# Reliance on internal autopsies in coronial investigations: A review of the issues

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*Internal autopsies are invasive and result in the mutilation of the deceased person's body. They are expensive and pose occupational health and safety risks. Accordingly, they should only be done for good cause. However, until recently, "full" internal autopsies have usually been undertaken in most coroners' cases. There is a growing trend against this practice but it is meeting resistance from some pathologists who argue that any decision as to the extent of the autopsy should rest with them. This article examines the origins of the coronial system to place in context the current approach to a death investigation and to review the debate about the role of an internal autopsy in the coronial system.*

## INTRODUCTION

This article is ostensibly about rates of internal autopsies in coronial investigations. However, examination of that issue requires consideration of more broad, quite seminal questions about who should decide the scope of those investigations and their purpose. The trite answer to the first of those questions is: coroners; and to the second: findings as the manner and cause of death, the prevention of similar deaths and improvement to public health and safety. However, as usual, glib answers mask greater complexities. Terms such as "cause of death" or "how the person died" are imprecise and to some extent open ended. Further, the legislation which empowers coroners and regulates their activities reflects policy underpinnings which may be inconsistent or at least in tension. And finally, coroners and pathologists come from different traditions, embrace different epistemologies, use different methods and have not communicated sufficiently to have developed a shared consensus about exactly what coronial investigations are meant to achieve. In these circumstances it should not be surprising that they have different views about the value of internal autopsies in coronial investigations. The current authors follow Freckelton in suggesting that the relationship between coroners and institutes of forensic medicine "has the potential to be extremely constructive [but] also has the potential for tension".[1]

By reference to the history of the coronial system and through an examination of current practice, this article suggests that while the influence of coroners has fluctuated, the extent to which internal autopsies need to be relied upon to assist coroners make findings and recommendations has been exaggerated. The extent of this disjuncture can best be demonstrated by reviewing the role of the coroner as it has developed over the centuries, especially its struggle with other organs of society to remain relevant to the state's response to sudden death. Other justice officials, the Church and most recently medical science have exerted sway. This article suggests that coroners now need to consider whether they should assert themselves to refocus the purpose and methods of coronial inquiries. While this has been suggested by others with regard to inquests and coronial recommendations,[2] the reliance on internal autopsies is a further aspect of coronial practice which warrants fresh scrutiny. To persuade both coroners and pathologists that changes are needed requires these diverse professions to define with greater precision what it is the coronial system seeks to deliver and who should be responsible for delivering it.

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[1] Freckelton I, "Death Investigation, the Coroner and Therapeutic Jurisprudence" (2007) 15 JLM 242.

[2] King M, "Non-adversarial Justice and the Coroner's Court: A Proposed Therapeutic, Restorative, Problem-solving Model" (2008) 16 JLM 442; Freckelton, n 1.

## HISTORICAL PERSPECTIVE

When examining the development of the office of the coroner over the last 800 years, it is useful for the purposes of this article to divide that history into three parts: the period up until the settlement of the Australian colonies; the post-colonial period until the late 20th century; and the last 25 years.

### From creation to colonisation

The context of the creation of the coroner was Norman England in the 12th century. At this time, crime was a major source of revenue for the Norman kings. The confiscation of the property of felons, the payment of amercements, and the forfeiture of deodands funded continental wars and bolstered an army that was needed to subdue the still rebellious English.[3] In 1194, King Richard I directed that in each county local worthies be elected, to "keep the pleas of the crown" and to ensure property was properly accounted for by the local sheriffs. In relation to deaths, the focus was on identifying homicides, suicides and wrongful deaths and the coroner was to ensure all such deaths were recorded and that the property that would flow to the King was properly valued and seized. There was little or no interest in deaths by natural causes.[4]

To discharge these functions the coroner viewed the body and its wounds. Juries of locals relied on personal knowledge and reputation to assist with the necessary determinations. The Church made rules about such things as suicide and the King made regulations stipulating how much property would be taken from either the estate of the deceased, the owner of the property that caused the death or the local inhabitants who had failed to prevent it. The coroner was expected to enforce these rules and regulations. Justices of the Peace and sheriffs soon jockeyed for pre-eminence in the same space. It also appears that there were overlapping roles and responsibilities and that these officials and coroners frequently competed for the victims of violent crimes.[5]

While it is unsafe to make general conclusions about the way the mediaeval coroners approached their task, the records contain examples of coroners mitigating the harshness of the prevailing law by, eg, refusing to forfeit a felon's property after allowing him to adjure the realm on the basis that his family would be left destitute. The graveyard scene in *Hamlet* is a classic example. At the time, the Church decreed that a person who took their own life was guilty of self-murder, and could not be buried in consecrated ground or receive a Christian funeral service. Those familiar with the play will recall that Ophelia drowned herself after being scorned by Hamlet who had no time for love while unsure about his own continued existence.

The gravediggers speculate as to how it is that Ophelia comes to be buried in a royal cemetery:

> First gravedigger: Is she to be buried in Christian burial, that wilfully seeks her own salvation?
>
> Second gravedigger: I tell thee she is: and therefore make her grave straight, the crowner hath sat on her, and finds it Christian burial.
>
> First gravedigger: How can that be, unless she drowned herself in her own defence?[6]

The playwright recognises that suicide is, according to the Church, a crime similar to murder and therefore proposes that, like any other murder, the offender could, with the connivance of the coroner, be excused if she acted in self-defence, even if, as in this case, the offender and the victim were the same person.

This reliance on lay juries, personal inquiries and divine guidance made way, from the age of enlightenment in the 18th century, to scientific expertise as the new rationale for claims to truth in a death investigation. A coronial system which had previously utilised knowledge authorised by local experience, institutions legitimated through historical pedigree and efficacy measured by the value of collective self-governance shifted to epistemological detachment, an historical reason and objective

[3] Freckelton I and Ranson D, *Death Investigation and the Coroner's Inquest* (Oxford University Press, Oxford, 2006) pp 6-12.

[4] McKeogh J, "Origins of the Coronial Jurisdiction" (1983) 6 UNSWLJ 191.

[5] Matthew P and Foreman J, *Jervis on Coroners* (11th ed, Sweet & Maxwell, London, 1993) pp 1-5.

[6] Shakespeare, William, *Hamlet*, Act 5, Scene 1.

truth claims. The coronial investigation, historically central to civil society, participatory and democratic, became detached from civil society and driven by expertise. Dissecting the dead body was crucial to the accumulation of facts required for the advancement of medical knowledge. Sources external to the body came to be seen as less reliable.[7]

The tussle between these two stories was colourfully described by George Eliot in her novel, *Middlemarch*:

> "In my opinion," said Lydgate, "legal training only makes a man more incompetent in questions that require knowledge of another kind ... A lawyer is no better than an old woman at a post-mortem examination. How is he to know the action of a poison?",,
>
> "You are aware, I suppose, that it is not coroner's business to conduct the post mortem, but only to take the evidence of the medical witness?" said Mr Cichely, with some scorn.
>
> "Who is often almost as ignorant as the coroner himself," said Lydgate.[8]

The Middlemarch incident was based on an 1830 electoral contest for a coronership between a lawyer and a doctor. The campaign of Doctor Wakley urged support for "reason and science against ignorance and prejudice". On the other side, a vote for solicitor Baker was said to avoid a doctor "drawing the attention of the jury from the plain and straightforward investigation of the facts into the labyrinths of his own scientific investigations".[9]

It has been argued by Burney[10] that Wakley's stance represented one instance among many of the steady expropriation by professionalised medicine of hitherto legal spheres of competence and judgment. According to Wakley, medicine had a different relationship to truth than did lay professions like law. Where a lawyer was fettered by legal sophistry and precedents, a doctor cared only for unencumbered and socially unmediated evidence. While a lawyer's trade was irreducibly social, embedded in contingent vested interests, a medical man was connected to the social realm only at a removed level. In contrast, those supporting Baker argued that only the legal profession could serve the public interest, as only a lawyer came to the evidence without professional prejudice. This early professional tension was the context within which the coronial system of Australia was established.[11]

## Coroners in colonial Australia, 1819-1985

Initially, independent coroners, some of whom were medically qualified, were appointed in the new colonies but it quickly became apparent that suitable candidates were not sufficiently available across the vast distances and dispersed populations to enable the practice that had been imported from England to continue. Accordingly, from about the middle of the 19th century the coroner's role was combined with that of police magistrates and later clerks of the local courts.[12] These judicial or quasi-judicial officers had little experience investigating death and spent most of their time deciding criminal or civil cases or administering their courts. Throughout this period the development of medical science proceeded apace and flourished. In the 20th century forensic pathology became recognised as a distinct subspecialty, its practitioners feted.[13] It seems clear that, during this period, those parts of Australia that were not served by full-time coroners saw the balance of power shift from the coroner to the medical practitioners who undertook coronial autopsies. For example, the standard autopsy order in Queensland was directed to the local government medical officer and required him to

[7] Carpenter B and Tait G, "The Autopsy Imperative: Medicine, Law and the Coronial Investigation" (2010) 31(3) *Journal of Medical Humanities* 205.

[8] Eliot, George, *Middlemarch*, Ch 16.

[9] Burney I, *Bodies of Evidence: Medicine and the Politics of the English Inquest, 1830-1926* (Johns Hopkins University Press, London, 2000) p 18.

[10] Burney, n 9, pp 17-20.

[11] See too Freckelton and Ranson, n 3.

[12] See Abernathy J, Baker B, Dillon H and Roberts H, *Waller's Coronial Law and Practice in NSW* (4th ed, LexisNexis, Melbourne, 2009); *Inquests of Deaths Act 1866* (Qld).

[13] See eg Browne DG and Tullett EV, *Bernard Spilsbury: His Life and Cases* (George Harrap & Co, London, 1951).

> make a post mortem examination of the body to the extent you deem necessary [and] at your discretion and with such assistance by an analyst or pathologist or other qualified person make a special examination by way of analysis test or otherwise of any parts or contents of the body or any other substance or thing you consider necessary for the purpose of the Act including the verification of the identification of the deceased.[14]

It is apparent that these doctors enthusiastically exercised this broad discretion and three-cavity autopsies were performed in almost all cases. While not suggesting that there was a hostile takeover, it does appear that coroners retreated and the emerging discipline of forensic pathology grew into the space vacated.

## The late 20th century reforms

All Australian States and Territories and New Zealand reformed their coronial systems in the later part of the 20th century or the first decade of the 21st, commencing with the *Coroners Act 1985* (Vic). The reform process was given impetus by the reports of the Royal Commission into Aboriginal Deaths in Custody,[15] which highlighted the serious inadequacies of the coronial system in each State and Territory.

The appointment of State or chief coroners; the granting to family members of legislated rights to participate at various points in the process (including whether an internal autopsy should be undertaken); and the expansion of the coercive powers of the office created an opportunity for rebalancing and refocusing the system. As a result of these reforms, the jurisdiction now has full-time specialist coroners, adequately resourced and empowered. These "senior coroners" with "an increasingly prominent public profile" are well placed to reconsider whether the focus and extent of their investigations need further refining.[16]

## THE IMPACT OF HISTORY

The development of the office of the coroner has been dealt with in some detail here because its history shapes the way the role is discharged today. Coroners developed as, and remain, an organ of civil society designed to scrutinise sudden, unnatural, violent or wrongful deaths, especially in state custody, using open, transparent and participatory methods that give due weight to the interests and opinions of those most affected by the death. The positioning of the coroner as part of the third and most independent arm of government means it is inevitably political: coroners' findings impact on government policy and the allocation of public resources. An adherence to an epistemology that blends inquisitorial and therapeutic jurisprudence with a more traditional adjudicative function distinguishes coronial proceedings from both the rest of the legal system and from forensic pathology. Moreover, the re-creation of specialist chief coroners has enabled the distinctive nature of that discipline, developed over the centuries, to re-emerge.[17] The development of medical science took a very different course and from the outset placed itself in contest with the older methods of seeking knowledge and truth, as the contest between Wakley and Baker attest. This contested terrain continues to impact upon the ways in which pathologists and coroners interact.

## THE BALANCE OF POWER

As mentioned, after full-time coroners disappeared from most of the Australian colonies and New Zealand, medical practitioners moved to assume a greater leadership role. With the re-emergence of full-time coroners this has resulted in an ongoing tension between coroners and forensic pathologists as to which discipline should make decisions about matters such as the necessity for an internal

[14] The *Coroners Act 1958* (Qld), s 18, authorised a coroner to "require any medical practitioner to make a post mortem examination". The term was not defined and the Act contained no provision similar to that which replaced it for an external or partial internal examination: see *Coroners Act 2003* (Qld), s 19(3).

[15] Royal Commission into Aboriginal Deaths in Custody, *National Report* (Australian Government Printer, 1991) Vol 1, p 129 et seq.

[16] Freckelton, n 1 at 242, 253.

[17] Freckelton, n 1 at 242, 253, King, n 2 at 442.

autopsy. While not suggesting that hostilities have broken out, it does seem that pathologists are only willing to share control on the basis that full internal autopsies are the norm. The paternalistic nature of modern medicine seems to have led some doctors to believe that not only do they know what is in their patients' best interest when they are alive, they also have a monopoly on knowing what is best for them when they die. However, the retained organ scandals that have caused public furore in England and Australia in the last two decades suggest that coroners are better placed to reflect community concerns about what happens to the bodies of the dead.[18]

This should not come as a surprise. The rise of medical expertise is the hallmark of both modernity and modern government. With its mantra of truth, objectivity and progress, modernity arrived, the dark ages were banished and humanity came of age. Science is the exemplar of the modernist enterprise and medicine is its flagship. In such a context, the internal autopsy operationalises the requisite detachment required of an appropriately objective death investigation as it appears less open to interpretation and thus more scientifically supportable, than the subjective opinions of family and friends as well as the circumstantial evidence gathered at the scene. Within the logic of modernity, the latter are widely regarded as inferior mechanisms of truth assessment.[19]

Three responses can be made to this positioning of the autopsy in science and society. First, science, like law, is a social process and the truths it produces are forged within specific social contexts, with social factors exerting considerable influence over the nature, course and success of scientific practice.[20] Secondly, the rigorous scientific method is, in practical terms, a nebulous collection of rules and procedures, often applied unevenly and pragmatically. For example, so-called "full internal autopsies" are far from full and have developed by reference to what is considered practical and what is considered likely to "get a result" in most cases. In an autopsy, specific pieces of information are selected over others, choices are made, ideas exchanged and conclusions drawn. Truth does not emerge fully formed and mature, with pathologists as mere spectators.[21] Thirdly, while promoting their practice on the basis that it is objective and standardised, many pathologists seem stuck performing what they were taught with insufficient regard for the changes in other areas of medicine and, more importantly, public expectations. Principles of evidence-based practice which values meta-analyses and systemic reviews over conventional wisdom seem to be given scant regard.[22]

## Role confusion

In the introduction to this article it was suggested that, when considering internal autopsy rates, one of the two questions that needed addressing was who should decide the scope of a coronial investigations. To a black-letter lawyer that question is a "no-brainer": the legislation gives the power to the coroners.[23] However, coronial investigations are interdisciplinary and custom and tradition have perhaps blurred what, at law, might be clear lines of authority. The resultant role confusion of pathologists in a coronial death investigation thus needs some discussion.

For most pathologists, their role in a coronial death investigation is clear: to establish the cause of death and to look for information indicating inheritable morbidity traits for dissemination to the

[18] Luce T, *Death Certification and Investigation in England, Wales and Northern Ireland: The Report of a Fundamental Review* (Crown Copyright, 2003); Smith, Dame Janet, *The Shipman Inquiry: Third Report – Death Certification and the Investigation of Deaths by Coroners* (Command Paper CM 5854, 2003); Walker B, *The Inquiry into Matters Arising from the Post-mortem and Anatomical Examination Practices of the Institute of Forensic Medicine* (Dept of Health, NSW, 2001).

[19] Burney, n 9; Carpenter and Tait, n 7.

[20] Feyerband P, *Science in a Free Society* (Verso, London, 1978).

[21] Collins N, *Changing Order: Replication and Induction in Scientific Practice* (Sage, London, 1985).

[22] Evidence-based medicine requires the practitioner to have regard to the best available primary research to determine whether an intervention under consideration is likely to benefit the patient: see Craig JC, Irwig LM and Stockler MR, "Evidence Based Medicine: Useful Tools for Decision Making" (2001) 174 MJA 248. No research has been undertaken to demonstrate the benefits of internal autopsies being undertaken in all coronial cases and neither have the risks of a more limited use of internal autopsies been adequately assessed.

[23] The *Coroners Act 2006* (NZ), s 36, requires a coroner who proposes ordering anything less than a full internal autopsy to first consult with the police and the pathologist to whom the order will be directed.

deceased person's family. As such, pathologists consider they are being hindered in discharging these roles by coroners ordering external or partial internal autopsies and fear they will be held accountable if evidence is lost because a less invasive autopsy is undertaken. While not against pathologists playing a pivotal role in coronial investigations, given that their expertise is crucial to understanding many of the issues coroners are confronted with, it is the contention of the current authors that pathologists' professional perspective overstates the need for internal autopsies.

Such a belief in the truth and greater merit of the medical enterprise is demonstrated by pathologists in their response to family objections. Resentment is common when either the coroner or family objects to the undertaking of a three-cavity internal autopsy. These objections take the form of suggesting that a partial internal autopsy would only be undertaken when only part of a body was available, and an increased suspicion and need to perform an internal autopsy when a family member raises an objection.[24] However, an over-reliance on autopsy as part of a coronial investigation, especially when other modes of inquiry may be open to the coroner and pathologist,[25] has seen a large increase in objections to the forensic autopsy in Australia,[26] and a rise in the number of States in Australia and the United States which now include religious objections as an integral part of the coronial process.[27]

The starting point for any reconsideration of the necessary extent of internal autopsies is an overdue discussion between coroners and pathologists as to their respective roles and what, exactly and specifically, the coronial system is seeking to achieve.

## PURPOSE OF CORONIAL INVESTIGATIONS

Coroners and pathologists may differ in what they understand to be the purpose(s) of coronial inquiries. This may be a startling assertion at first blush: establishing the manner and cause of death and contributing to prevention would be the stock standard answers. However, part of the problem is that these terms are insufficiently precise to encompass a wide variation in practice and there has been little discussion to resolve the possible ambiguities. There can be no consensus about the level of autopsy required in a particular case unless these doubts are resolved.

Coroners Acts variously restate the traditional "manner and cause of death" as the "medical cause of death" and "how the person died" or "the circumstances of the death".[28] No guidance is given as to the degree of certainty required or to the level of specificity with which the cause should be described. Both issues are crucial to a determination of the level of autopsy that is appropriate.

Debate about how wide to cast the scope of a coronial investigation usually focuses on the so-called "chain of causation" and how the actors along it may have contributed to the death. The more remote the action to the death, the more difficult it may be to justify scrutinising it as part of a coronial inquiry. This issue may also be relevant to the extent of the autopsy undertaken in a particular case. Identifying homicides or other wrongful deaths is clearly within scope. The failure of earlier medical treatment to avoid the death or the genesis of disease that may be uncovered by autopsy is less clearly so.

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[24] Barnes M, "Reviewing Reliance on Internal Autopsies", address to the Asia Pacific Coroners Society Annual Conference, Auckland, 2010).

[25] Segal G, "Law and Practice in Relation to Coronial Postmortems – A Social Perspective" (2006) 25 *Medicine and Law* 101.

[26] Lynch M, "Forensic Pathology: Redefining Medico-legal Death Investigation" (1999) 7 JLM 67; Emmett S, Ibrahim S, Charles A and Ranson D, "Coronial Autopsies: A Rising Tide of Objections" (2004) 181(3) MJA 173.

[27] Mittleman R, Davis J, Kasztl W and Graves W, "Practical Approach to Investigative Ethics and Religious Objections to the Autopsy" (1992) 37(3) *Journal of Forensic Sciences* 824; Vines P, "The Sacred and the Profane: The Role of Property Concepts in Disputes about Post-mortem Examination" (2007) 29(2) Syd LR 235, http://www.austlii.edu.au/au/journals/SydLRev/2007/9.html viewed 2 August 2011.

[28] See eg *Coroners Act 2006* (NZ), s 57(2); *Coroners Act 1996* (WA), s 25(1); *Coroners Act 2003* (Qld), s 45(2).

Prevention is the aspect of the coroner's role which has received the greatest boost from the modernisation of the jurisdiction and it, too, can lead to uncertainty about the appropriate extent of the autopsy.[29] The remainder of this article discusses each of these coronial purposes in the context of the decision as to the extent of the autopsy.

## INTERNAL AUTOPSY

A thorough internal autopsy will almost always uncover information not otherwise discoverable. However, this is not sufficient justification for internal autopsies in the coronial system. First, internal autopsies are invasive and involve extensive mutilation[30] of the body. As Pounder[31] has suggested, the "need for the state to seize the corpse and to dissect it for investigative purposes must be balanced against the rights of the family to privacy and freedom of religious practice". Indeed, it can be argued that unless they are necessary, ordering internal autopsies is inconsistent with coroners' professed respect for the dead and claims to treat their bodies with reverence. In the coronial system we shroud the body in sheets and refer to the deceased by their name as evidence of the need to preserve the dignity of the dead. If we propose sawing off the top of the head, opening the chest and abdomen, removing all of the internal organs, individually dissecting them before loading them into a plastic bag and shoving them back into the abdominal cavity,[32] we need to be able to demonstrate that it is necessary. It is no coincidence that the pioneering pathologists like Morgagni only had access to executed criminals or bodies stolen from graveyards or paupers' burial pits.[33] It could thus be argued that an unnecessary internal autopsy is unethical.[34]

Secondly, autopsies are expensive. In Queensland it is estimated they cost approximately $5,000 per procedure while in England in 2006, the Constitutional Affairs Committee estimated that "medical assistance for local coroners" would cost £1.3 million per year. Moreover, this was the largest budget line for the newly proposed coronial system, more than the estimation for the "Chief Coroner and Deputy Chief Coroner" (£1 million) or "Appeals" (£1.1 million).[35] Finally, as specialist doctors, pathologists take many years to train, their time is expensive, and they are in short supply. As noted by the British Medical Association, "there is a shortage of histo-pathologists and forensic pathologists, few medical schools require students to pass exams in forensic/medico-legal medicine and University Departments of Forensic Pathology/Medicine are few in number".[36]

Thirdly, autopsies are dangerous. Lifting heavy weights, using cutting machines and implements in a wet environment against a background of an increasing incidence of blood-borne diseases raises numerous occupational health and safety risks.

It is against these concerns that the justification for performing internal autopsies must be gauged. It is important to stress that this article is only dealing with coronial autopsies – those coercively

[29] For example, the *Coroners Act 1958* (Qld), s 43(5), provided that a coroner could make a rider "designed to prevent the recurrence of similar occurrences" but also provided in s 43(5A) that "A rider shall not be or deemed to be part of the coroner's findings but it may be recorded if the coroner thinks fit". Cf the *Coroners Act 2003* (Qld), s 3(d), in which the prevention of deaths is elevated as an object of the Act.

[30] The *Macquarie Concise Dictionary* (3rd ed) defines "mutilate" to include "to injure, disfigure or make imperfect by removing or irreparably damaging parts".

[31] Pounder D, "The Coroner Service: A Relic in Need of Reform" (1999) 318 BMJ 1502 (Editorial).

[32] Grisham GA and Turner FA, *Postmortem Procedures* (Elsevier, London, 1979).

[33] Morgagni GB, *The Seats and Causes of Disease Investigated by Anatomy* (translated by Benjamin Alexander, MD), Facsimile of the 1769 London edition (Macmillan, Hafner, New York, 1960).

[34] The range of ethical issues surrounding autopsies is discussed in Lynch M, "The Autopsy: Legal and Ethical Principles" (2002) 34 *Pathology* 67; Australian Health Ethics Committee, *Organs Retained at Autopsy: Ethical and Practical Issues. Advice to the Minister for Health* (2001), http://www.nhmrc.gov.au/_files_nhmrc/file/health_ethics/human/issues/organs.pdf viewed 2 August 2011.

[35] House of Commons, Constitutional Affairs Committee, *Reform of the Coroners' System and Death Certification* (London, 2006), Eighth Report of Session 2005-2006, p 34.

[36] As noted by the British Medical Association (2006), cited in the House of Commons, Constitutional Affairs Committee, n 35, p 47.

undertaken by the state. The circumstance in which family members may consent to a hospital autopsy is an entirely different matter. Indeed, the benefits of utilising coronial autopsies for research and education are a matter of some debate in the literature, with pathologists themselves divided on the ethics of this approach.[37] It might also be argued that the very low level of family objections (just over 3% in Queensland in 2009-2010) indicates that these concerns are overblown.[38] However, a coronial autopsy should not necessarily be undertaken merely because a family does not lodge a formal objection. Informed consent is a problematic concept even when applied to more benign medical procedures – can a patient really understand the magnitude of the risks involved and balance them against the expected benefit?[39]

In the case of an internal autopsy, too often little attempt is made to explain accurately what will occur. The analogy of a surgical operation that is frequently used is far from accurate, as anybody who has attended an autopsy can attest. Similarly, the police officers, or even coronial counsellors who advise family members of the reason for the pathologist wishing to undertake the procedure, are arguably not well placed to ensure family members have an informed understanding of the benefits that will flow to them from undertaking an autopsy – they are rarely able to anticipate what the coroner will conclude without an internal autopsy. Therefore, any consent cannot be said to be informed and accordingly any lack of objection deserves little weight. Rather, it is the coroner authorising the procedure who must be satisfied that it is necessary.

Notwithstanding these concerns, there is a place for internal autopsies in the coronial system, provided they are done for good cause and only to the extent necessary. The rest of this article discusses such issues in detail, specifically analysing what a coroner, when considering an order for an internal autopsy, is seeking to establish or advance via the autopsy.

## To establish cause of death

### *Natural causes*

When deaths by natural causes are certified rather than reported to a coroner, there is only a requirement that the probable cause of death be shown on the certificate.[40] The generally accepted error rate for such certificates when issued in hospitals is around 30%.[41] In Australia, only between 10% and 15% of all deaths are referred to a coroner for investigation – about half these are identified at the outset as being due to natural causes.[42] In Queensland in 2010 6.6% of all deaths were reported to a coroner on the basis that they were due to an unidentified natural cause.[43] If the community is prepared to accept a 30% error rate in relation to the 90 to 95% of natural-causes deaths that are not reported, is it inconsistent to insist on certainty as a justification for the undertaking of internal autopsies in non-suspicious, natural-causes, reportable deaths? If the *probable* cause is sufficient certainty in the deaths that are certified without reference to a coroner, why should a higher standard be used to determine whether an autopsy is required for those that are?

Research supported by the Australian Research Council on Queensland coronial files in 2006 compared the cause of death deduced by non-medically trained researchers who considered only the information contained on the Form 1 – the initial report from police containing information immediately available at the scene – with that identified after autopsy. That process resulted in an error

[37] Carpenter and Tait, n 7.

[38] Barnes, n 24.

[39] Drayton J, "Organ Retention and Bereavement: Family Counselling and the Ethics of Consultation" (unpublished research paper, School of Social Work, University of Queensland, St Lucia, 2010).

[40] *Birth Deaths and Marriages Act 2003* (Qld), s 30(1)(b).

[41] Burton J and Underwood J, "Clinical, Educational and Epidemiological Value of Autopsy" (2007) 369 *The Lancet* 1477.

[42] Barnes, n 24.

[43] Barnes, n 24.

rate in accidental death of 8.4%, in suicide of 0.9% and in natural causes of 18.8%.[44] That level of accuracy sits within the accepted error rate of non-reportable deaths and also highlights the importance of evidence from non-autopsy sources in establishing manner and cause of death. Further, it is likely the error rates recorded by the researchers would be significantly reduced by further investigation before a decision as to whether an internal autopsy was necessary.

Similarly, it is questionable whether an internal autopsy is justified to refine a finding of a natural cause that can be comfortably made without one. For example, who benefits from knowing an elderly individual died from a myocardial infarction rather than the more general ischemic heart disease? Conversely, in the same research noted above, it was found that, after internal autopsy, 22% of the natural-causes deaths were attributed to the all-encompassing "coronary atherosclerosis" or "coronary artery disease". In such cases it is questionable whether the purpose of the coronial autopsy was advanced when in most cases the same result could have been achieved without an internal examination.[45] On the other hand, when an apparently healthy infant or young adult dies unexpectedly, an internal autopsy will usually be warranted to establish the proximate cause of death and to ascertain whether other family members may be at risk of premature death.

It is also questionable whether a coroner is responsible for the accuracy or precision of mortality statistics. These aggregated data can be sought from hospital records and death registries. While accuracy is desirable, it is not clear that an internal autopsy is justified if the general cause of death is otherwise able to be identified, especially when a change in practice would impact on such a small percentage of the natural-causes deaths – only 6.6% of all deaths are reportable natural-causes deaths and only some of that number would be affected.[46] In any event, medical doctors routinely diagnose disease and prescribe treatment based on clinical history, blood tests and non-invasive procedures. Exploratory surgery isn't routinely undertaken to exclude possibilities that haven't been considered likely.

Accordingly, with close attention to the medical records of the deceased and regard to the clinical symptoms witnessed by those with the deceased in the minutes or hours immediately before the death, in many cases the probable cause of death could be ascertained without autopsy. Indeed, this is happening already in Brisbane, with an increasing number of cause of death certificates being issued by pathologists who, in consultation with the coroner, review the deceased person's records and the results of a CT scan before an autopsy order is made.[47]

### *External causes*

In many unnatural deaths, the manner of death will be apparent from the scene and eyewitness accounts. While in such cases an internal autopsy may yield more information, as with all other cases, consideration needs to be directed to the extra information necessary for the coroner's purposes to be achieved. This may best be illustrated by looking at a few common categories of unnatural deaths.

In theory, suspicious deaths do not necessarily and invariably require internal autopsies. However, as suspicious deaths account for less than 2% of reported deaths[48] and as the consequences of compromising a homicide prosecution are so far-reaching for those involved with the case and for the coronial system, it makes sense to accept that in almost all such cases an internal autopsy should be undertaken. That does not mean, however, that all external causes deaths should have a three-cavity autopsy to exclude the possibility of homicide. In most cases the likelihood of homicide is apparent at

[44] Carpenter B, Barnes M, Adkins G, Naylor C, Tait G and Begum N, "The Coronial System in Queensland: The Effects of New Legislation on Decision Making" (2008) 16 JLM 458.

[45] Carpenter et al, n 44.

[46] Queensland Office of the State Coroner, *Annual Report 2009-2010*, http://www.courts.qld.gov.au/1710.htm viewed 2 August 2011.

[47] Carpenter et al, n 44.

[48] Carpenter et al, n 44.

the outset. In cases where it is not, an internal autopsy may certainly be necessary, but only if another cause and manner of death cannot be established to the requisite standard.[49]

In most types of unnatural death investigations, greater reliance on scene, eyewitness and circumstantial evidence can frequently obviate the need for internal autopsies.[50] However, for the reasons discussed earlier, some pathologists seem unwilling to place the same reliance on evidence sourced external to the body. Some take an unduly reductionist position and claim they cannot exclude what they have not looked for, notwithstanding the weight of the external evidence.[51] In many cases, further investigation could sufficiently establish the manner and cause of death without an internal autopsy. The body should be held while statements are urgently taken from the eyewitnesses and an external examination and toxicology can confirm no third-party involvement. Similarly, it is questionable whether an internal autopsy needs to be undertaken on all motor vehicle crash victims. Unexplained crashes by older drivers may warrant internal examinations to look for evidence of strokes or ruptured aneurysms. However, when an apparently healthy young person dies after a high-speed crash, little is to be gained, even less so in the case of passengers. Certainly nothing new is learned from reading an autopsy report which suggests "multiple injuries – MVA" as the 1(a) cause of death, that could not be gleaned from the initial police report.

A review of Queensland coronial files in 2006 demonstrates this point. Certainly, the more complex the finding as to cause of death, the more likely this is to have been the product of an internal autopsy. For example, where the cause of death finding was determined as "head injuries due to MVA", a full internal autopsy was performed in only 58% of cases, and "multiple injuries due to MVA" had a full internal autopsy conducted in 65% of cases. In contrast to this, "haemorrhage due to multiple injuries due to MVA" had a full internal autopsy conducted in 91% of cases and "exsanguinations due to multiple injuries due to MVA" had a full internal autopsy conducted in 83% of cases. Performing internal autopsies will certainly discover more detail about the death under investigation. However, is any further practical value gained by performing an internal autopsy in terms of the finding as to cause of death? In these cases, it would appear not, though the suggestion that such autopsy findings have a prevention function are discussed later in the article.[52]

## Manner of death

Internal autopsies can play an important part in establishing the manner of death. Identifying hidden homicides has always been central to the role of the coroner and pathologists have greatly assisted with this. If, however, wrongful third party involvement can be confidently excluded by other evidence and there is no other reason to undertake an internal autopsy, it is not clear that an internal autopsy should be undertaken "just in case". In all coroners' cases further inquiries could almost always be undertaken but at some point the coroner assesses the available evidence as being sufficient to enable the necessary findings to be made.

The biggest category of unnatural deaths reported to coroners is apparent suicides. An internal autopsy will rarely assist in distinguishing between a suicide, an accident and a homicide. Intent is the key element in suicide findings. It is usually to be inferred from notes or phone messages, previous attempts, triggering events and/or the circumstances of the death. While not suggesting that an internal autopsy would never be warranted, it is sensible to consider all of the other available evidence first. This was made starkly apparent by a recent murder trial concerning a jail hanging. A pathologist had attended the scene and a full internal autopsy was undertaken. A finding of suicide was made. Only when a prisoner who had been in the jail at the time "found God" did he confess to his involvement in

[49] Davidson A, McFarlane J and Clark J, "Differences in Forensic Practice between Scotland and England" (1998) 38(4) *Medicine, Science and the Law* 283.

[50] Pounder D, Jones M and Peschl H, "How Can We Reduce the Number of Coroners' Autopsies? Lessons from Scotland and the Dundee Initiative" (unpublished paper, 2009).

[51] Barnes, n 24.

[52] Carpenter et al, n 44.

the murder.[53] It has also been suggested that an internal autopsy can discover an organic brain disorder that can explain a suicide, reducing the distress of the family. In Queensland since 2003, the investigation of 4,000 suicides has never revealed this outcome through internal autopsy.[54]

## Prevention

The legislation governing coroners in each of the Australian States and Territories and New Zealand requires or invites a coroner investigating a death to consider whether it could be prevented and most also encourage attention to the possibility of improvements generally in public health and safety in circumstances related to, or connected with, those in which the death occurred.[55] Comments or recommendations aimed at reducing risk or effecting other improvements can be included in the coroner's report.

It would be possible to use this aspect of a coroner's jurisdiction to justify the extensive use of internal autopsies. For example, undertaking internal autopsies in all natural-causes deaths and publishing the reports in relation to any unusual findings could contribute to the creation of new knowledge concerning the pathology of disease. Alternatively, providing a copy of the report to a deceased patient's treating doctors would, in many cases, increase their understanding of the disease processes that led to the death, making them more knowledgeable doctors and thus saving the lives of future patients. Taking this line of reasoning to its logical conclusions, conducting autopsies on all reportable deaths would lead to the creation of a longitudinal data set that is likely to provide a rich lode for multiple research projects, some of which, at least, would contribute to improvements in public health and medical practice.

There are a number of problems with this approach. First, in practice, unusual autopsy results are rarely written up and published. Secondly, even though coronial offices create procedures to ensure treating clinicians can easily get access to autopsy reports, they rarely avail themselves of it.[56] In the vast majority of cases, autopsy reports simply lie on the file. And thirdly, higher courts have held that the prevention function is ancillary and subsidiary to the primary function. This means that a coroner can only make inquiries to support findings on the manner and cause of death and cannot make inquiries simply to lay a foundation for preventative recommendations.[57]

Another focus of internal autopsies that could arguably come within the prevention justification relates to the detection of inheritable diseases or conditions. Indeed, some pathologists have gone so far as to suggest that pathologists owe a duty of care to family members to detect and report these conditions.[58] While the practice in Queensland is to willingly make any material gathered during autopsy available to family members for the investigation of such conditions, it is not clear that such information should influence the decision as to the extent of the autopsy.[59] In cases that might involve such considerations, the circumstances of the death, eg, the sudden death of an apparently healthy teenager, are likely to mean that an internal autopsy will usually be undertaken.. In those cases, an indication that the death may have been caused by a genetic condition is relevant to the cause of death and would, of course, be shared with the family and tissue made available to search for relevant gene markers. However, it does not suggest that coroners should be ordering internal autopsies in cases where findings as to manner and cause of death could be made without such an examination, solely in order to look for or exclude such information.

[53] Barnes, n 24.

[54] Barnes, n 24.

[55] For example, see the *Coroners Act 2003* (Qld), ss 3(d), 46; the *Coroners Act 2006* (NZ), ss 3(1)(b), 57(3); the *Coroners Act 1996* (WA), ss 25(2), 27(3).

[56] Barnes, n 24.

[57] *Harmsworth v State Coroner* [1989] VR 989.

[58] Ong B and Milne N, "Limited Post-mortem Examination. An Alternative and Viable Way to Avoid Full Examination?" (2007) 3 *Forensic Science and Medical Pathology* 188.

[59] Barnes, n 24.

## LIMITING INTERNAL AUTOPSIES

As a case in point, there are three full-time coroners in Brisbane and they have been actively trying to ensure that the autopsy ordered is no more invasive than is necessary for the case in question. The results of this approach can be contrasted with the rest of the State where part-time coroners and less experienced full-time coroners are less inclined to resist pathologists' urging to order full internal autopsies. See Tables 1 and 2.

**TABLE 1 All deaths reported in Queensland, 2009-2010**

| | Deaths reported | Determined not reportable | No autopsy needed | Autopsy needed |
|---|---|---|---|---|
| State | 4,466 | 735 | 732 | 2,999 (67.15%) |
| Brisbane | 1,859 | 445 | 482 | 932 (50.13%) |
| Non-Brisbane | 2,607 | 290 | 250 | 2,067 (79.29%) |

**TABLE 2 Autopsy types in Queensland, 2009-2010**

| | External only | Partial internal | Three-cavity autopsy |
|---|---|---|---|
| State | 349 (11.6%) | 376 (12.53%) | 2,274 (75.82%) |
| Brisbane | 194 (20.8) | 207 (22.2%) | 531 (57%) |
| Non-Brisbane | 155 (7.5%) | 169 (8.18%) | 1,743 (84.33%) |

Comparison with other jurisdictions is difficult because of different criteria for reporting deaths to coroners. However, a data set from Dundee, Scotland, where the chief forensic pathologist has views similar to those expressed in this article, shows remarkable trends in the reduction of internal autopsies in that centre with external autopsies increasing from 15% to 50% of cases between 1988 and 2007.[60]

## CONCLUSIONS

In most jurisdictions in Australia and New Zealand, unnecessary internal autopsies are being undertaken: "unnecessary" in the sense that they are not required to discover information that the investigating coroner needs to make the required findings; "unnecessary" in the sense that they desecrate the body for insufficient cause in circumstances where the human and financial resources consumed could be better deployed in other parts of the coronial system. This is happening because of the different traditions and epistemologies of coroners and pathologists and a lack of consensus about what coronial investigations should be seeking to establish.

Coroners began as, and remain, an integral part of civil society. They value human source information and are willing to deduce conclusions from their experience with predictable human behaviour. They practise therapeutic jurisprudence and accordingly they are disinclined to authorise procedures that they suspect key stakeholders, such as family members, would be distressed by were they fully informed.

In most coronial cases, further inquiries could be undertaken, but at some point the coroner assesses the available evidence as being sufficient to enable the necessary findings to be made. For example, whenever an inquest is conducted, information is discovered that was previously unknown. That does not lead coroners to conclude that all cases should go to inquest.

Pathologists place greater weight on the scientific evidence that they can source from the body at autopsy. They have much less regard for the evidence, opinions and views of witnesses or family members. They strive for scientific certainty whenever possible. Some pathologists believe they can

[60] Pounder et al, n 50.

not reach a conclusion about likely cause of death without conducting a three-cavity autopsy because many of their conclusions are diagnoses of exclusion. Because pathologists so highly value the information that can be gleaned from an internal autopsy, they can more easily conclude that the resulting mutilation of the body can be justified, even though the family has not given truly informed consent.

The history of the coronial system in Australia and New Zealand has meant that, until recently, coroners have not been in a position to effectively challenge pathologists' views of the necessity for internal autopsies. That is changing. Coroners are becoming more active and many pathologists are reviewing their position about these matters. The use of newer technologies, more modern investigative methods and more active case management of matters by full-time coroners have diminished the need to rely so heavily on internal autopsies.

Moreover, the idea that if more forensic pathologists were to more fully embrace the principles of evidence-based medicine they would lessen their heavy reliance on internal autopsies is not an isolated one. As Clark[61] has identified:

> Many doctors have come to regard the autopsy as a crude and largely outmoded procedure, with forensic pathologists instead becoming what has been called the "last stronghold of the autopsy". But coroners' pathologists have been criticised for "seeing" disease and death in too narrowly medical a frame of reference, while widespread condemnation of the unauthorised retention of organs and tissue samples obtained at autopsy threatens to undermine public consent for the procedure.

The point here is not to marginalise forensic pathologists in the coronial jurisdiction. Rather, it is to suggest that their expertise could be better deployed by more intensively reviewing case material before a decision as to whether an internal autopsy is needed, is made by the coroner. This approach has been adopted in Melbourne and it has resulted in a steep decline in the number of internal autopsies.[62] Currently, in Queensland and other Australian jurisdictions, the focus is on releasing the body as soon as possible.[63] However, if gathering more information in the days after the death means an unnecessary internal autopsy can be avoided, the delay occasioned by making those inquiries is justified. Such an approach would help redress another more serious delay, namely that encountered when obtaining autopsy reports. In 2009-2010 in Queensland, 55% of those reports were received within three months but 20% took more than six months. Reducing the number of autopsies undertaken is likely to mean that most reports are received more quickly.[64] It would also enable pathologists to devote more time to intensively investigating other matters. In particular, their expertise in reviewing hospital deaths would be of great assistance to coroners.[65]

Coroners and pathologists need to engage in greater discussion about what it is that coroners and bereaved families actually need from coronial investigations. This conversation would give greater precision to terms such as "manner and cause of death".

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[61] Clark MJ, "Autopsy" (2005) 366 *The Lancet* 1767.

[62] Victorian Office of the State Coroner, *Annual Report 2008-2009*.

[63] Barnes, n 24.

[64] Queensland Office of the State Coroner, n 46.

[65] It has previously been recommended that the Office of the State Coroner be funded to engage a full-time medical officer to advise coroners in relation to such matters: see Queensland Hospitals Public Commission of Inquiry, *Report* (2005) p 536. However, this has not occurred and so forensic pathologists remain a valuable resource.