The Australian National Coronial Information System: Limited By Quality of Data

INVITED REVIEW

National Coronial Information System: Epidemiology and the Coroner in Australia

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ABSTRACT

The National Coronial Information System (NCIS) is the world's first national Internet-based database of coronial information. It was established in Australia following the recognition by coroners that their mandate for public health and safety could be improved if they could identify previous similar deaths. The NCIS is funded from state, territory, and commonwealth government agencies and overseen by the NCIS Board of Management. A team of ten staff manage the day-to-day operation of the system.

The NCIS enables the rapid identification of up-to-date information on deaths investigated by the coroners' jurisdictions in Australia (from July 2000) and New Zealand (from July 2007). It is accessible to death investigators (coroners; forensic, medical, and scientific staff; and police) to assist with death investigation and approved third parties (e.g., researchers). The NCIS contains demographic information about the deceased, contextual information about the circumstances in which the death occurred, the cause and manner of death, and four full text reports generated during the investigation.

The NCIS contains information on over 328 000 completed coroners' death investigations across Australia and New Zealand. Approximately 350 death investigators are registered to access the data for their ongoing death investigations, and 235 third party users are registered to utilize the data set in their research. In addition to the utility of the NCIS, this paper describes the rationale and governance structure of the NCIS, the information technology infrastructure, data set, quality assurance framework, and contribution to death and injury prevention. *Acad Forensic Pathol.* 2017 7(4): 582-590

TO THE EDITOR

The Australian National Coronial Information System (NCIS) database provides a valuable resource (1). However, as for all databases, it is limited by the information that is provided to it (2). Our recent experience accessing the NCIS database highlighted the ability to extract data was limited by ethics requirements to access jurisdictions and data not having been uploaded, but the main failings resulted from a lack of standardization of postmortem examination reports between and within coronial jurisdictions.

Australia has eight coronial jurisdictions (3). Traditionally, a “three-cavity” examination is performed, which requires examining the contents of the cranial, thoracic, and abdominopelvic cavities in addition to the neck and any other structures relevant to determining the cause of death. Pathologists regard this

as a “full” postmortem examination. If the extent of the postmortem examination is restricted (e.g., being confined to one cavity), such examinations are regarded as “partial” or “limited” by pathologists (3). An examination may be external only. Our hypothesis was that changes to coronial legislation and approaches to the postmortem examination in Australia (3) would result in alteration in the proportion of full, partial, and external-only examinations over time and that this information could be extracted from the NCIS database. However, the type of postmortem examination (full, partial, or external) is not explicitly coded in the NCIS database. Since the NCIS system allows searching of postmortem reports by words and phrases, a search strategy to extract information was tested. Approval was obtained from the Human Research Ethics Committee (H-2014-182) and the Justice Human Research Ethics Committee (M0286) to access the NCIS archived postmortem examination reports to identify

phrases that indicated whether an external, partial, or full examination had been performed so that these phrases could then be used for searching. One jurisdiction could not be searched, as data had not been uploaded when this study was performed in 2015. Data for one jurisdiction could not be accessed without a further ethics application. In one jurisdiction, phrases that indicated what type of examination had been performed were not used consistently. Even in jurisdictions for which phrase searches could reliably identify cases that had undergone full (three-cavity) postmortem internal examination, it was not possible to determine if a limited examination comprised a partial dissection or external examination only.

The failure of phrase searching to extract data relevant to terms of type of postmortem examination appeared to mostly result from a lack of consistent terminology in postmortem examination reports between different jurisdictions and even within the same jurisdiction. Although coding could circumvent this problem, coding is not without the potential to produce inaccura-

cies (2). National standardization of postmortem reports would significantly enhance the potential benefit of the NCIS. Standardization of reporting could assist future studies using the NCIS, such as assessing the impact of computed tomography (CT) imaging, currently used in many centers to assist in determining what type of postmortem examination is required (4).

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INFORMATION

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