regional Forensic Pathology Unit, had a tradition of also recording their preliminary opinions in writing. When the pathologist provided a verbal opinion to the police, the attending police officer usually tried to record exactly what the pathologist said about the cause of death to minimize the potential for misinterpretation. In several cases, Dr. Smith's interactions with the police at the autopsy caused difficulties.

In Joshua's case, Dr. Smith instructed Sergeant MacLellan not to take any notes during the autopsy. Because he saw note-taking as part of his job, Sergeant MacLellan ignored Dr. Smith's objection. He did not attempt to record precisely what was said. He simply recorded the names of the people who participated in the examination, the fact that both a police officer and a member of the SickKids team took photographs, the various times that events were taking place, the times that participants entered and left the autopsy room, and some of the basic activity that took place during the autopsy, such as the removal of the skull. At the Inquiry, Sergeant MacLellan testified that he believed it was important to record such information for continuity of evidence purposes. Since the participants at the autopsy were handling the body, he believed he should at least keep a record of their names. His notes were never intended to record what was said during the post-mortem examination.

In February 1997, during a meeting with Crown counsel, Sergeant MacLellan, and Dr. Smith, Crown counsel asked Dr. Smith about photographs taken by the SickKids staff person during the autopsy. Dr. Smith seemed unaware that photographs had been taken. Crown counsel then referred Dr. Smith to Sergeant MacLellan's notes on the point. At the Inquiry, Sergeant MacLellan recalled: "[Dr. Smith] turned to me, and you know, he was quite upset. He pointed his finger at me [and said], I told you not to take notes."

Dr. Smith's practice of discouraging police officers from taking extensive notes during the post-mortem examination was not unique. In the 1980s and 1990s, pathologists tended to discourage the police from taking notes of what was said during the autopsy. While they did not object to an officer making notes on

certain general matters, they disapproved of note-taking of the pathologist's comments during the examination.

I accept the rationale behind discouraging police officers from recording verbatim what the pathologist says during the autopsy – having someone who is not accustomed to post-mortem examinations and the pathology terms used during those examinations create a verbatim record of the autopsy could be the source of misunderstanding. To ensure that findings are not misunderstood and pathology terms are not misinterpreted, the pathologist should tell the police officers what to write down about the substantive findings made at the autopsy. Officers should not simply record everything they believe they hear.

That restriction does not apply to other, more generic features of the post-mortem examination. Certain information – who was present, when they came and went, whether photographs were taken and by whom, and what exhibits were collected, and so on – is vital to a police officer's function. Sergeant MacLellan is correct in pointing out that continuity is imperative, and that one way of preserving it is by recording properly who handled the body and when.

A second area of concern is that, on occasion, Dr. Smith expressed early informal opinions to the police in far too categorical terms. These errors had the effect of skewing the police investigation. In Kasandra's case, Dr. Smith performed the post-mortem examination and discovered a "donut-shaped" hemorrhage on Kasandra's scalp. After observing the shape of the injury, Dr. Smith told the police to search Kasandra's home for rounded items, such as a knob on a cupboard or something with a distinctive geometric shape that could have either a flat surface or a ring-shaped feature. The police took a woman's wristwatch from Kasandra's home to Dr. Smith, who found it to be a good match for the injury.

At the preliminary hearing in the case, Dr. Smith told the court that the configuration of the wristwatch was consistent with the configuration of the area of hemorrhage. It was therefore reasonable to conclude that the watch was responsible for the fatal blow to Kasandra's head.

This method of interpretation was wrong. At the Inquiry, Dr. Whitwell and Dr. Pollanen testified that Dr. Smith's overlay of the watch onto the scalp contusion was an incorrect and misleading approach to the interpretation of that wound. Although overlaying an object onto an injury might be useful in some circumstances – for example, where there is a patterned object and an external injury – it was inappropriate in this case because of the depth and location of the injury. The scalp contusion was not an external injury – it was in the deep tissues of the scalp, rather than the surface – and the presence of thick hair and scalp tissues altered the appearance of the injury, making such a technique useless. According to Dr. Pollanen, Dr. Smith's interpretation was really "a pseudoscientific wound-weapon

matching analysis." In this case, all that could be said from the scalp injury was that there was an impact of some sort. To suggest that a particular object caused the injury was misleading. Dr. Smith's suggestion to the police, made on superficial analysis, led to an improper, inaccurate, and misleading interpretation of the evidence. The suggestion should not have been given at all.

There is nothing necessarily wrong with providing information to the police, such as a suggestion for investigation or a preliminary opinion. Indeed, when appropriate, such an opinion can be of great assistance, but pathologists must speak cautiously. They must ensure that they have sufficient basis for their preliminary opinions and that they qualify those opinions appropriately. A failure to do so can cause lasting harm by skewing the police investigation.

Finally, Dr. Smith failed to document the preliminary opinions that he provided to the police. Again, he was not alone in doing so. In the 1980s and 1990s, many pathologists provided a preliminary opinion verbally rather than in writing. Although I understand that police officers were usually meticulous about recording a pathologist's preliminary opinion, the pathologist should also be. Such a record avoids confusion about what was in the pathologist's mind at the end of the post-mortem examination. Proper documentation of what the pathologist told the police after the autopsy ensures transparency. A resort to only verbal opinions, by contrast, makes a complete and comprehensive review of the case impossible.

Ongoing Communication with the Police

The exchange of information between the forensic pathologist and the police does not end at the post-mortem examination. In a case where criminal charges are laid, this communication will continue from the commencement of the post-mortem examination until the moment the pathologist testifies in court. Typically, when the pathologist performs the autopsy, the police investigation is still in its early stages. As that investigation unfolds, the police may uncover evidence that is relevant to the pathologist's opinion. Similarly, as the results of ancillary testing arrive following the autopsy, the pathologist may discover something that affects the initial opinion. The police want to know about any changes to that opinion, as they can affect the conduct of the investigation. It is imperative that the pathologist consider all the available evidence and provide a balanced and reasoned opinion that accurately reflects the current state of the evidence. Ongoing communication between the police and the pathologist is therefore critical.

Despite the importance of communication between the pathologist and the police, the reality was that such communication did not always take place in the

1980s and 1990s. In some cases, months went by without any exchange between them. At the Inquiry, several pathologists testified that, although the pathologist and the police exchanged a significant amount of information around the time of the autopsy, that communication tended to drop off rather sharply afterwards. In cases where the pathologist provided a preliminary opinion following the completion of the autopsy, the pathologist tended not to hear from the police until shortly before the preliminary hearing.

The cases examined by the Commission reveal two main issues with the ongoing exchange. First, when the pathologist does not provide the preliminary opinion to the police in writing, it becomes susceptible to misinterpretation. Without some documentation of the opinion, a review of the case becomes all the more difficult because the reviewer cannot tell what the pathologist or the police believed and when.

Second, pathologists must ensure that their opinions are soundly based at all times on the available pathology evidence. In some cases, Dr. Smith provided inappropriate preliminary opinions to the police. In others, he failed to assimilate important information garnered from the police investigation into his opinion, or provided opinions that were unsubstantiated on the pathology evidence. And, in one instance, he went well beyond the pathology evidence to say that certain characteristics indicated that the child's mother was a killer. Not only were these opinions wrong, they were also irresponsible. Pathologists must understand that their opinions can lead to significant consequences. Taking time to reflect and being cautious in the meantime are essential.

Both difficulties are exemplified in Tiffani's case and Joshua's case. In Tiffani's case, Dr. Smith performed the second post-mortem examination on July 13, 1993, after an exhumation. At the autopsy, he told the police that he had found some fractured ribs that were likely the result of direct blunt impact and that Tiffani had failed to thrive. However, further microscopic examinations were necessary before Dr. Smith could give an opinion as to the cause of death. The police charged Tiffani's parents with failure to provide the necessaries of life and aggravated assault.

After the autopsy, Dr. Smith spoke with the police and the Crown counsel on several occasions. A month after the autopsy, he told the police that he believed that the cause of death was "asphyxia," but more work would be required before he could determine how the asphyxia occurred. On January 17, 1994, before he had completed his report of post-mortem examination, Dr. Smith met with the regional coroner, the police, and Crown counsel. According to the statement of the police officer who was present at the meeting, Dr. Smith indicated that Tiffani had died of asphyxia, and that he suspected strangulation.

On February 25, 1994, after he had completed his post-mortem report, Dr. Smith met with the police, Crown counsel, and representatives of the OCCO. During that meeting, Dr. Smith indicated that he could not give a definite mechanism of death because insufficient material was available from the first autopsy. According to the notes of the police officer who was in attendance: "Suspects homicide but cannot absolutely scientific [sic] determination." Similarly, Crown counsel understood Dr. Smith's opinion to be that his findings "were consistent with" Tiffani having been intentionally suffocated, but that he could not rule out certain extremely rare diseases or disorders. One month later, the police arrested and charged Tiffani's parents with manslaughter, in addition to the earlier charges.

Just before the preliminary hearing, Crown counsel understood that Dr. Smith's opinion had changed. According to a memorandum to file prepared by the Crown counsel, Dr. Smith informed him in February 1995 that Tiffani's death could have been caused by a natural disease, but that it was difficult to tell because the initial autopsy had been inadequate. Although the death was consistent with suffocation, Dr. Smith could not prove on the pathology evidence alone that a crime had been committed. Crown counsel believed that Dr. Smith was "severely backtracking" from his original opinion.

On March 1, 1995, Dr. Smith testified at the preliminary hearing that Tiffani had suffered an asphyxial mode of death, but he did not know what caused the asphyxia. Tiffani's death could have been natural, accidental, or non-accidental. Tiffani's parents pleaded guilty to the charge of failure to provide the necessaries of life. The preliminary hearing judge discharged them on the manslaughter and aggravated assault charges.

The events in Tiffani's case reveal several problems with Dr. Smith's communications with the police and Crown counsel. As with the initial opinions that he offered in the autopsy room, Dr. Smith provided subsequent opinions verbally and did not keep a record of his communications. This conduct had the potential to create confusion. During the January 17, 1994, meeting, the police understood that Dr. Smith suspected that Tiffani had died of strangulation. However, in his written evidence at the Inquiry, Dr. Smith stated that he likely would not have said that, as there was no evidence to suggest that Tiffani had been strangled to death.

This case highlights the importance of providing opinions in writing to the police and Crown counsel. Significant problems can arise if the police or Crown counsel misunderstand the pathologist's opinion. The misunderstood opinion may lead the investigation in the wrong direction, or it may lead the police and Crown counsel to make incorrect decisions. In my view, had Dr. Smith provided

his January 17, 1994, opinion to the police in writing, the risk of misinterpretation would have been significantly reduced. The unfortunate reality is that Dr. Smith was not alone in his approach. In the 1980s and 1990s, pathologists tended not to provide such opinions to the police in writing, nor did they tend to document what they said to the police in their own records.

Moreover, to the extent that the police officers' and Crown counsel's notes accurately reflected Dr. Smith's opinions, the opinions were wrong. Dr. Milroy opined that there was never any evidence to support a reasonable suspicion of strangulation or suffocation. Dr. Smith's comments at the January and February 1994 meetings were therefore incorrect. His unsubstantiated opinions had important consequences, however. They led, at least in part, to the police arresting and charging Tiffani's parents with manslaughter.

In Joshua's case, Sherry Sherret, Joshua's mother, told her mother that she thought she might hurt Joshua because of the bond between Joshua and his father, which she did not share. Joshua died one month later, on January 23, 1996. Dr. Smith performed the post-mortem examination. After the autopsy, he advised the police that Joshua had suffered an asphyxial mode of death; however, he was uncertain as to the cause of the asphyxia. He opined that the findings were consistent with smothering, but that he could not rule out natural causes.

On February 8, 1996, Dr. Smith attended a meeting with the police. When asked, he told the police that he believed that Ms. Sherret had killed Joshua. He said that mothers who kill their babies share certain characteristics. For example, they usually talk about it ahead of time, or they might be involved in relationship fights or custody battles, as a result of which they may be trying to get back at the baby's father.

On April 11, 1996, Dr. Smith attended another meeting, this time with the police, Crown counsel, and representatives of the OCCO. Sergeant MacLellan recorded in his notes that someone stated at the meeting that the autopsy findings were "consistent with someone right handed pushing baby's head down." At the Inquiry, Sergeant MacLellan testified that he could not recall exactly who had said that.

In my view, the two issues raised in Tiffani's case are also exemplified here. First, without some documentation of Dr. Smith's opinion, it is unclear if he was the one who told the police that the findings were consistent with a right-handed perpetrator. The provision of a written opinion to the police would have clearly indicated whether it was the pathologist's opinion that Sergeant MacLellan recorded and would have minimized the risk that Sergeant MacLellan had simply misunderstood what was said at the meeting. Second, the opinions expressed at the meetings were problematic. At the Inquiry, Dr. Crane testified that the com-

ment about an alleged right-handed perpetrator was wrong and misleading and that there was no science to support it. Dr. Smith's remarks about the characteristics of mothers who kill their children were also inappropriate, since they were beyond his expertise.

At the Inquiry, Dr. Smith explained that, although the indicators about mothers who kill their babies did not relate to the pathology evidence, he provided them to the police in an attempt to be helpful and to turn their attention to the recognized risk factors with which they might not have been familiar. He acknowledged, however, that his listing of what he called the "hallmark characteristics of a mother who kills" was misguided. I agree. While I accept that pathologists want to be helpful and might direct the police to certain information, Dr. Smith went well beyond that boundary. To say that he believed that Ms. Sherret killed her son on the basis of the "hallmark characteristics" was inappropriate. He had no expertise to say so.

Participation in the Justice System

Providing Evidence in Court

An infant or child death that results in a criminal charge is as difficult and challenging as any faced by the criminal justice system. The charge is normally serious, and the stakes are high. Where the cause of death is an issue, the expert testimony of the pathologist is often critical. The pathologist's role as an expert witness is to remain impartial and not to act as an advocate for either the Crown or the defence. In keeping with that role, pathologists must ensure that the evidence they present to the court is understandable, reasonable, balanced, and substantiated by the pathology evidence. For pathologists doing forensic work, the ability to do the job required in the courtroom is as essential as the ability to do the job in the autopsy suite.

There were very serious failings in the way Dr. Smith performed this important aspect of his role as a pathologist doing forensic work. Problems with his testimony permeated many of the cases examined by the Commission. They ranged from his misunderstanding of his role, to his inadequate preparation, to the erroneous or unscientific opinions he offered, and, perhaps most important, to the manner in which he testified, which ranged from confusing to dogmatic.

Although his evidence was not invariably deficient, there were many troubling examples. They clearly demonstrated ways in which the practice of pediatric forensic pathology in Ontario in those years went badly wrong. In cases like those at issue here, where the expert's opinion is critical and the charges are so serious,

tragic outcomes in the criminal justice system are hardly surprising. While Dr. Smith, as the pathologist giving expert evidence, must bear primary responsibility for these deficiencies, those charged with overseeing his performance cannot escape responsibility. Indeed, neither can other participants in the criminal justice system – Crown, defence, and the court. Each had an important role to play in ensuring, so far as possible, that results in the criminal justice system were not affected by flawed expert testimony, including that of forensic pathologists.

The systemic challenge for the future is to ensure that forensic pathologists provide the criminal justice system with soundly formed opinions that conform to the pathology evidence and are communicated in a clear and objective fashion. It is important, however, to understand the various ways in which Dr. Smith failed in his role as an expert witness. I will discuss the 10 that are most important.

The Expert as Advocate

Dr. Smith failed to understand that his role as an expert witness was not to support the Crown. At the Inquiry, he was candid on this point. He had never received any formal instruction in giving expert evidence. He acknowledged that, when he first began his career in the 1980s, he believed that his role was to act as an advocate for the Crown and to "make a case look good." He explained that the perception originated, in some measure, from the culture of advocacy that he said prevailed at SickKids at the time. In the early 1980s, there was a legitimate concern at SickKids that child abuse was under-reported, under-detected, and under-prosecuted. Dr. Smith was a part of that advocacy culture and perceived that his job, at least in part, was to reverse those trends.

Dr. Smith testified that, by the mid-1990s, he had come to recognize that his role was not to make out the Crown's case but rather to be impartial. Despite recognizing this boundary, he sometimes failed to respect it. In Sharon's case, Dr. Smith said that he felt pressure by Crown counsel to act as an advocate and, contrary to the independence required of him, he did exactly that. Before the preliminary hearing, he said that Crown counsel, Mr. McKenna, told him that the Crown would not be calling another expert, Dr. Wood, as a witness because it did not want to give credibility to the defence's dog-bite theory by calling a forensic odontologist to refute it. Dr. Smith understood from this conversation that Mr. McKenna wanted him to convey to the court the categorical opinion, without having to call Dr. Wood to the stand, that Sharon's wounds were not dog bites.

That is indeed what Dr. Smith did when he testified at the preliminary hearing, although he now says he was not so certain in his own mind. When asked about the possibility of a dog attack, he told the court unequivocally that Sharon

had not died of dog bites. He went so far as to say: "As absurd as it is to think that a polar bear attacked Sharon, so is it equally absurd that it's a dog wound." The preliminary hearing judge committed Sharon's mother to stand trial on the charge of second-degree murder. Of course, we now know that Dr. Smith's unequivocal opinion was wrong. At the Inquiry, Dr. Smith acknowledged that most, if not all, of Sharon's wounds were caused by a dog.

Dr. Smith admitted that he was misguided and too dogmatic in his testimony in Sharon's case. He said that three factors played into his dogmatism. First, he stated that, rather than communicating his own level of certainty about the nature of the wounds, he communicated the certainty of other experts who had reviewed the case, in particular Dr. Wood. Second, he believed that it was his job to dismiss the dog-attack theory on behalf of the Crown. Third, he became defensive when faced with the possibility that he could have missed such a glaring diagnosis. In retrospect, Dr. Smith acknowledged that he should have told Mr. McKenna to call another expert if the Crown wanted to dismiss the dog-bite theory once and for all, as he was not as certain about the nature of the wounds as others. I note that, before the preliminary hearing, there is no evidence that Dr. Smith ever indicated to anyone that he was uncertain about his diagnosis or that he was relying on the opinions of others. I do not find that Mr. McKenna did what Dr. Smith suggests. In any event, if Dr. Smith was relying on Dr. Wood for his unequivocal opinion about the defence's dog-bite theory, he should have said so.

Dr. Smith certainly was misguided in Sharon's case. The pathologist's role does not include advocacy. Although the Crown, not the defence, called Dr. Smith as a witness at the preliminary hearing, at no point was he supposed to be an expert witness advocating for the Crown. He was an expert witness, period. His task was to convey to the court his autopsy findings, his opinion, and the level of certainty with which he held his opinion, not to discredit the defence theory. And his task was not to convey to the court what another expert believed about the case.

The Inadequately Prepared Expert

Dr. Smith also failed to prepare adequately for court. He did not review his file or the autopsy materials before attending court. Instead, his preparation consisted of printing his report of post-mortem examination from his computer and reading it over before court to remind himself of the case. This preparation was insufficient and, not surprisingly, caused difficulties. As expert witnesses, pathologists must prepare for their testimony. After all, they can be of assistance to the court only when they have a complete understanding of the case and the basis of their expert opinion. They can have such an understanding only with proper preparation.

Perhaps the worst example of poor preparation is seen in Jenna's case. Dr. Smith testified at the preliminary hearing in October 1998, almost two years after undertaking the autopsy. During cross-examination, defence counsel asked him if he had taken notes at the post-mortem examination. Dr. Smith told the court that he did not have any notes in the case. This was incorrect. Had Dr. Smith reviewed his file before attending the preliminary hearing, he likely would have realized that he had kept notes. Because of Dr. Smith's inadequate preparation, however, defence counsel never had an opportunity to review his notes before the conclusion of the criminal proceedings.

Dr. Smith attempted to explain his lack of preparation on the basis that he did not know any better, that he did not know he was expected to review all the materials relating to a case before testifying in court about it, or that he was expected to bring his file with him to court. By the date of this preliminary hearing, however, Dr. Smith was an experienced expert witness and surely knew that at preliminary hearings and trials he had to be able to give detailed evidence on the pathology findings and that this could have significant consequences. He surely knew that proper preparation was essential if he was to do this part of his job properly and serve the criminal justice system.

The Overstated Expertise of the Expert

The evidence also showed that, rather than acknowledging the limits to his expertise, Dr. Smith sometimes misled the court by overstating his knowledge in a particular area. When Dr. Smith performed the post-mortem examination in Sharon's case, he had little experience with either stab wounds or dog bites. He had only ever seen one or two cases of each kind. At the preliminary hearing, however, Dr. Smith left the impression that he had significant expertise with both. Dr. Smith told the court: "I've seen dog wounds, I've seen coyote wounds, I've seen wolf wounds. I recently went to an archipelago of islands owned by another country up near the North Pole and had occasion to study osteology and look at patterns of wounding from polar bears." His attempt to so exaggerate his abilities disguised his lack of relevant expertise.

Similarly, when defence counsel asked Dr. Smith about his qualification to offer an opinion on the source of wounding, Dr. Smith failed to mention that he had seen only one or two cases involving penetrating injuries or stab wounds. Instead, he did the opposite. He conveyed the impression that he had significant expertise in the area. He told the court that certified forensic pathologists tended to steer away from pediatric cases and that, since the pattern of wounding is different in children than in adults, he was more qualified than a certified forensic pathologist to assess the source of wounds on a child. Although he acknowledged

that stab wounds were more common in adults than in children, he told the court: "I have had perhaps more experience with stab wounds in the young than others who have experience in adults."

At the Inquiry, Dr. Smith conceded that he should have informed the court that he had seen only one or two cases involving the stabbing of a child. He said that his remarks were a reflection of his overconfidence and his defensiveness in the face of defence counsel's questions. Dr. Smith should not have given this evidence. It was misleading, and wrong. As Dr. Milroy told the Inquiry, stab wounds are much more common in adults than in children, and there is absolutely no difference between a stab wound in an adult and one in a child.

I find Dr. Smith's overstatement of his expertise with penetrating wounds highly problematic. When expert witnesses testify, they have a responsibility to make the court aware of the limits of their expertise. A failure to do so prevents the court from fully assessing whether the person should be permitted to give the opinion evidence. Expert witnesses are not expected to be knowledgeable in every substantive area. When they lack knowledge or experience in an area that informs their analysis, they are expected to be candid about it.

The Expert and Unscientific Evidence

Several times Dr. Smith gave inappropriately unscientific evidence by resorting to his own experiences as a parent. This is seen in two cases: Amber's case and Kenneth's case. In Amber's case, Dr. Smith testified that short household falls by children are not fatal. In support of his conclusion, he told the court that he was a father of a young girl and a young boy. He had watched his children "tumble" down the stairs. What his children needed after such a fall was "a little cuddling, a little loving, kissing whatever part of [his] son or daughter's body may have been injured, looking for a bruise which may show up with time or swelling which may occur." According to Dr. Smith, "My children have fallen from, and … unfortunately bounced down more steps than those and they are still happy and healthy children and that's personal, you can discard that if you want." At the Inquiry, Dr. Smith acknowledged that the reference to his experience as a parent was unscientific and inappropriate. I agree.

I note that Dr. Smith was not the only expert at the trial to refer to his personal experience as a parent in his evidence. Two of the defence experts also referred to their anecdotal experiences as parents.

In my view, all the references to the experts' personal experiences were inappropriate. Expert witnesses are retained to provide opinions because they are experts in a particular area. While reference to personal anecdotal evidence might assist the court in understanding a particular point, it should not form the basis

of the opinion on a particular matter. I find Dr. Smith's reference to his children's "tumbles" down the stairs particularly problematic. His suggestion that low-level falls cannot be fatal because his own children were "happy and healthy" was not only unscientific, but illogical. Simply because his own children had not died from a fall down the stairs does not mean that no child could die from such a fall.

In Kenneth's case, Dr. Smith also relied in his evidence on his personal experience as a father. Again, Dr. Smith acknowledged at the Inquiry that the reference to his personal experience was unscientific and inappropriate.

The Expert and Unbalanced Evidence

Sometimes, Dr. Smith failed to provide a balanced view of the evidence and to acknowledge the existence of a controversy. He presented his opinion in a dogmatic and certain manner when the evidence was far from certain.

As I discuss in Chapter 6, The Science and Culture of Forensic Pathology, forensic pathology is an interpretive science. Some areas are more uncertain than others. In the 1980s and 1990s, there was already considerable controversy surrounding the diagnosis of shaken baby syndrome and whether low-level falls could kill. Dr. Smith faced these controversies in Amber's case and Tyrell's case. Rather than inform the court that the cases touched on controversial and uncertain areas within pediatric forensic pathology, he offered dogmatic and unequivocal opinions.

Dr. Smith testified at the trial in Amber's case in February 1990. At no time during his five days of evidence did he mention the controversy about whether low-level falls could be fatal. Instead, his evidence was unequivocal: children cannot die from such falls. According to him, "You have to drop [children] from three storeys in order to kill half of them. You have to drop them from more than three storeys in order to kill more than half of them." He told the court that there was "no possibility what-so-ever" that a short fall down the stairs, as alleged by Amber's babysitter, could account for her death.

The defence called several of its own experts to refute Dr. Smith's opinion. Several experts testified at the trial that, although the literature suggested otherwise, there was anecdotal evidence to suggest that a low-level fall could lead to death. Ultimately, the trial judge, Justice Dunn, was persuaded by the defence experts. He found Amber's babysitter's story to be credible and acquitted her of manslaughter.

At the Inquiry, Dr. Smith acknowledged that his testimony in Amber's case was "perhaps more black and white than it should have been." He conceded that, on the pathology evidence, he could not definitely exclude a fall in Amber's case. However, that was exactly what he did at the trial.

Dr. Smith did the same thing 10 years later in Tyrell's case. In that case, the caregiver reported that Tyrell had been jumping on the couch, had slipped, and hit his head on either a marble coffee table or the tile floor. Dr. Smith performed the post-mortem examination and concluded that Tyrell had died of a head injury. However, he did not believe that the injury could be accounted for by the low-level fall described by Tyrell's caregiver. The police charged Tyrell's caregiver with second-degree murder.

In January 2000, Dr. Smith testified at the preliminary hearing. As in Amber's case, his testimony was unequivocal: Tyrell's head injury could not be explained by the low-level fall described by his caregiver. Dr. Smith told the court that research studies had shown that, unless there is an unusual finding, such as epidural hemorrhage, which Tyrell did not have, "children do not die from a fall of less than 15 feet." He went as far as saying that, "in order for there to be a reasonable likelihood of death occurring from a fall, a child has to fall not 15 feet, but at least three storeys, if not four storeys." And, even then, according to Dr. Smith, the child has a 50 per cent chance of survival.

Defence counsel cross-examined Dr. Smith about Amber's case. Although this gave him the opportunity to mention the controversy behind the fatality of low-level falls, he did not. Instead, he told the court that, since Amber's case, "the literature [was] on [his] side."

This aspect of Dr. Smith's evidence in Amber's case and Tyrell's case raises difficulties. An expert must ensure that the controversies in the discipline are understood by the trier of fact. In these two cases, Dr. Smith failed to inform the court that, despite his own black and white view that low-level falls cannot result in death, experts disagreed with him. Indeed, according to Dr. Crane, there are too many parameters and variables – for example, how the child falls and what part of the body hits the ground first – to make blanket statements about whether low-level falls can kill. As I have discussed above, Dr. Smith's role as an expert witness was to provide an objective and balanced opinion on the basis of the pathology evidence. This duty should have required him to locate his opinion explicitly within the existing area of controversy. He did not do so.

Dr. Smith's explanation for his overly categorical opinions was that he did not know any better. At the Inquiry, he testified that, in 1990, when he gave evidence in Amber's case, he did not realize that he had an obligation to inform the court of the controversies in the literature: "No one had ever told me. It had not crossed my mind at all." His understanding was that his role was simply to provide an opinion based on his interpretation of the autopsy findings and the literature. This approach makes a proper assessment of the opinion very difficult and leaves the criminal justice system ill served.

The Expert's Attacks on Colleagues

Dr. Smith's sixth error was in his unprofessional and unwarranted criticism of other professionals. In several cases, Dr. Smith expressed opinions in court regarding other experts that were disparaging, arrogant, and, most important, unjustified.

In Dustin's case, a local pathologist performed the first autopsy. The regional coroner consulted Dr. Smith for a second opinion. In March 1994, Dr. Smith testified at the preliminary hearing that the local pathologist had performed "a botched autopsy." He stated, with respect to the pathologist's report: "[T]he paper [the report] is written on is not worthy of filing as an exhibit. It should be filed in the garbage can."

Defence counsel then challenged Dr. Smith with Amber's case and the defence experts who had criticized his work, in particular an expert from Winnipeg. Dr. Smith responded to that line of questioning by saying: "The paid mouth. There's an expert from Winnipeg who's regarded as a paid mouth."

At the Inquiry, Dr. Smith acknowledged that the language he used to describe the local pathologist's work in Dustin's case was very strong. He admitted that his criticisms of her autopsy were inappropriately harsh. He also acknowledged that his comment that an expert was a "paid mouth" was uncharitable. However, he maintained that, at the time of the preliminary hearing, he and others held that view of that expert.

In my opinion, these criticisms expressed by Dr. Smith were not only uncharitable but also unprofessional, arrogant, and unjustified. Although an expert may criticize the work of another expert, a reason must be given for the criticism. Language to the effect that the autopsy in Dustin's case was "botched" and that the report should be "filed in the garbage can" should never be used. Instead, Dr. Smith should have explained to the court what in his view was inadequate about the autopsy and the post-mortem report. If the local pathologist failed to perform certain examinations during the autopsy, or the report failed to describe adequately the autopsy findings, for instance, Dr. Smith should have said so. Moreover, even if Dr. Smith and other pathologists believed that an expert was a "paid mouth," the opinion should not have been given without offering some basis for discrediting that expert's work. Name calling is unprofessional and of no help to the task the court must perform.

Dr. Smith offered similarly uncharitable evidence in Athena's case. During his evidence at the preliminary hearing in November 2001, counsel questioned him on his opinion of several experts, including Dr. James (Rex) Ferris, a forensic pathologist. When asked if he respected Dr. Ferris' work, Dr. Smith testified that he did not respect Dr. Ferris' opinions in pediatric forensic pathology and did not

know anyone in the field who did. According to Dr. Smith, Dr. Ferris did not have any special expertise in the area and his opinions were often "misleading"; Dr. Smith had never seen one that was "close to reasonable." Dr. Smith also told the court that Dr. Ferris was "excluded" from practising pediatric forensic pathology in British Columbia for many years before he lost his position altogether.

At the Inquiry, Dr. Smith explained that he had answered the questions truthfully, though uncharitably and unkindly. In my view, Dr. Smith's comments about Dr. Ferris were not only uncharitable and unkind but also untrue. In fact, Dr. Smith had previously testified under oath that he found Dr. Ferris' opinion to be reasonable. In September 1994, at the trial of Mr. Mullins-Johnson, Dr. Smith told the court that Dr. Ferris' opinion that Valin could have died as a result of manual strangulation was a reasonable conclusion. In addition, there was nothing to suggest that Dr. Ferris was anything but a well-respected expert in British Columbia.

I accept that lawyers often ask experts about the strengths and weaknesses of other experts and their opinions, and it is appropriate to respond to such requests. Nevertheless, Dr. Smith's testimony in Athena's case was unacceptable. If Dr. Smith did not respect Dr. Ferris' work, he should have explained precisely why. He offered no support for his disparaging comments about Dr. Ferris in his evidence. It was unprofessional and entirely unhelpful to the court.

The Expert and Evidence beyond His Expertise

On occasion, Dr. Smith testified on matters well outside his area of expertise. In two cases, Amber and Tyrell, he provided opinions to the court on the "profile" or characteristics of the perpetrator of shaking and blunt head injuries.

During the trial in Amber's case, Dr. Smith testified about the features of a typical shaken baby syndrome case. He described the victim as an infant of up to two years of age with no other evidence of injury, the perpetrator as the child's caregiver or "babysitter" (but not the child's biological father or mother), and the events as occurring in the later part of the afternoon – the "poison hours" – when the child is irritable, the caregiver is alone with the child, and the caregiver "simply loses control" and violently shakes the child in an attempt to stop the crying.

In Tyrell's case, Dr. Smith performed the post-mortem examination and concluded that the child had died from a head injury. During his cross-examination, Dr. Smith offered his opinion on the likely perpetrators of various types of injuries. He told the court that blunt force, shaking, and abdominal injuries were more likely inflicted by men, whereas asphyxial deaths were more likely caused by women. He provided a very specific "profile" of the perpetrator of blunt force, shaking, and abdominal injuries. He told the court that the perpetrator likely was a male (but not the biological father of the child) who had a criminal record, a

violent background, no high school diploma, no steady job, and collected welfare.

At the Inquiry, Dr. Smith acknowledged that such evidence was inappropriate and should not have been offered. I agree. In my view, Dr. Smith's evidence in Amber's case and Tyrell's case went well beyond the scope of his expertise. Dr. Smith was a pathologist. His expertise was in the interpretation of pathology evidence, and his role as an expert witness was to convey that interpretation to the court. Expert witnesses are called to the court to speak to the issues that involve their expertise. They are not given free rein to discuss other matters on which they happen to have an opinion.

I note, however, that in both Amber's case and Tyrell's case, Dr. Smith offered the inappropriate evidence in response to questions from the court and counsel. At no time did the court or counsel object to his testimony. As a result, Dr. Smith is not solely responsible for his inappropriate testimony. Although experts must always recognize the limits of their expertise and stay within those limits, judges and counsel also play an important role in ensuring that those boundaries are respected.

The Speculating Expert

There were instances where Dr. Smith offered opinions that were speculative, unsubstantiated, and not based on the pathology findings. Dr. Smith gave speculative evidence in Joshua's case. In that case, he performed the post-mortem examination and concluded that the cause of death was asphyxia. At the preliminary hearing, he testified that he was "highly suspicious" that suffocation caused the asphyxia. Dr. Smith should not have given this evidence because there was no pathology evidence to support the opinion. Although suffocation can sometimes leave no pathology findings, to say that he was "highly suspicious" of it because there were no pathology findings was simply to speculate.

At the Inquiry, Dr. Smith acknowledged that he should not have given the evidence that he did in Joshua's case. He admitted that his speculation was both unhelpful and prejudicial. However, he explained that, at the time, it did not occur to him that he should not speculate when giving his evidence. He believed that, when he was asked a question, and it was not objected to by either the court or counsel, he should answer it.

I find it hard to accept Dr. Smith's explanation that he did not know that he ought not to speculate. Pathologists provide pathology opinions. I do not see how pathologists can believe that, when there is no pathology evidence, it is open to them to speculate on what could have happened. Although I appreciate that pathologists want to be helpful to the court, speculating about the various possibilities without any pathology evidence is unhelpful and potentially prejudicial. I

also accept that the court and counsel have a duty to ensure that the pathologist does not give inappropriate evidence. When the court or counsel realizes that the pathologist is speculating, either one should object and put an end to that line of questioning. Pathologists, however, are in the best position to ensure that the evidence that they provide is not speculative and is substantiated by the necessary evidence. The pathologist must be responsible for doing just that.

The Expert and Casual Language

Dr. Smith also from time to time used language in his testimony that was loose and unscientific. Certain inappropriate expressions are found throughout his testimony. The language of "betting" is one of them. In Kenneth's case, Dr. Smith testified that suffocation can occur without leaving any marks and that, if he were a "betting man," he would say that suffocation was a better explanation for Kenneth's death than manual or ligature strangulation. In Taylor's case, Dr. Smith testified that, "if you want to play a betting game," the impact to Taylor's head was more likely right- than left-sided. In Joshua's case, Dr. Smith testified that, if he were a "betting man," he would say that Joshua's death was non-accidental.

At the Inquiry, Dr. Smith admitted that his attempt to communicate the level of certainty with which he held his opinion was at times too casual. His effort to convey technical concepts in non-technical terminology resulted in an appearance of casualness that was inappropriate in the circumstances. I agree. Although I understand that it can be very difficult for experts to express the degree of certainty with which they hold their opinions, it is unscientific and inappropriately inexact for an expert witness to use betting terminology. In many of these instances, the language masked the real problem with the testimony – it was speculative.

At the Inquiry, Dr. Smith admitted that he used colloquialisms that were inappropriately casual. Again, I agree. Expert witnesses' use of language is an important part of their role. How the expert communicates an expert opinion to the court affects how the court will perceive and weigh the opinion. Dr. Smith's use of casual language to convey important pathology opinions was inappropriate and, rather than producing greater understanding, likely led to confusion.

The Expert Who Misleads

Finally, Dr. Smith did not always testify with the candour required of an expert witness. In some cases, he made false and misleading statements to the court.

In Dustin's case, in March 1994, during the preliminary hearing, defence counsel asked Dr. Smith about Justice Dunn's criticisms of him in Amber's case. Dr. Smith responded by telling the court, first, that he did not know what Justice

Dunn had written, and second, that "Justice Dunn … prior to hearing the defence experts, in fact, told [Dr. Smith] on more than one occasion [in] private conversations how hasty he was with the work [Dr. Smith] had done and others had done at the hospital." Both statements were not true. Dr. Smith admitted at the Inquiry that he had certainly read Justice Dunn's decision by March 1992, when he wrote to the CPSO about the case. In addition, as I discuss below, Dr. Smith's claim that he had private conversations with Justice Dunn about his evidence in the case was untrue.

Dr. Smith also made misleading statements to the court in Sharon's case. At the preliminary hearing of Sharon's mother, Dr. Smith told the court that he asked Dr. Wood to review the material. Although Dr. Wood did review the autopsy photographs in Sharon's case, it was not at Dr. Smith's request. Crown counsel, through the regional coroner, requested and obtained Dr. Wood's consultation.

These examples are troubling. It goes without saying that an expert witness giving evidence under oath should do so with complete candour and honesty. False and misleading statements should form no part of an expert witness's evidence.

The Role of an Expert in the Criminal Justice System before the Trial

Often, the pathologist assists with the police investigation and the criminal proceedings by helping the police and Crown counsel to understand the pathology evidence and its limits. Sometimes, the defence will retain a pathologist to assist defence counsel. Regardless of who retains her or him, the pathologist's task is not to take a side in the criminal justice system. The role is a neutral one, at all stages of involvement, not just when testifying.

Despite this duty, the reality is that pathologists performing coroner's autopsies may find themselves more familiar with police officers and Crown counsel, increasing the risk that, consciously or not, they will align themselves with the police and the Crown. This temptation must be avoided. Pathologists must understand that their role as experts in the criminal justice system is to provide the police, the Crown, the defence, and the court with a reasonable and balanced opinion, and to remain independent in doing so. The expert cannot become a partisan.

Dr. Smith failed to understand that his role as an expert in the criminal justice system required independence and objectivity. In the case known as Baby X, Dr. Smith became directly involved in the police investigation into Baby X's mother, contrary to his required independence. Baby X died in the spring of

1996. Dr. Smith performed the post-mortem examination and concluded that Baby X's injuries were caused by blunt force trauma, consistent with non-accidental or inflicted injury. Dr. Smith was aware that the police considered the case a homicide and that Baby X's mother was one of the suspects.

Approximately six months after the autopsy, Baby X's mother contacted Dr. Cairns about the results. Dr. Cairns in turn requested that Dr. Smith meet with Baby X's mother to discuss the autopsy results. Dr. Smith agreed, and Dr. Cairns asked Dr. Smith to travel to Barrie to meet with her. On September 4, 1996, Baby X's mother phoned Dr. Smith and they agreed to meet at her home in Barrie the following day. The OPP, which had lawfully installed listening devices in Baby X's mother's home, intercepted the telephone conversation. After learning that Dr. Smith would be meeting Baby X's mother in her home, Detective Inspector Don MacNeil of the OPP contacted him. The officer advised Dr. Smith that listening devices had been installed in the house and would likely intercept Dr. Smith's conversation with Baby X's mother. That day, Dr. Cairns also learned of the listening devices. Nevertheless, Dr. Smith agreed to go through with the meeting, and Dr. Cairns did not stop him.

The next day, September 5, 1996, Dr. Smith met with members of the Barrie Police Service and Detective Inspector MacNeil at the Barrie police station before his scheduled meeting with Baby X's mother. Dr. Smith and the officers discussed the case generally. The officers did not tell Dr. Smith how to conduct his meeting with Baby X's mother, nor did they ask him to solicit any information from her. But it was clear that Dr. Smith would provide an occasion for her to talk about how her baby died.

Dr. Smith then proceeded to the house and spoke with Baby X's mother about the post-mortem examination, his conclusions, and the various possibilities for how Baby X could have sustained his injuries. After leaving Baby X's house, Dr. Smith met again with members of the Barrie Police Service and Detective Inspector MacNeil. Dr. Smith told the officers what he and Baby X's mother had discussed, and also expressed a view on Baby X's mother's demeanour when she was discussing her child's death. Dr. Smith reportedly said: "It was like talking to her about a load of gravel." The officers understood this to be a comment on the inappropriate and flat affect he felt Baby X's mother had displayed during their conversation. Dr. Smith did not, however, express a position on whether or not the pathology evidence supported Baby X's mother's culpability.

At the Inquiry, Dr. Smith testified that he thought it unusual for Dr. Cairns to ask him to speak with Baby X's mother for two reasons. First, he was aware that he would be speaking with a suspect in a homicide investigation, and, second, he would be meeting Baby X's mother at her home, rather than at the OCCO or at

SickKids. Despite the unusual circumstances, he agreed to meet with Baby X's mother because he wanted to accommodate Dr. Cairns' request. Even after he learned of the listening devices, he did not think that the meeting was inappropriate, particularly given that Dr. Cairns also knew of the devices and did not object to his going ahead with the meeting.

In retrospect, however, Dr. Smith acknowledged that his conduct in this aspect of Baby X's case was inappropriate. I agree. The forensic pathologist's role is to perform a post-mortem examination, consider the autopsy findings, and provide an opinion on the cause of death and any other pathology issues. While the pathologist may be requested to speak with a family member about the findings, in no circumstances should the job include having a surreptitiously recorded conversation with a homicide suspect during an ongoing police investigation. Nor should the pathologist express an opinion on the suspect's demeanour during that conversation. This behaviour is simply inconsistent with the principle of independence that is so important to the integrity of expert evidence in a death investigation.

Cooperating with Other Experts

In several cases, Dr. Smith was asked to locate autopsy materials to allow another pathologist to review the case. Dr. Smith did not respond to those requests. In Dustin's case, a local pathologist performed the initial post-mortem examination. The regional coroner consulted Dr. Smith for a second opinion and provided him with the tissue blocks and slides taken from the autopsy.

On March 2, 1994, the local pathologist testified at the preliminary hearing in the case. Before attending court that day, she tried to locate some of the autopsy materials, including the microscopic slides, to refresh her memory about the case. She contacted Dr. Smith, who informed her that he had returned them. He had not. During her evidence at the preliminary hearing, the pathologist told the court that, because she was unable to locate the slides before attending court, she did not have a chance to review them prior to her testimony. At the request of defence counsel, the court adjourned the pathologist's testimony to March 30, 1994, to give her time to review the autopsy materials.

The next day, on March 3, 1994, Dr. Smith informed the regional coroner that he still had the slides. On March 10, 1994, Crown counsel Ms. Walsh wrote to Dr. Smith asking him to send the local pathologist the slides, his consultation report, and the factual synopsis he was given when the regional coroner initially consulted him. Dr. Smith did not respond to Ms. Walsh. Despite further requests, he did not send the material in advance of the continuation of the preliminary

hearing on March 30, 1994. By the time Dr. Smith eventually sent the materials to the pathologist, it was too late for her to continue her evidence before the preliminary hearing concluded on May 25, 1994.

At the Inquiry, Dr. Smith acknowledged that he had an obligation to ensure that the local pathologist had access to the materials and that, by not doing so, he inadvertently delayed the administration of justice, as well as frustrated a fellow pathologist. His failure to provide the requested materials to the pathologist in a timely fashion prevented a witness at the preliminary hearing from continuing with her evidence, a result he surely anticipated. It was an unprofessional way to treat a colleague.

In Joshua's case, Dr. Smith did not respond to requests to locate and forward autopsy materials to another pathologist for review as well. This failure again resulted in the postponement of evidence.

Dr. Smith stated that he did not intend to hinder or obstruct the defence from reviewing his findings. He testified that he did not respond because of his overall disorganization and failure to appreciate the workings of the justice system. I do not accept Dr. Smith's explanation that he did not understand the importance of his cooperation because of naivety about the justice system. He repeatedly portrayed himself publicly as a knowledgeable and experienced participant in that forum.

Finally, as discussed earlier, Dr. Smith did not cooperate with attempts to locate materials from Valin's case so that they could be reviewed by another pathologist. Dr. Smith's actions in that case represent one of the starkest examples of his complete disregard for reasonable requests made by Crown counsel and another pathologist. Given that I describe this unfortunate incident earlier, I will not repeat what I said there. Suffice it to say that there was absolutely no justification for Dr. Smith's callous disregard for the requests made by Dr. Rasaiah and Crown counsel.

Frustrating the Oversight Process

As I will describe in the next chapter, the oversight mechanisms that existed for forensic pathology in the 1980s and 1990s were in many ways ill defined, inadequate, and ultimately ineffective. Nonetheless, those who were charged with oversight responsibility all depended, as they had to, on the pathologists' dealing with them in a candid and forthright manner. Unfortunately, the way that Dr. Smith interacted with them impeded that oversight. There are systemic lessons to be learned from this.

Simply put, Dr. Smith actively misled those who might have engaged in mean-

ingful oversight of his work. When senior officials at the OCCO raised concerns about his conduct in several of the cases examined by the Commission, Dr. Smith did not respond candidly. Similarly, when the CPSO investigated complaints about his conduct in the cases of Amber, Nicholas, and Jenna, he made false and misleading statements. Dr. Smith's misrepresentations frustrated any meaningful oversight that the two institutions might have offered. His attempts to mislead spanned his entire career as director of the OPFPU and continued even after he had resigned from the position.

Misrepresentations about Justice Dunn

As early as 1992, Dr. Smith responded to concerns about his conduct in Amber's case with a story that was simply false. Dr. Smith and several other physicians from SickKids testified at the trial of Amber's babysitter, S.M. On July 25, 1991, the trial judge, Justice Dunn, acquitted the babysitter. In his reasons for judgment, Justice Dunn was highly critical of Dr. Smith and the other SickKids physicians. Specifically, Justice Dunn criticized Dr. Smith for his lack of objectivity, skill, and familiarity with the most recent literature.

Shortly after the acquittal, S.M.'s father, D.M., filed a complaint with the CPSO regarding the conduct of Dr. Smith and several other SickKids physicians who testified at the trial. On May 4, 1992, Dr. Smith sent a written response to the CPSO in which he stated that he "remained as convinced as ever" that Amber had suffered a non-accidental head injury. In addition, he wrote, "on two occasions during my week of testimony, the Judge, Patrick Dunn, discussed my evidence with me at length. He repeatedly indicated to me that he believed [S.M.] to be guilty, and that he believed the opinions provided by [the SickKids doctors] and me."

At the Inquiry, Dr. Smith admitted that his statement to the CPSO about Justice Dunn was not true. He acknowledged that at no time during the trial did Justice Dunn discuss the evidence with him, indicate that he believed S.M. to be guilty, or say that he believed the evidence of Dr. Smith and the other SickKids physicians. However, Dr. Smith said that he did speak with Justice Dunn twice during the course of the trial. First, he and Justice Dunn were seated together on an airplane returning to Toronto from Timmins on a Friday after Dr. Smith's testimony. During that conversation, he said that he and Justice Dunn discussed the backgrounds of the SickKids physicians who testified at the trial, as well as a well-known and unrelated case involving nurse Susan Nelles at SickKids. Second, the following Sunday afternoon, Dr. Smith and Justice Dunn happened to be on the same flight returning to Timmins from Toronto, but were not seated side by side.

On this occasion, Dr. Smith acknowledged at the Inquiry that they simply exchanged pleasantries at the airport.

Justice Dunn provided an affidavit for the Inquiry on December 19, 2007, the contents of which Dr. Smith did not dispute. It was thus unnecessary for Justice Dunn to attend the Inquiry to give evidence. In his affidavit, Justice Dunn wrote that, although he and Dr. Smith were on the same flight during the trial, they simply exchanged pleasantries and did not discuss the case. While he did not have a specific recollection of his conversation with Dr. Smith, Justice Dunn swore: "I am certain that I did not discuss the merits of the case or the evidence with Dr. Smith. I may have commented on the Susan Nelles case because I understood Dr. Smith had some involvement in that case." According to Justice Dunn, "[a]t no point during the course of the trial did I discuss Dr. Smith's evidence with him or indicate to Dr. Smith that I believed [S.M.] to be guilty. I also did not indicate to Dr. Smith that I believed the opinions provided by [the SickKids doctors], as alleged in Dr. Smith's letter to the CPSO."

At the Inquiry, Dr. Smith attempted to explain his false statement to the CPSO. According to Dr. Smith, during the first conversation, the judge "made statements that were very complimentary" of the SickKids witnesses. Dr. Smith testified at the Inquiry that he misinterpreted those complimentary statements to mean that Justice Dunn agreed with their opinion: "I interpreted those statements to mean that not only was he impressed with the witnesses, with sort of their professional qualities, but I also interpreted that to mean he accepted [their] opinion. Because certainly by the time I got off the aircraft, I was absolutely convinced that, based on what he said, that he agreed with the opinion that had been presented." According to Dr. Smith, "I believe that I heard what I wanted to hear as opposed to what he actually said."

I reject Dr. Smith's explanation. Dr. Smith admitted at the Inquiry that Justice Dunn never discussed with him the evidence of any of the experts who testified at the trial. In fact, they did not discuss anything related to Amber's case at all, with the possible exception of some conversation about the SickKids witnesses who testified at the trial. In my view, there was nothing for Dr. Smith to misinterpret in the fashion he claims he did. Instead, I find Dr. Smith's statement to the CPSO that Justice Dunn "repeatedly indicated" to him that Amber's babysitter was guilty entirely self-serving and intended to mislead. I find that the explanation he provided at the Inquiry was an attempt to defend the indefensible: that he had fabricated the content of a conversation with the trial judge.

Unfortunately, this was not an isolated incident. Although Dr. Smith failed to bring Justice Dunn's decision to the attention of the senior officials at the OCCO, Chief Coroner Dr. James Young and his deputy Dr. Cairns eventually learned of

S.M.'s acquittal. When they did, Dr. Smith hid the nature of Justice Dunn's criticisms, concocting yet another story about the trial judge. In particular, sometime in the early or mid-1990s, both Dr. Young and Dr. Cairns spoke with Dr. Smith about Justice Dunn's decision. During those conversations, Dr. Smith not only rejected Justice Dunn's criticisms but actively misled the Chief Coroner and the Deputy Chief Coroner, convincing them that there were no problems with his work and that Justice Dunn had simply got the case wrong. Dr. Smith told Dr. Young that Amber's case was complicated, but that the basis for the acquittal was one defence expert's evidence that there was no such thing as shaken baby syndrome. Dr. Smith also indicated to Dr. Young that Justice Dunn's criticism of his work concerned a lost X-ray.

Dr. Smith's statements to Dr. Young misrepresented the nature and extent of Justice Dunn's criticisms. The reality was that numerous defence experts gave lengthy evidence at the trial that low-level falls, like the one described by Amber's babysitter, could be fatal. Justice Dunn's criticisms of Dr. Smith did not involve just an X-ray; they struck at the heart of his role as a pathologist performing autopsies under coroner's warrant and criticized his lack of objectivity and skill.

Dr. Smith also told Dr. Young and Dr. Cairns that some time after the trial had concluded, he ran into Justice Dunn, and the judge told him that he had changed his mind about the medical evidence presented at the trial. According to Dr. Smith, Justice Dunn told him that he did not properly understand shaken baby syndrome when he presided over the trial and, had his understanding of the concept been more complete at the time, he would have convicted S.M. of manslaughter.

At the Inquiry, Dr. Smith admitted that this claim regarding a subsequent encounter with Justice Dunn was also not true. According to him, likely in January 1998, he spoke to the judge at a judges' conference. During their brief conversation, Dr. Smith purportedly told Justice Dunn that there had been advances in the diagnosis of shaken baby syndrome since the 1990 trial and suggested that there would be a different outcome if some older cases, such as Amber's case, had been tried at that later time.

In his affidavit, Justice Dunn recalled speaking with Dr. Smith at a family law conference. Justice Dunn did not have a specific recollection of the conversation but swore: "I have no recollection of discussing the [Amber] case with Dr. Smith at the family law conference or at any other time. I would not have discussed the case with Dr. Smith. I would let the written judgement speak for itself."

At the Inquiry, Dr. Smith claimed that he misinterpreted this conversation with Justice Dunn because he understood that the judge accepted his statements about the advances in diagnosing shaken baby syndrome: "I heard what I wanted

to hear. I was embarrassed by what had gone on in the past, and I came to believe what I wanted to hear was true, and that was wrong." Dr. Smith acknowledged that at no time did Justice Dunn actually say that he had changed his mind about the medical evidence or that, if he had tried Amber's case then, he would have convicted Amber's babysitter.

Here, too, I do not accept Dr. Smith's explanation of "I heard what I wanted to hear." I accept Justice Dunn's statement that he would not have discussed the case with Dr. Smith, a witness in the case, at any time. There was thus nothing for Dr. Smith to misinterpret. I conclude that Dr. Smith knowingly fabricated two stories about a provincial court judge in an attempt to mislead the CPSO and the OCCO and protect himself and his reputation. This sorry episode offers a very unflattering insight into Dr. Smith's integrity.

When Dr. Smith responded to the CPSO, and when he spoke to the Chief Coroner and the Deputy Chief Coroner about the case, he should have spoken candidly about the criticisms made against him. His failure to do that, and his resort to fabricating statements purportedly made by a provincial court judge about a case, was inexcusable. His statements played an obvious role in the lack of effective oversight of his work by the CPSO and the OCCO. The CPSO did not question or investigate Dr. Smith's allegation about Justice Dunn's repeated assertions of Amber's babysitter's guilt. And both Dr. Young and Dr. Cairns accepted Dr. Smith's comments about Justice Dunn at face value. However unlikely Dr. Smith's story, neither Dr. Young nor Dr. Cairns pursued a more thorough review of Justice Dunn's decision.

Misrepresentations about Report Delays

Throughout the 1990s, Dr. Smith's attempts to mislead the OCCO were not limited to statements made in response to criticisms of his work. As I discuss above, Dr. Smith had serious difficulty completing his reports of post-mortem examination in a timely fashion. Senior officials at the OCCO discussed the reasons for these delays with Dr. Smith on several occasions. In the 1990s, rather than admit that his problems with timeliness were due to his own disorganization and procrastination, as he did at the Inquiry, Dr. Smith blamed others for his failures. He told Dr. Cairns and Chief Forensic Pathologist Dr. David Chiasson that his delays were caused by a lack of administrative support at SickKids.

As I discuss above, this was not true. In fact, Dr. Smith had sufficient administrative support staff at SickKids; he just chose not to use them. Dr. Smith candidly admitted at the Inquiry that he wrongly blamed the support staff at SickKids for his own failings and apologized for doing so.

By blaming his delays on a lack of administrative support at SickKids, Dr. Smith diverted the OCCO's attention from his own failings. From 1994 to 2002, the OCCO attempted to solve a problem that did not exist: insufficient administrative support for Dr. Smith. Had Dr. Smith admitted his own failures to the OCCO in the 1990s, the OCCO could have engaged in a more meaningful attempt to address those failures.

Misrepresentations in Response to Growing Concerns

In the early 2000s, as more concerns about his work and his professionalism surfaced, Dr. Smith continued to react by misleading the OCCO and the CPSO. In 1998 and 1999, Nicholas' grandfather filed two complaints with the CPSO about Dr. Smith's conduct in Nicholas' case. In May 2001, Jenna's mother filed a complaint against Dr. Smith with the CPSO. Dr. Smith's response to both complaints was misleading.

In November 1999, Nicholas' grandfather, Maurice Gagnon, filed a complaint about Dr. Smith with the CPSO. Among other things, Mr. Gagnon alleged that Dr. Smith failed to investigate Nicholas' previous medical records, including his head circumference in life. Dr. Smith replied to Mr. Gagnon's complaint on March 2, 2001. In his letter to the CPSO in response to Mr. Gagnon's complaint, he stated that he was not provided with the measurements of Nicholas' head circumference during life.

That statement was wrong. The lead investigating officer, Sergeant Keetch, gave Dr. Smith those very records during a meeting in May 1997.

On March 12, 2001, Mr. Gagnon responded to Dr. Smith's letter of March 2, 2001. He alleged, that, even after Dr. Smith admitted the weaknesses of his evidence, he continued to assert to the children's aid society (CAS) that he was 99 per cent certain that Ms. Gagnon had killed Nicholas, "fuelling" the CAS proceedings in the case. Dr. Smith responded on April 20, 2001, informing the CPSO: "I attempted to refrain from making any allegations against Lianne Gagnon or any other individual but, rather, stated my views concerning non-accidental injury from which the Children's Aid Society may have proceeded to draw their own inferences, along with such other information that may have been considered by them." He told the CPSO, "I was not involved in this matter in any way by the CAS."

These statements were also false. Dr. Smith had been directly involved in the CAS proceedings. Dr. Smith attended a CAS case conference on May 8, 1998. A CAS employee swore in an affidavit that, during the case conference, Dr. Smith indicated "he was 99% certain that [Nicholas] had died due to a non-accidental

trauma that had been inflicted on the child by the sole caregiver, being the mother, who had the opportunity to do so during the time frame for this type of injury." At the Inquiry, Dr. Cairns, who was also present at the meeting, did not dispute this recollection and recalled that Dr. Smith had a very high degree of certainty in his conclusions. Moreover, Dr. Smith swore two affidavits, dated June 29, 1998, and July 20, 1998, in the CAS proceedings. Dr. Smith's allegation that he was "not involved in this matter in any way by the CAS" was untrue.

In 2001, with regard to Jenna's case, Ms. Waudby initiated a complaint against Dr. Smith with the CPSO, alleging, among other things, that he had failed to perform an adequate sexual assault examination, that he had lost a hair collected from Jenna's body during the autopsy, and that he had failed to provide an accurate opinion on the timing of Jenna's injuries. Around the same time, in July 2001, the police reopened the investigation into Jenna's death. In October 2001, the officer in charge of the investigation, Detective Constable (now Sergeant) Larry Charmley of the Peterborough Lakefield Community Police Service, contacted Dr. Smith about the hair. In November 2001, he determined that Dr. Smith still had the hair collected from the autopsy and retrieved it from Dr. Smith's office.

On December 21, 2001, Dr. Smith responded to Ms. Waudby's complaint. Of note were two of Dr. Smith's assertions. First, he indicated that a SCAN physician, Dr. Huyer, had assisted at the autopsy and together they agreed there was no evidence of abuse. He told the CPSO: "Nevertheless, appropriate sampling was undertaken. The police, who are responsible for the submission of evidence in a homicide investigation, chose not to submit this material for analysis. It remained under seal, in my care." With respect to the whereabouts of the material, Dr. Smith informed the CPSO that, following Ms. Waudby's complaint, "I have asked the police investigators to reconsider their decision and they agreed to do so. Subsequently, a member of the Peterborough Police Service obtained the material from me, and he gave it to the Office of the Chief Coroner for safekeeping until a final decision is made on whether it will be examined."

Second, with respect to his opinion on the timing of Jenna's injuries, Dr. Smith told the CPSO that he understood a review of the clinical information would be important in determining when Jenna sustained her fatal injuries. He wrote, "I even suggested to Ms. Waudby's lawyer that they seek the opinion of Dr. Sigmund Ein, a pediatric surgeon at the Hospital for Sick Children."

While the CPSO investigation was ongoing, on February 14, 2002, the media learned of Detective Constable Charmley's discovery and retrieval of the hair, and openly criticized the police investigation and Dr. Smith's autopsy in the case. Shortly thereafter, Dr. Smith and his wife attended a meeting with Dr. Cairns,

where they discussed this aspect of the case. During the meeting, Dr. Smith once again failed to respond with candour to Dr. Cairns' concerns. As he did in his response to the CPSO, Dr. Smith told Dr. Cairns that he seized the hair and offered it to the forensic identification officer who was present at the autopsy, but that the officer refused to take it. When Dr. Cairns asked Dr. Smith why he did not tell the court that he had collected the hair when specifically asked about a hair found on Jenna's body at the preliminary hearing in October 1998, Dr. Smith had no answer. However, he told Dr. Cairns that he had in fact brought the hair to court with him that day, and that it was in an envelope in his jacket pocket while he testified.

Dr. Smith repeated this version of events at the Inquiry. However, he was no longer certain that it was the forensic identification officer who told him that the police were not interested in the hair. It could have been a police officer, the local coroner, or the regional coroner, but he had no specific recollection of someone providing him with that information. Nevertheless, Dr. Smith testified that he collected the hair and put the envelope containing the hair in his file, which he kept in a cabinet in his office. He said that, in October 1998, he took the envelope containing the hair with him to court when he testified at the preliminary hearing but denied any knowledge of it when asked. He could not recall why he took the hair with him to court that day.

At the Inquiry, Dr. Cairns testified that he found Dr. Smith's claim that the forensic identification officer refused to take the hair at the autopsy "preposterous." Dr. Cairns could not understand why, if the officer had refused to take the hair, Dr. Smith did not immediately report that refusal to someone at the OCCO. Nor could Dr. Cairns understand why Dr. Smith failed to record that he collected the specimen, either in his report of post-mortem examination or in his rough notes. And, with respect to Dr. Smith's claim that he had the hair in his pocket with him at the preliminary hearing, while failing to answer correctly the questions put to him by defence counsel about the hair, Dr. Cairns testified: "I just couldn't understand it."

I share Dr. Cairns' reaction. In my view, what Dr. Smith told Dr. Cairns in early 2002 and what he continued to maintain at the Inquiry makes no sense. Constable Kirkland, the forensic identification officer present at Jenna's autopsy, testified at the Inquiry. He denied having any knowledge of the hair at the post-mortem examination and testified that he would never refuse to take a sample offered by the pathologist. He said, "It would be against all my training, all my experience, my personal ethics and it wouldn't even make any sense." I accept Constable Kirkland's evidence on this point. Dr. Smith's assertion that the police were not interested in a hair found in a deceased child's genital area during an

autopsy of a criminally suspicious case defies logic. And, even if that were the case, I cannot understand why Dr. Smith did not record the fact in his notes and in his report of post-mortem examination. Instead, he waited until October 2001, almost four years after the post-mortem examination, to reveal for the first time that he had collected the hair and that the police allegedly refused to accept it. In my view, his statements were intended to lead Dr. Cairns into believing that he had performed an adequate post-mortem examination and had treated the collection of the hair in an appropriate and conscientious manner.

Dr. Smith's claim that he had the hair with him at the preliminary hearing is simply baffling. As I discussed above, Dr. Smith typically did not review his file before attending court. Moreover, Dr. Smith wrongly told the court at the preliminary hearing that he had no notes of autopsy. This evidence demonstrates to me that Dr. Smith failed to review his file in this case before attending the preliminary hearing. I cannot comprehend what might have possessed Dr. Smith, in his version of events, to open his file on Jenna's case before court, remove the envelope containing the hair that the police apparently believed was a contaminant, take it with him to court that day yet leave the rest of his file behind, and then make no reference to the hair when asked about it in court. It defies any logical explanation. It is untrue.

Dr. Smith's statement to the CPSO that he had suggested to defence counsel that an opinion be sought from Dr. Ein was also false. Although counsel did consult with Dr. Ein about the time of Jenna's injuries, Dr. Smith had nothing to do with the decision to do so.

Dr. Smith's assertion that the hair had finally gone to the police for testing only at his insistence was untrue as well. It happened at the initiative of Ms. Waudby's counsel, James Hauraney, and on the insistence of Detective Constable Charmley.

Dr. Smith's responses to the CPSO unfortunately put an end to any effective oversight by it. His responses actually convinced Dr. Stephen Cohle, the expert assessor appointed by the CPSO, of his version of events. Dr. Cohle accepted what Dr. Smith told him, stating in his opinion to the CPSO Complaints Committee: "Dr. Smith did retrieve a hair from the body which apparently the police refused to submit to the crime lab. To Dr. Smith's credit, he retained the hair and eventually the police did accept it for examination." Moreover, in Dr. Cohle's opinion, "It is to Dr. Smith's credit that he suggested Dr. Ein as a consultant but this did not occur until after the case was in court." In the result, the CPSO investigation was not as probing as one would have hoped.

Finally, Dr. Smith's attempts to frustrate oversight were not limited to the CPSO and continued even after he left SickKids. In September 2005, after resigning from SickKids, Dr. Smith applied to the College of Physicians and Surgeons of

Saskatchewan. As a part of his application, Dr. Smith was required to fill out a questionnaire, which asked if he had ever been the subject of an investigation by a medical licensing authority or a hospital. Dr. Smith replied, "No." This was false. Dr. Smith was the subject of three lengthy CPSO investigations in the cases of Amber, Nicholas, and Jenna, as discussed above.

At the Inquiry, Dr. Smith acknowledged that he was wrong. He explained his response to the college's questionnaire by saying that he misinterpreted the question. He testified that, although he knew that the CPSO had received several complaints regarding his work, those complaints had been dismissed. I cannot accept that Dr. Smith was unaware that his answer was misleading.

The litany of misrepresentations – whether to those responsible at the OCCO or to the CPSO or to the College of Physicians and Surgeons of Saskatchewan – all played some part in impeding effective oversight and professional regulation of Dr. Smith. While this whole episode undoubtedly throws a harsh light on aspects of Dr. Smith's character, that should not obscure the systemic lessons to be drawn.

Professional responsibility is as important a quality for pathologists as for any other professional. Candour and integrity are essential at all times, but especially in dealing with the professional's overseers and with his or her professional regulator. But the approach of those who have oversight responsibilities also matters. Healthy scepticism is preferable to trusting acceptance. The story of Dr. Smith and the hair in Jenna's case makes the point.

Summary

My review clearly demonstrates the kinds of serious failures that occurred in the practice of pediatric forensic pathology in Ontario in the 1980s and 1990s. Coupled with the equally serious failures of oversight that I will describe in Chapter 9, Oversight of Pediatric Forensic Pathology, the results were, unfortunately, often tragic.

In this review of the practice of pediatric forensic pathology, I have necessarily drawn heavily on the evidence I heard about the work of Dr. Smith in the criminally suspicious cases that were the subject of the Chief Coroner's Review. As I have said earlier, I have not attempted to determine the frequency with which these kinds of errors were made, or the extent to which flawed practices were followed, by Dr. Smith or by others, in those years. That was not my task. What is important is to determine the ways in which the practice of pediatric forensic pathology could and did go badly wrong, so that the problems thus revealed can be addressed and, to the extent possible, prevented from happening again.

The failings identified cover most aspects of the role played by a pathologist in a criminally suspicious case. To begin with, Dr. Smith brought to that role woefully inadequate training in forensic pathology. Yet that is the critical expertise called for. He was not alone in this. In those years, very few pathologists in Ontario had the qualifications they should have had.

Many of the practices employed by Dr. Smith in the actual conduct of the post-mortem examinations in cases like those discussed here raise systemic concerns. He did not normally visit the scene, despite the useful information that might yield. He was often careless in obtaining the necessary information; in recording it carefully; in screening out irrelevant information; in recording what he did, saw, and collected; and in preserving and testing the materials from the autopsy. Again, he was not alone. There were other pathologists who followed many of these flawed practices. All of these practices substantially added to the risk of erroneous pathology opinions.

As the expert reviewers concluded, Dr. Smith's ultimate opinions in these cases were fundamentally wrong. I have examined the ways in which they were wrong, not only because of the impact they had on the individuals in these cases, but also because they represent various failings that can and must be addressed for the future.

The same is true of the problems with the way in which Dr. Smith prepared his reports. Here too a number of the flawed practices he used do not appear to have been used by him alone. These failings need to be addressed to help restore and enhance public confidence.

Dr. Smith's interactions with the criminal justice system were also a major source of difficulty. These interactions include his dealings with police, the Crown, and coroners. But of particular importance are the lessons to be learned from the way he played his role as an expert, including his giving of evidence. The kind of behaviour he exhibited creates significant problems for the criminal justice system. It is vital to minimize the risk of a repetition of this behaviour by pathologists in the future.

The review also examined the ways in which Dr. Smith impeded oversight of his work. Once again, there are lessons to be learned here that will improve the contribution that the practice of pediatric forensic pathology can make to the criminal justice system.

The review has thus identified a wide range of failings in the practice of pediatric forensic pathology in Ontario from 1981 to 2001. The failings provide the basis for devising systemic changes to the practices used by pathologists particularly in criminally suspicious pediatric cases. The recommendations I make in Volume 3 respond directly to these findings and will, I hope, ensure that pediatric

forensic pathology can properly serve the criminal justice system in the future.

Finally, although this is a systemic inquiry, it is important to give some attention to Dr. Smith's personal characteristics that may have contributed to the failings I have identified. It is true that personal characteristics cannot be changed by revising the practices followed by pathologists, but their impact can be controlled. In this sense, Dr. Smith's particular personal characteristics exemplify an important challenge. It is a challenge that focuses on ensuring that the quality assurance and oversight mechanisms put in place are able to detect personal shortcomings of pathologists and prevent them from doing harm. If in future there should be an incompetent pathologist, the systemic challenge is to ensure that those responsible for maintaining an effective and fair criminal justice system are able to do so.

It is in this context I turn to a brief assessment of some of the traits that affected Dr. Smith's flawed practices. In his appearance at the Inquiry, Dr. Smith was candid in acknowledging how disorganized he was. He also admitted his own arrogance and the dogmatic manner in which he often presented his opinions. These qualities were on display in many of the cases examined by the Inquiry. They made impossible the proper performance of the task required of him as an expert. As well, his deeply held belief in the evil of child abuse caused him to become too invested in many of these cases. As a result, the objectivity and self-discipline that must be the foundation of the expert's role proved to be beyond him.

Dr. Smith was adamant that his failings were never intentional. I simply cannot accept such a sweeping attempt to escape moral responsibility. The most obvious examples of conduct that belies Dr. Smith's assertion were his attempts to frustrate oversight that I have reviewed. At those moments when the need for accountability and oversight might have become even more apparent to those in a position to do something about it, Dr. Smith was not above using deception to attempt to throw them off the trail.

Dr. Smith is a complex, multi-dimensional person. The terrible irony is that, in some ways, the negative attributes I have described were compounded by positive qualities. He was willing to take on difficult pediatric cases that his colleagues were not anxious to do. He has a sense of responsibility that led him to cooperate with the work of this Inquiry. In his evidence, he admitted many of his shortcomings that the evidence had laid bare. And, albeit much too late, he owned up to a great deal. In addition, the evidence is clear that others found him engaging. Support staff liked working with him, and many people found him a charismatic and effective speaker. As we now know, although he did so on the basis of terribly deficient training and fundamentally flawed practices, he

appeared to be completely assured, and often certain, in circumstances where the science could not provide certainty. These sorts of qualities not only increased the risk he posed as an expert in the criminal justice system but tended to build an unwarranted trust in already lax overseers.

Such an expert can do much damage without effective oversight by those who must provide it and constant vigilance on the part of the participants in the criminal justice system who can protect the system against flawed expert evidence. None of that happened here. The challenge is to ensure that this history does not repeat itself.