



### E24 **Virtopsy<sup>®</sup>: Its Associated Legal Parameters and Impact**

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After attending this presentation, attendees will receive an overview about the legal implications of Virtopsy<sup>®</sup> and postmortem computed tomography (pmCT) or magnetic resonance imaging (pmMR) in Australian, Swiss, and U.S. American legislation.

This presentation will impact the forensic science community by emphasizing the necessity to legally qualify that state-of-the-art procedure in forensic medicine and serving as its (worldwide) legal approach.

The Virtopsy<sup>®</sup> project was launched at the Institute of Forensic Medicine in Bern, Switzerland, more than ten years ago with the goal of replacing or supplementing traditional forensic autopsy examination techniques with a multi-modality approach comprising three dimensional photogrammetry-based optical body surface scanning (3D surface scan), pmCT, pmMR, pmCT-guided angiography, and targeted tissue sampling by pmCT-guided biopsy. Virtopsy<sup>®</sup> is used to document cases of sudden or unexpected death of (unknown cause) or unnatural deaths (homicides, suicides, accidents, medical malpractice) and identification of bodies. Since that time pmCT scanning (and in some centers pmMR) has been incrementally introduced in many forensic death investigation facilities all over the world (e.g., Australia, Denmark, Germany, Japan, United States) and now assumes an important role in case management protocols. Both Virtopsy<sup>®</sup> and pmCT (or pmMR) scanning allow more sophisticated approaches to death investigation and in many cases may obviate the need for autopsy. Advantages of these imaging technologies include: the ability in some circumstances to determine a cause of death without dissection, visualization of body areas not easily examined at autopsy (e.g., pelvis and base of skull), safer examination of contaminated or infected bodies (e.g., tuberculosis), transmissibility of data for (second) opinions, a permanent digital record of the state of a body at the time of presentation, and 3D pictorial demonstrations of complex pathological processes for evidentiary/court purposes. CT, MRI, and 3D surface scan have also found application in the forensic medical setting of several institutes where they have been used to record and analyze injury patterns, examine areas of trauma (e.g., to the neck in cases of attempted strangulation) and digitally record crime scenes.

The introduction of novel imaging/diagnostic techniques into the time-honored and arguably conservative legal processes associated with forensic death investigation may have interesting and unanticipated consequences although literature on this particular area is sparse. Specific legislative provisions are also uncommon. While traditional court processes such as coronial hearings and criminal prosecutions are increasingly utilizing imaging data derived from Virtopsy<sup>®</sup> or similar technologies, in the English or German speaking world, no court decrees or published rulings relating specifically to forensic imaging have emerged to date.

This presentation will consider legal issues relating to the current practice of Virtopsy<sup>®</sup> and pmCT (or pmMR) in a comparative study of three jurisdictions (Australia, Switzerland, and United States), with specific reference to statutory interpretation in different fields of law including criminal procedure and coronial legislation. In conclusion, it will examine whether this new technology is satisfactorily accommodated by current law or whether amendments might be necessary. Thus, the legal issue whether Virtopsy<sup>®</sup> and pmCT/MR can be qualified as an inspection (external examination) – to triage if an autopsy should be done – or as an autopsy (adjunct) is an important part of that legal analysis.

**Virtopsy<sup>®</sup>, Legal Bases, Australian, Swiss and U.S.-American Legislation**