The Royal College of Pathologists
Pathology: the science behind the cure

National Medical Examiner's Good Practice Series No. 5

Post-mortem examinations

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Contents

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About the National Medical Examiner's Good Practice Series

Medical examiners – senior doctors providing independent scrutiny of non-coronial deaths in England and Wales – are a relatively recent development.

While there is extensive guidance available on a wide range of topics for NHS and public sector staff, the National Medical Examiner's Good Practice Series highlights how medical examiners and medical examiner officers can better meet the needs of local communities and work more effectively with colleagues and partners.

The Good Practice Series is a topical collection of focused summary documents, designed to be easily read and digested by busy front-line staff, with links to further reading, guidance and support.

Introduction

A post-mortem examination is an examination of a body made after death, often but not always for the purpose of ascertaining the cause of death. The term ‘post-mortem examination’ is not defined and may include non-invasive examinations. Post-mortem examinations should be performed by a suitable practitioner, qualified and competent to carry out the type of examination required.[1]

The majority of post-mortem examinations are commissioned by coroners. It is not part of the role of medical examiners to commission or conduct post-mortem examinations, and they should not encroach on coroners’ judicial prerogative to determine when they think a post-mortem examination is required. However, the medical examiner system may impact further by reducing the number of unnecessary post-mortem examinations that have occurred in recent years, by increasing the appropriateness of referrals made to coroners. The medical examiner scrutiny process will improve the accuracy and consistency of recorded causes of death, which should reduce deaths notified to a coroner because medical certificates of cause of death (MCCDs) have been rejected by registration services. Coroners will also benefit from medical examiners as a resource for medical advice.

Conversely, as the medical examiner system beds in, it is likely that an increased proportion of deaths notified to coroners will be complex and may require a post-mortem examination to address issues arising from scrutiny to a varying degree.

[1] UK Government. Coroners and Justice Act 2009, section 14. Available at: www.legislation.gov.uk/ukpga/2009/25/section/14

Recommendations for medical examiners – post-mortem examinations

Medical examiners should:

1. assist doctors completing MCCDs to identify and record accurate causes of death, as failure to identify causes of death can lead to increased numbers of referrals to coroners and in some cases to unnecessary post-mortem examinations

2. build relationships and agree processes with pathologists, because pathologists are likely to be the best people to liaise with the coroner regarding post-mortem examinations, with expertise which is not shared by most medical examiners

3. ensure they understand the availability of consent post-mortem examinations locally and the process for requesting them. They should ensure they are aware of resource implications, as sometimes there is a fee.

4. advise next of kin, when appropriate and/or when asked, about the types of post-mortem examinations available locally, and clarify to bereaved people that post-mortem examinations are carried out by pathologists rather than medical examiners. Where consented post-mortem examinations are available, these can only be done if the cause of death is certifiable and there is no reason to suspect the death was ‘unnatural’. If the cause of death is not known the coroner must be notified.

5. where feasible, build on and support existing relationships and ways of working between coroners and pathologists while maintaining the separation between independent coronial and medical examiner processes

6. if the death is notifiable to the coroner, medical examiners should inform the coroner if relatives of the deceased are likely to have concerns about a post-mortem examination, where it is possible or likely the coroner may request one

7. continue to provide advice regarding deaths that have been notified to coroners, particularly where providing independent medical advice may avoid unnecessary post-mortem examinations.

Context and background

Coroners' post-mortem examinations

The Notification of Deaths Regulations 2019 set out the types of death that should be referred to a coroner. Many deaths requiring notification will bypass the medical examiner service. However, a proportion of deaths that undergo medical examiner scrutiny will require a coroner's referral. Such cases may include sudden and unexpected natural deaths where the cause of death is uncertain, or deaths following a procedure or an unnatural event. When a death is notified to a coroner, the coroner may decide a post-mortem examination is necessary.[2] The Chief Coroner has issued guidance on the use of post-mortem imaging (adults) and post-mortem examinations including second post-mortem examinations. The latter guidance paper notes that 'While a coroner has legal control over the body of a deceased person, it is for the coroner to decide whether to commission a first or subsequent post-mortem examination and it is for the coroner to decide whether to permit a second examination of the body on the instruction of an interested party. Despite there being a widespread misconception (particularly in homicide cases), there is no automatic right to a second post-mortem examination and requests should be scrutinised rigorously by the coroner on a case-by-case basis.'

The past 20 years have seen a steady decrease in the number of post-mortem examinations requested by coroners. Of all registered deaths in 2017, 43% were reported to coroners and 37% of these referrals underwent a post-mortem examination,[3] down from 59% having a post-mortem examination in 1997.[4] There are multiple causes for this downward trend including a desire by coroners to reduce the number of unnecessary post-mortem examinations. There has been an increase in the number of inquests where no post-mortem examination took place, for example in those cases where investigations performed in life provide a cause for the death, such as imaging of the brain showing a catastrophic head injury.

Consented post-mortem examinations

Consented (non-coronial) post-mortem examinations are much less commonly performed than coroner's cases and can only be carried out with consent from a person in an appropriate qualifying relationship to the deceased. They can be requested by either the care-providing doctor of the deceased or the bereaved, although the bereaved must give consent for the procedure. However, the public perception of what can be achieved through post-mortem examination may not be realistic and pathologists may be reluctant to proceed without concurrent clinical support. In cases where an MCCD can be issued, a consented post-mortem examination may help to refine a cause of death or provide further and more detailed information about the final illness or cause of death in those cases where the threshold for successful certification has been reached. An example might be a death due to disseminated cancer, where a tissue diagnosis had not been established in life. Consented post-mortem examinations can also support medical research and tissue banks. Consented post-mortem examinations cannot be undertaken when the death has been notified to the coroner and taken for investigation.

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[2] UK Government. Coroners and Justice Act 2009, section 14. Available at: www.legislation.gov.uk/ukpga/2009/25/section/14

[3] UK Government. Coroners Statistics 2017. Available at: www.gov.uk/government/statistics/coroners-statistics-2017

[4] Dorries C. *Coroners' Courts. A Guide to Law and Practice (2nd edition).* Oxford University Press, 2004.

Alternative options to traditional post-mortem examinations

A traditional invasive post-mortem examination involves the body cavities being examined internally to enable the removal and careful examination of the major organs. The bereaved may find the thought of a loved one's body being examined internally in this way distressing.

There have been calls to find alternative, less intrusive means for establishing the cause of death, especially from communities who have religious or cultural objections to an invasive autopsy.[5] While a family cannot prevent a coroner's post-mortem examination from taking place, they may object to a traditional invasive post-mortem examination and request a minimally invasive/radiological post-mortem examination.

Radiographic imaging has been used for a long time as an adjunct to traditional invasive post-mortem examinations to help identify foreign bodies and assess bone fractures.[6] The use of post-mortem cross-sectional imaging using computed tomography or magnetic resonance imaging has been shown to enhance or even replace traditional post-mortem examinations in a number of circumstances.[6] A shortage of practising post-mortem pathologists across the UK has also contributed to the expansion of post-mortem imaging services.

Many common natural causes of death can be established using cross-sectional imaging in combination with an external examination and assessment of clinical history and circumstance of death,[7] much of which can be provided from medical examiner scrutiny where applicable. Such causes include intracranial haemorrhage, disseminated malignancy, pneumonia and intra-abdominal perforation.

For those pathologies where unenhanced cross-sectional radiology cannot readily diagnose natural causes of death such as sepsis, pulmonary emboli, intestinal ischaemia and inflammatory conditions, it can help target and be supplemented by minimally invasive procedures such as radiologically guided core biopsies for histology or microbiological assessment.[6] The use of angiography can also supplement and improve the accuracy of post-mortem cross-sectional imaging in those deaths secondary to vascular pathologies.[6]

Post-mortem imaging, alongside toxicology of body fluids (blood, urine and vitreous humour) can often reduce the need for traditional invasive post-mortem examinations in suspected drug or substance-related deaths.

At present, expertise in interpretation resides in a small number of centres across the UK[6] and demand for this service is increasing. This is encouraging and is in line with the aims of the medical examiner system of putting the bereaved at the heart of the process.

However, there is an important caveat to non-invasive post-mortem examinations. In some cases, it may not be possible to identify the cause of death through non-invasive means. In this situation the coroner will consider whether to request a traditional invasive post-mortem examination.

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[5] Rutty GN. Are autopsies necessary? The role of computed tomography as a possible alternative to invasive autopsies. *Rechtsmedizin* 2007;17:21–28.

[6] Thali MJ, Viner MD, Brogdon BG (eds). *Brogdon's Forensic Radiology (2nd edition).* CRC Press, 2011.

[7] Royal College of Pathologists. *Guidelines for post mortem cross-sectional imaging in adults for non-forensic deaths.* Available at: G182-Guidelines-for-post mortem-cross-sectional-imagingFor-Publication.pdf

Find out more

- UK Government. Coroners and Justice Act 2009, section 14. www.legislation.gov.uk/ukpga/2009/25/section/14
- Royal College of Pathologists. *Guidelines for post-mortem cross-sectional imaging in adults for non-forensic deaths*. Available at: www.rcpath.org/uploads/assets/666dbf95-de06-44ad-89c3b4e5f1ceab79/G182-Guidelines-for-post-mortem-cross-sectional-imagingFor-Publication.pdf
- Royal College of Pathologists. *Information about post-mortems for friends and relatives*. Available at: www.rcpath.org/discover-pathology/what-is-pathology/information-about-post-mortems-for-friends-and-relatives-.html
- UK Government. *Coroners Statistics 2017*. Available at: www.gov.uk/government/statistics/coroners-statistics-2017

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Annex – Coroners and Justice Act 2009

This is an excerpt from legislation and related explanatory notes.

14 Post-mortem examinations

(1) A senior coroner may request a suitable practitioner to make a post-mortem examination of a body if—

(a) the coroner is responsible for conducting an investigation under this Part into the death of the person in question, or

(b) a post-mortem examination is necessary to enable the coroner to decide whether the death is one into which the coroner has a duty under section 1(1) to conduct an investigation.

(2) A request under subsection (1) may specify the kind of examination to be made.

(3) For the purposes of subsection (1) a person is a suitable practitioner if he or she—

(a) is a registered medical practitioner, or

(b) in a case where a particular kind of examination is requested, a practitioner of a description designated by the Chief Coroner as suitable to make examinations of that kind.

(4) Where a person informs the senior coroner that, in the informant's opinion, death was caused wholly or partly by the improper or negligent treatment of a registered medical practitioner or other person, that practitioner or other person—

(a) must not make, or assist at, an examination under this section of the body, but

(b) is entitled to be represented at such an examination. This subsection has no effect as regards a post-mortem examination already made.

(5) A person who makes a post-mortem examination under this section must as soon as practicable report the result of the examination to the senior coroner in whatever form the coroner requires.

Explanatory notes

Section 14: Post-mortem examinations

134. This section sets out the arrangements for ordering post-mortem examinations, and makes slightly different provision from that contained in sections 19 and 20 of the 1988 Act.

135. *Subsection (1)* gives a senior coroner power to ask a suitable practitioner to make a post-mortem examination of a body if the senior coroner is either responsible for conducting an investigation into the death or a post-mortem examination will enable the senior coroner to decide if he or she has a duty under section 1 to conduct an investigation. This may be relevant where it is not clear whether a death occurred as a result of a notifiable disease or whether a child was stillborn – where, for example, an infant's body is found and it is not clear whether it ever had independent life. Where it is known or established that a child was stillborn, the senior coroner will have no further power to carry out an investigation.

136. The term “post-mortem examination” is not defined but it will include any examination made of the deceased including non-invasive examinations, for example, using Magnetic Resonance Imaging (MRI) scans.

137. The 1988 Act makes a distinction between post-mortem and “special” examinations (the latter are a more specific kind of post-mortem examination and would include toxicology tests to establish whether, for example, alcohol or drugs were in the bloodstream). The Act removes this distinction, enabling the senior coroner to detail the kind of examination he or she would like the practitioner to make – for example, to ask for a particular examination of a tissue or organ which seems most relevant to the cause of death if a full post-mortem is not considered necessary *(subsection (2)).*

138. *Subsection (3)* defines a suitable practitioner as either a registered medical practitioner or, where a particular form of examination is required, a practitioner who is of a type or description the Chief Coroner has designated as suitably qualified and competent to carry out such examinations.

139. *Subsection (4)* ensures that any medical practitioner about whom there are allegations in relation to the death is not able to carry out the examination of the body, although such a person may be represented at an examination.

140. *Subsection (5)* requires the person making the examination to report the result to the senior coroner as soon as is practicable.