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Impact of Postmortem CT on Coronial Autopsies: review of a Digital Autopsy Service

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The use of postmortem CT (PMCT) can reduce the requirement for traditional invasive Coroner's autopsy and demonstrate injuries not detected by dissection. Here we review the first 300 cases in our digital autopsy service in order to determine the impact of PM imaging on autopsy practice.

Deaths were referred from 24 Coroners. All cases had PMCT, followed by angiography and invasive autopsy as required. 272 were at the request of families who objected to traditional invasive Coroner's autopsy, and 28 for police to supplement PM dissection in forensic investigation, including 4 paediatric autopsies. Excluding these forensic/trauma cases, a cause of death was issued in 222 (82%) on the basis of PMCT imaging ± angiography without invasive autopsy. 104 (38%) required CT alone and 118 (43%) CT + angiography. 11% of deaths occurred in hospital and there was a significantly higher requirement for invasive examination in this group when compared to deaths in the community (38% vs 16%,  $p=0.05$ ). There was also a greater requirement for invasive autopsy in younger adults. In the age groups <50, 50-70 and >70 years, an invasive procedure was carried out in 31%, 24% and 13% respectively,  $p=0.01$ . The commonest causes of death were cardiac disease (49%), followed by non-coronary arterial disease (15%) and respiratory disease (12%).

The use of PMCT with angiography results in an 82% reduction in the number of invasive Coroner's autopsies. Hospital deaths and deaths in young adults have a higher requirement for an invasive procedure, reflecting a different spectrum of causes of death.