Coroners’ recommendations about healthcare-related deaths as a potential tool for improving patient safety and quality of care

Jennifer Moore

Abstract

Aims To describe and investigate the nature, recipients and preventive potential of New Zealand coroners’ recommendations from 1 July 2007–30 June 2012.

Method (1) A retrospective study of coroners’ recommendations during the study period was undertaken. (2) Interviews with coroners, recipients of recommendations and interested parties were conducted.

Results There were 607 coronial inquiries that resulted in 1644 recommendations. There were 309 recipients of coroners’ recommendations. Government organisations received the highest proportion of recommendations (121/309). Not for profit organisations received 67 recommendations, for profit organisations received 44 recommendations and individuals received 5 recommendations. There were 72 untargeted recommendations that did not specify an identifiable organisation. The Ministry of Health received the second-highest proportion of coroners’ recommendations. Transport accidents, drowning, intentional self-harm and complications of medical or surgical care were the main underlying causes of death categories investigated by coroners. Fifty-eight of the 607 inquiries involved complications of medical or surgical care. The 123 interview participants reported that there have been improvements in coronial recommendations since the introduction of the Coroners Act 2006, but that the prophylactic and patient safety potential of recommendations is not being maximised.

Conclusion Coronial investigations provide external insight into the way that our health system works and recommendations can be used as a tool to learn from preventable deaths. Given that this was the first New Zealand study of coroners’ recommendations since the introduction of the Act, more research is needed to corroborate these findings.

Coroners have been described as “public health officials” because of their statutory preventive functions.1 One of the main goals of the New Zealand (NZ) Courts Minister’s current review of the coronial system is to “help improve public safety and reduce unnecessary deaths.”2 The NZ Coroners Act 2006 provides the legislative framework for the operation of the coronial jurisdiction.
The purpose of the Act is to prevent deaths and promote justice through:

- Investigations, and the identification of the causes and circumstances of sudden and unexplained deaths, or deaths in special circumstances and;
- The making of specified recommendations or comments that, if drawn to public attention, may reduce the chance of occurrence of other deaths in circumstances similar to those in which those deaths occurred.\(^3\)

NZ coroners are lawyers appointed as judicial officers.\(^4\) NZ’s 16 coroners and the Chief Coroner investigate sudden, unnatural and violent deaths.\(^5\) There are approximately 29,000 deaths in NZ per year.\(^6\) About 20% of those must be reported to the coroner.\(^7\)

Deaths that “must” be reported under the Coroners Act 2006 include deaths:

- Without known cause, suicide, or unnatural or violent.
- For which no doctor’s certificate is given.
- During medical, surgical, or dental operation, treatment, etc.
- In official custody or care.\(^5\)

Sections 13(1)(c) and 13(1)(d) include numerous subsections. For example, reportable deaths under s 13(1)(c)(iv) that occur “during medical, surgical, or dental operation, treatment etc” include “every death…that occurred while that person was affected by an anaesthetic.”\(^5\)

Section 63 of the Coroners Act 2006 states that coroners can decide whether to open and conduct an inquiry and, in doing so, they must have regard to several matters such as whether the death “appears to have been unnatural or violent” and “the existence and extent of any allegations, rumours, suspicions, or public concern, about the death…”

Pursuant to section 80 of the Coroners Act 2006, a coroner who decides to open an inquiry may decide to hold an inquest or undertake a chambers (“on the papers”) investigation. However, if the death appears to have occurred in official custody or care (as defined in section 9) the coroner “must” hold an inquest.

Pursuant to section 14 of the Coroners Act 2006, a person who learns of a death to which section 13 applies must report that death to a member of the police as soon as practicable. “A person” in section 14 includes medical practitioners and other health professionals who are aware of section 13 reportable deaths.

Families who lose loved ones to preventable death hope that coroners’ findings and recommendations will “save a life.”\(^8\) Complaints are voiced by coroners and families when organisations that receive coroners’ recommendations do not implement them.\(^9\) However, can all coroners’ recommendations about healthcare contribute to patient safety initiatives? What is the nature of NZ coroners’ recommendations and who are the recipients?

Coronial recommendations are “an increasingly important aspect of inquests”.\(^10\) Given the high public profile of coroners, it is surprising that little is known about coroners’ decision making or their recommendations.\(^11-16\)
Although scientific researchers often use coronial data, research about coroners, their procedures and recommendations is recent. Research in Australia and the UK has quantified the frequency of coroners’ recommendations, provided legal and forensic descriptions of death investigations, analysis of families’ experiences of inquests and examined the implementation of recommendations about the deaths of Aboriginal people. The difficulty of accessing full coroners’ findings in NZ is a barrier to conducting research and informing patient safety initiatives.

Patient safety and quality of care could be improved by drawing from a variety of data sources, including hospitals’ internal reports, patients’ complaints and coronial data. According to a South Australian study about coroners’ recommendations into healthcare-related deaths, “coronial findings provide a wealth of insight into circumstances behind medical misadventure, but to date they have remained a largely untapped source of knowledge.”

Coronial data has been used to try to improve quality of care and patient safety in jurisdictions such as Australia and England. There is arguably a place for inquiries by coroners where external scrutiny of health service quality is necessary.

Methods

Ethics—Ethics approval for this study was granted by the University of Otago Human Participants Research Ethics Committee in May 2012.

Coroners’ recommendations—The study population comprised deaths reported to, and investigated by, the Coronial Services of NZ (CSNZ) for the study period, where one or more recommendations were made by coroners in their findings. The 1 July 2007 was chosen as the study period start date because that is the date that the Coroners Act 2006 came into force.

The full coronial findings were read. The text of each coronial recommendation was extracted and entered into Microsoft Excel. An example of a coroner’s recommendation is:

That the Ministry of Health communications and guidelines regarding influenza-like illness, whether routine or in response to an influenza outbreak, include the caution that other illness, notably bacterial sepsis, may present with similar symptomology as influenza. In the absence of a cough, sore throat, a differential diagnosis of influenza-like illness should also include possible bacterial sepsis until proven otherwise.

Data analysis of coroners’ recommendations—The data in Excel was checked for errors using a custom-designed computer script. The data analysis procedure included, broadly, assessment of the:

- Number of coroners’ recommendations;
- Recipients of recommendations;
- Organisations’ responses to recommendations;
- Number of coroners’ references to previous, similar cases.

Interviews—The interview schedules for coroners, organisations and interested parties were piloted on two key informants before the guiding questions and themes were finalised. With the participants’ permission, interviews were audio-taped. The grounded theory strategy of theoretical sampling was used.

Interviews with coroners—All practising coroners (17) were emailed an introductory letter inviting them to participate in the study. Three retired coroners were also emailed a letter inviting them to participate in the research. The interviews were semi-structured, one-on-one, in-person and lasted between 50 minutes and 2½ hours. Coroners were asked questions about their formulation of recommendations, identification of recipients, consultation with stakeholders, law reform options, and the preventive potential of recommendations.

Interviews with organisations and interested parties—232 organisations that were sent coroners’ recommendations were identified in the study period. Recruitment letters were sent to senior individuals from all these organisations.
The interviews with organisations and interested parties were semi-structured and lasted between 40 minutes to 2½ hours. Fifteen interviews were conducted on the telephone, while the remaining 75 were in-person interviews.

After learning about the research in the media or from research participants, seven interested parties contacted the researcher. One interested party was approached using snowball sampling after referrals from three other participants. The participant who was contacted by the researcher was recruited via an introductory letter and email follow up. In order to avoid reliance on the self-selection process of the interested parties, criteria for selecting participants was used.

Recipients were asked questions about the recommendations they had received, reasons for non-implementation or implementation of recommendations, preventive potential of recommendations and law reform options.

**Data analysis of interviews**—Grounded theory, thematic and narrative approaches was used to analyse this study’s interview data. The structured data analysis process began with a line-by-line analysis of the transcribed interviews. Patterns of commonality and cases that “didn’t fit” were noted. Axial coding was used to make connections between the categories.

**Results**

Not all the findings are discussed because the focus of this article is coroners’ recommendations about healthcare-related deaths.

**Coroners’ recommendations**—During the study period, there were 607 coronial inquiries which resulted in 1644 recommendations (Figure 1). Fifty-nine percent of these inquiries were inquests (public hearings in Court) and 41% were chambers findings (“on the papers”).

**Figure 1. Summary of coronial investigations and recommendations during the study period**

The total number of recommendations sent to recipients was 2,040 because coroners made single or multiple recommendations to one or more recipients (Figure 1).
There were four main scenarios for the analysis of recommendations directed to recipients. First, a coroner may direct a single recommendation to a single recipient such as the Royal NZ College of GPs. Second, a coroner may direct a single recommendation to multiple recipients such as the Ministry of Health, the NZ Nurses’ Organisation and Plunket. Third, a coroner may issue multiple recommendations (e.g. 10) to a single recipient such as ACC. Finally, a coroner may issue multiple recommendations to multiple recipients. For example, the coroner may formulate five recommendations, two of which are directed to the Canterbury District Health Board, two are directed to the National Addiction Centre and the other one is directed to the Health Quality Safety Commission.

The underlying cause of death categories that the coroners investigated during the study period are described in Figure 2.

**Figure 2. Underlying causes of death categories investigated by NZ coroners, 1 July 2007–30 June 2012**

Fifty-eight of the 607 coronial inquiries concerned deaths attributed to complications of medical and/or surgical care (Figure 2).

324 of the 1644 coronial recommendations were identical repeated recommendations (Figure 3).
Figure 3. Summary of coronial investigations, unique and repeated recommendations, 1 July 2007–30 June 2012

The underlying cause of death categories that attracted the greatest number of identical repeated recommendations are described in Figure 4.

This research adapted Bugeja’s definition of ‘original or repeated recommendation’. An ‘original recommendation’ was one that was made only once in the study period. A ‘repeated recommendation’ was one with identical wording to another recommendation in a different coronial finding.

Figure 4: Summary and number of identical repeated recommendations, 1 July 2007–30 June 2012
Some organisations (61/79) that were interviewed for this study reported that the cumulative effect of repeated recommendations may aid the uptake of coronial recommendations. However, coroners that were interviewed reported that their repeated recommendations are “falling on deaf ears” and not being implemented.

**Recipients**—There were 309 recipients of coroners’ recommendations. The type of recipients is described in Figure 5.

**Figure 5. Summary and number of recipients of coroners’ recommendations by type, 1 July 2007–30 June 2012**

There were 232 organisations: 121 government, 67 non-government not for profit and 44 for profit. The finding that government organisations received the highest number of recommendations is consistent with other research from Victoria, Australia.\(^{12}\)

Apart from the Attorney General, the other four individuals were health practitioners.

An ‘untargeted’ recommendation was defined as a recommendation which was not directed to an identifiable organisation. For example, a recommendation that was directed to “all whitebaiters”\(^{29}\) or “any person reading…this decision”.\(^{30}\)

The number of untargeted recommendations was investigated because coroners endeavour to maximise the preventive potential of their recommendations by targeting them at a specific organisation. Australian research has demonstrated that vaguely directed recommendations receive poor or no responses and have little or no preventive impact.\(^{38}\)

Organisations can argue that the recommendation was not directed at them and therefore does not require any action which, in turn, limits the effectiveness and preventive potential of recommendations. Eighty nine per cent of the 232 organisations received between one and ten recommendations. Occasionally organisations received 10 or more recommendations, but this was comparatively rare.
Thirty-seven percent of organisations received one coronial recommendation during the study period. Seventeen percent of organisations received two recommendations during the study period. Thirty-four percent of organisations received between three and ten recommendations during the study period.

The NZ Transport Agency and the Ministry of Health received the highest proportion of unique coroners’ recommendations (Figure 6).

**Figure 6. Number of recommendations (15 or more unique and total) sent to organisations, NZ 1 July 2007–30 June 2012**

The Sir Edmund Hillary Outdoor Pursuit Centre received the highest number of total recommendations (161), but relatively few unique recommendations (23) because of the number of people who died in a single incident. On 30 March 2010, a teacher and six students died while undertaking an adventure challenge exercise conducted by the Sir Edmund Hillary Outdoor Pursuit Centre (Figure 6).
The health sector organisations that were sent coroners’ recommendations during the study period are summarised in Table 1.

Table 1. NZ health sector organisations sent coroners’ recommendations, 1 July 2007–30 June 2012

<table>
<thead>
<tr>
<th>Organisation’s name</th>
<th>Total N of recommendations during study period</th>
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<tbody>
<tr>
<td>Plunket</td>
<td>7</td>
</tr>
<tr>
<td>NZ College of Midwives</td>
<td>10</td>
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<tr>
<td>All DHBs</td>
<td>297</td>
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<tr>
<td>Ministry of Health*</td>
<td>134</td>
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<tr>
<td>Midwifery Council</td>
<td>2</td>
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<tr>
<td>NZ Nurses’ Organisation</td>
<td>6</td>
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<tr>
<td>St John</td>
<td>14</td>
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<tr>
<td>Royal NZ College of GPs</td>
<td>10</td>
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<tr>
<td>Medical Council</td>
<td>9</td>
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<tr>
<td>Centre for Adverse Reactions Monitoring and Intensive Medicines Monitoring Programme, Pharmacovigilance Centre, University of Otago</td>
<td>6</td>
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<tr>
<td>National Addiction Centre</td>
<td>6</td>
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<tr>
<td>Central Emergency Communications Ltd</td>
<td>6</td>
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<tr>
<td>ACC</td>
<td>5</td>
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<tr>
<td>Ashburn Clinic</td>
<td>5</td>
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<td>Nursing Council</td>
<td>5</td>
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<tr>
<td>Tunstall Healthcare NZ Ltd</td>
<td>4</td>
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<tr>
<td>Alcohol Advisory Council (ALAC)</td>
<td>4</td>
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<tr>
<td>Health and Disability Commissioner</td>
<td>4</td>
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<tr>
<td>Health Quality Safety Commission</td>
<td>10</td>
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<tr>
<td>Nova Trust</td>
<td>4</td>
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<tr>
<td>Health Director, Southern Institute of Technology, Invercargill</td>
<td>2</td>
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<tr>
<td>Pharmac</td>
<td>2</td>
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<tr>
<td>River Ridge East Birth Centre</td>
<td>2</td>
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<tr>
<td>Springhill Residential Treatment Centre</td>
<td>2</td>
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<tr>
<td>Waiuku Health Centre</td>
<td>2</td>
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<tr>
<td>Medical Officer of Health (Dunedin)</td>
<td>2</td>
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<tr>
<td>Calvary Hospital</td>
<td>2</td>
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<tr>
<td>Otaki Medical Centre</td>
<td>2</td>
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<tr>
<td>Auckland Health Clinic</td>
<td>1</td>
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<tr>
<td>McKesson NZ Ltd (Healthline)</td>
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<tr>
<td>Medirest</td>
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<tr>
<td>Catlins Medical Centre</td>
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<tr>
<td>Cromwell Medical Centre</td>
<td>1</td>
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<tr>
<td>Junction Health</td>
<td>1</td>
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<tr>
<td>Medicines Adverse Reactions Committee</td>
<td>1</td>
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<tr>
<td>WellTrust</td>
<td>1</td>
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<tr>
<td>Safekids (child injury prevention service of Starship Children’s Hospital)</td>
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<tr>
<td>Australasian College of Emergency Medicine</td>
<td>1</td>
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<tr>
<td>Diabetes Society of NZ</td>
<td>1</td>
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<tr>
<td>Gore Hospital</td>
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<tr>
<td>NZ Charter of Health Practitioners</td>
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<tr>
<td>NZ Natural Medicine Association</td>
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<tr>
<td>NZ Society of Naturopaths</td>
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<tr>
<td>Pharmacy Council</td>
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<tr>
<td>Organisation's name</td>
<td>Total N of recommendations during study period</td>
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<tr>
<td>NZ Medical Journal</td>
<td>6</td>
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<tr>
<td>Royal Australasian College of Surgeons</td>
<td>1</td>
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<tr>
<td>Royal Australian and NZ College of Psychiatrists</td>
<td>1</td>
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<tr>
<td>The NZ Anaesthesia Education Committee</td>
<td>1</td>
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<tr>
<td>Royal Australian and NZ College of Radiologists</td>
<td>1</td>
</tr>
<tr>
<td>Royal Australian and NZ College of Obstetricians and Gynaecologists</td>
<td>1</td>
</tr>
<tr>
<td>National Poisons Centre, Dunedin School of Medicine</td>
<td>1</td>
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* Includes recommendations directed to the Ministry of Health, Medsafe, Minister of Health, Director-General of Mental Health, Director-General of Health, Te Utuhina Manaakitanga Trust.

Qualitative nature of coroners’ recommendations about healthcare related deaths—Recommendations about healthcare-related deaths addressed matters such as:

- The introduction of, or changes to, guidelines, pathways, protocols, checklists and/or standard operating procedures;
- The importance of maintaining adequate medical records;
- Further training and education;
- Increased supervision of junior doctors in specific areas of practice;
- Review of telephone triage systems;
- Improved communication between healthcare workers, especially during changeovers;
- Reviews of hospital policies;
- Raising awareness in the medical community of unusual or rare presentations.

Coronial references to previous similar findings—Coroners referred to previous similar findings in 72 of the 607 inquiries (Figure 7). This calculation was undertaken for two reasons. First, the preventive impact of coroners’ recommendations may be improved if coroners (or their researchers) analyse larger datasets for patterns, rather than focusing on an isolated case. Second, an aim was to assess the extent to which legal precedent was applied in coroners’ findings and recommendations.
Interviews—123 interviews were undertaken with 15 coroners, 100 senior individuals from 79 organisations and eight interested parties.

Coroner participants—All NZ coroners were approached, and 13 were able to participate. Three retired coroners were invited to participate to garner perspectives on the old and new coronial systems. Two agreed to participate.

Fewer female (4/15) than male (11/15) coroners participated in the study. Thirty-five percent (6) coroners in NZ are female. Therefore, the percentage (26.7%) of female coroners interviewed is similar to the proportion of female coroners in NZ. The percentage of male coroners interviewed was 73.3%.

In keeping with the aim to capture a range of experiences, similar numbers of participants were interviewed from each category of years of experience. Five (33.3%) interviewed coroners had 5-9 years of experience, four (26.7%) coroners had 10-14 years of experience and six (40%) had fifteen or more years’ experience.

Organisation participants—The 79 organisations included 55 government, 14 non-government not for profit and 10 for profit agencies that received coroners’ recommendations during the study period. Twenty-six were healthcare sector organisations. Senior individuals from each organisation were interviewed. For example, for DHBs, the individuals interviewed were often the Chief Medical Officer, in-house lawyer and coronial liaison officer.

Interested party participants—The eight interested parties included two medical professionals, three lawyers, three families and one organisation. Interested parties were included if they had three or more years of experience with the coronial jurisdiction, particularly coroners’ recommendations. The sample of interested parties is not representative, nor can it be generalised to all NZ lawyers, medical professionals, families that are involved in the coronial jurisdiction. The interested parties were included because they provide a different perspective on coroners’ recommendations than the views garnered from organisations and coroners.

Access to full coronial findings—There are no Coroner’s Court Law Reports. ‘Law reports’ are published volumes of judicial decisions by a particular Court or group of Courts. In NZ the official law report series is the New Zealand Law Reports which
report cases from the NZ Supreme Court, Court of Appeal and High Court. It is unusual for a Court not to have law reports.

All coroners and interested parties and 50/79 organisations complained about under-reporting in the coronial jurisdiction and the difficulties in accessing full coroners’ findings. There are only 38 full coroners’ findings of “public interest” on the CSNZ website.\textsuperscript{32} Summaries of some coronial recommendations issued since 2007 are available online at the NZ Legal Information Institute.\textsuperscript{33} For a fee of between $1000–$2750, researchers can request access to the Australian National Coronal Information System.\textsuperscript{34}

Participants stated that the inaccessibility of full coronial findings means that:

- There are fewer opportunities to learn from deaths, improve patient safety and quality of care;
- Coroners’ decision making is inconsistent;
- An international body of law and practice has not developed;
- Coronal cases are often decided in isolation with little reference to patterns or comparative risks (Figure 7);
- Coroners’ ability to fulfil their statutory preventive function is undermined.

\textbf{Prophylactic function}–All participants reported that coroners’ recommendations have the potential to contribute to injury and death prevention. All participants understood that coroners have a statutory preventive function. However, coroners (11/15), interested parties (7/8) and healthcare organisations (24/26) questioned whether this function was being maximised.

A commonly cited weakness of coroners’ recommendations was that they focus on an isolated case. Interested parties (7/8), healthcare organisations (25/26) and coroners (13/15) suggested that recommendations could be improved by encouraging coroners to consider similar cases, undertaking analysis of patterns and comparative risks. Some coroners (8/15) preferred to work collaboratively with organisations to produce recommendations:

\begin{quote}
In terms of our prevention role, I like the work we have done on SUDI where there is an alliance and collaboration with researchers and practitioners who know what they are doing and we are assisting that process. It is informing our understanding of the issue and it increases our chances of commenting usefully…I don’t think that our value is in making recommendations on a case-by-case basis.
\end{quote}

Similarly, some healthcare organisations (14/26) reported that it is useful to work with coroners to produce preventive recommendations and outcomes:

\begin{quote}
It’s a question of joining forces. If you’re talking about deaths that occur as the result of a kid not being immunised, then the coroner’s office should join hands with the paediatricians and get it out on a broad front. And if you’re talking about wearing helmets, again contact those of us who deal with the emergency situations that result from not wearing helmets and say, “Look let’s get this out there and take preventive action.” And so as opposed to just the coroner saying it, the coroner should potentially approach involved stakeholders and say, “I’m going to make this recommendation, do you agree with it and would you be happy to endorse it?” Share the learning to prevent deaths and publicise the potential risks.
\end{quote}
Although most coroners (11/15) stated that recognising a preventable death is “obvious”, their recommendations were not systematically consistent with public health principles. Coroners’ recommendations rarely identify the population at risk or whether the proposed countermeasure addresses an identified risk factor. For example, the following recommendation does not apply injury prevention principles: “Lastly, in stating the obvious, chewing ones food properly before swallowing goes without saying.”

Participants identified a range of strategies to increase the preventive potential of coroners’ recommendations including:

- Consultation with appropriate organisations so that their evidence and experience informs the formulation of recommendations;
- Training and resources for coroners;
- Providing coroners with easy access to clinical and epidemiological expertise;
- Practice notes and guidelines issued by the Chief Coroner;
- Targeting recommendations to the appropriate organisation that can take action;
- Accessing previous similar cases to enable coroners and/or their staff to assess patterns;
- Law reform such as a mandatory requirement for recipients of recommendations to respond so that feedback is provided to coroners.

Evidence-based recommendations—The majority of coroners (14/15) appreciated the need for their recommendations to be informed by evidence. All coroners defined ‘evidence’ as information tested in court. Such evidence may include research and scientific evidence. However, the scientific and legal definitions of ‘evidence’ are not always compatible.

Coroners reported that they were often unable to draw on this information because of financial constraints, staff shortages and difficulties in finding experts. The following extract from an interview with one DHB is illustrative:

> It is a devil’s job to get an expert, actually. No conflict, has the expertise, who is willing to do it. We struggle with it. I know the coroners do too. I know that we had these particular cases where we had the same expert used in both cases. There was a feeling that that particular expert was trying to set a gold standard and was not representative of every day practice in the DHB at all.

Healthcare organisations reported that it is crucial that coroners choose the most appropriate expert/s. The following view from a healthcare organisation is reflective of participants’ concerns:

> To a significant degree, partly it’s about having the right expert to suit the case. For example, you wouldn’t have a psychiatrist talking about general surgery. One key thing is the processes around the expert advice. So the HDC has a process of preparing a preliminary report and giving all the interested parties an opportunity to comment before making a final decision. Their framework is clear: the Code of Consumers’ Rights. So they have a safe approach, I think, because they rely on a variety of opinions. The other key issue is what the outcomes are. So the HDC will come up with whether there was a breach of the Code and what action like an apology. The coroner can make a whole range of safety recommendations. If the
coroner makes those on the basis of a single expert’s advice, that is when the outcomes become more of a problem because it’s hard to get systems-wide recommendations.

A lawyer suggested that Chief Medical Officers or the Colleges would be an appropriate resource for coronial decision-making:

We’ve also had coroners’ inquests where the coroners have used an expert where we think probably they’re not the best person they could have used. For example, they might not have practised in the public sector for a long time, or it might not really be their area of practice…I think the Chief Medical Officers group…could be a source of information because they are a very knowledgeable group of clinicians. And I think the input from the colleges is important as well…I think those groups are…probably underutilised by both DHBs and external agencies…..But I think if the coroners have to line up an expert from every group, it will become quite cumbersome.

Quality of care and patient safety—Many healthcare organisations (20/26) reported that they were not adequately consulted during the coronial process, which was particularly problematic if the coroner made recommendations about clinical practice. Improved communication between coroners and clinicians could enhance the preventive potential of coroners’ recommendations and also improve quality of care and patient safety. For example, one DHB observed that:

There was one in particular that agitated nearly all of us. It was about clinical practice about CT scanning after head injury. It was a recommendation that basically said that everybody who falls over, well, I'm exaggerating but, everyone who falls over gets a CT scan. We thought “hang on guys, we've got pretty good protocols in place from the College of Emergency Medicine”. That recommendation stands out as being one where the coroner was really firm about our threshold for CT scans in elderly head injuries. We thought ”Well, actually, on the basis of one case, does not necessarily make a good protocol.” So coroners’ recommendations can have a positive impact on quality of care, but there has to be communication between DHBs and coroners, otherwise the recommendations can be misguided.

Healthcare organisations emphasised that their calls for consultation did not mean that they were not supportive of external independent investigations which could provide insight into the operation of healthcare systems. Many of these organisations (21/26) stated that coroners’ recommendations have the potential to raise awareness about unfamiliar issues or alert healthcare organisations to patterns:

Where the coronial jurisdiction can come into its own is by drawing data from related deaths. That can be in the form of a post inquest process, pulling together collecting over time, information from a number of different cases and consolidating. Suicide in healthcare settings is an example. There are lessons to be learnt by looking at a collection of coronial investigations into suicides that occur in healthcare settings. This is partly why we are interested in reading and receiving all coroners’ findings that relate to mental health because we are looking for patterns. Are there common issues that are emerging, so that for the benefit of future patients and patient safety, we can make changes? Are there issues that we had missed that are emerging before the coronial inquiries? Or, in fact, hearing inquests into related deaths together, as coroners sometimes do, is a good idea. That’s where there can be the benefit of the coronial process.

Some healthcare organisations (11/26) gave examples of coronial recommendations that had a positive impact on clinical practice. For instance, one healthcare organisation explained that:

We had a lady who stopped taking her anticoagulation meds after she went on IVF. When she went back on the meds she got blood clots in her heart and passed away. The coroner looked at the case and found that there was poor communication between the GP and the IVF specialist. Recommendations were made about communication, monitoring and responsibility.
We took those recommendations on-board and we believe that patients in that lady’s situation are safer as a result.

However, participants reported that some coroners’ recommendations and coronial processes need to be improved before their potential to assist initiatives to improve patient safety can be fully harnessed. For example, recommendations must be directed to the most appropriate organisation. As one participant explained, coroners should “not use the Ministry of Health as a convenient PO Box for all health-related recommendations.”

**Training and resources**—All participants reported that the CSNZ would benefit from further resources. Almost all healthcare organisations interviewed (25/26) reported that the CSNZ would benefit from epidemiological and clinical input. The Coronal Prevention Unit (CPU) and the Clinical Liaison Service (CLS) at the Coroner’s Court in Victoria, Australia were frequently cited by coroners (12/15) and healthcare organisations (12/26) as the “gold standard” models.

The CPU comprises a multidisciplinary team trained in medicine, law, public health and the social sciences that assists coroners with their prevention role. The CLS provides coroners with assistance from practising clinicians for the investigation of healthcare-related deaths. One clinician warned that the disadvantage of the CLS model is that there “are limited experts in New Zealand to fill such roles.” Some healthcare organisations (18/26), interested parties (3/8) and coroners (3/15) questioned the appropriateness of requiring legal training alone.

**Discussion**

The findings highlight strategies for improving coronial recommendations and are important for death investigation systems that wish to strengthen their preventive function and role in patient safety.

In the 5-year study period there were 607 coronial inquiries that resulted in 1644 recommendations and 309 recipients of coroners’ recommendations. The 123 interview participants reported that there have been improvements in coronial recommendations since the introduction of the Coroners Act 2006, but that the prophylactic and patient safety potential of recommendations is not being maximised.

There is limited international research. This study’s results reinforce South Australian research which suggests that coroners’ recommendations have the potential to make contributions to patient safety initiatives. However, this study confirms the barriers (such as the quality of recommendations) to implementation which have been identified by previous research. These barriers mean that some NZ coroners’ recommendations (like South Australian coroners’ recommendations) have failed to have a significant impact on preventing adverse events.

Australian research which identified these barriers, nonetheless emphasised that the “role of the coronial system as a reporting agency with wide ranging powers to explore such incidents provides an important public health service by investigating why adverse events happen and what might need to be introduced or changed to prevent such incidents recurring.” As the first study of its kind in NZ, the study makes an important contribution to the NZ literature and the CSNZ.
Major strengths of this project are that it was the first empirical study of NZ coroners’ recommendations and it has the potential to inform coronial practice and organisations’ policies. In addition, the findings have the potential to contribute to law reform, including the NZ Government’s current review of the coronial jurisdiction. Given the Ministry of Justice’s expenditure on the coronial jurisdiction, it is surprising that the main preventive tool (recommendations) have been under-researched. An additional strength of the study was its mixed methods: legal, qualitative and quantitative. The response rates for coroner and organisation participants are a strength of the project.

A limitation of the study is that the interested party participants are not representative. Future research should be undertaken to further explore their views. Although selection criteria were applied, there may be selection bias in the interested party sample because of the high proportion of participants who contacted the researcher. There may be case selection bias in the analysis of recommendations because the sample of repeated recommendations was limited to those that were identical in wording. Repeated themes were not eliminated which may have led to an overestimate of the total number of recommendations. Another limitation of the study is the possible impact of the Ministry of Justice’s review of the Coroners Act 2006 which began in 2012 during the study period. The review may have impacted the coroners’ formulation of recommendations. As this was the first analysis of NZ coroners’ recommendations, it is exploratory only and further research should be undertaken.

It is not surprising that the research revealed that coroners typically sent recommendations to government organisations and that the MOH received the second-highest proportion of recommendations because these entities are responsible for the development of legislation, policies and programmes designed to manage public health.

An important finding is that there are a significant proportion (n=72, 23%) of untargeted recommendations. This study reinforces prior research findings that vaguely directed recommendations (e.g. ‘to the government’) receive poor or no responses and have little or no preventive impact.  

Coroners “are trying to ensure that a recommendation is targeted and that it says who it is to go to”. If a recommendation is inappropriately directed its preventive potential is undermined because it does not reach the organisation that can consider and/or implement it.

This research revealed that only 72 of the 607 coronial inquiries included references to previous similar findings. Opportunities for preventing morbidity and mortality and improving patient safety may be maximised if coroners consider previous similar findings. When coroners focus on one particular death in a specific case, it is unlikely that they will assess patterns or comparative risk. How many similar deaths have occurred in the last 30 years? What are the risks attributed to that type of death compared to the health risks associated with other categories of death?

Most NZ coroners are not trained in the disciplines that would be required to undertake comparative health and safety assessments. Ready access to clinical and epidemiological advice would enable the facts to be interpreted in light of the wider
context and specific populations, enabling the formulation of robust recommendations. By not systematically addressing areas where the greatest morbidity or mortality burdens exist, coroners limit their ability to reduce illness, disease and injury at the population level.19

This study’s findings suggest that the introduction of services similar to the Victorian CPU and CLS could assist coroners to accurately identify preventable deaths and to improve the quality of coronial recommendations and processes.19 Australian research has found that the coronial process was delayed because of a lack of readily available clinical and public health expertise.25 Delays can hinder the preventive impact of recommendations because once the proposals are released, they may be outdated and inconsistent with recent changes within organisations. The CPU and CLS were established to remedy these issues. Access to multidisciplinary teams within the NZ coronial services could assist coroners to formulate recommendations that are consistent with public health principles.19

Some coronial data is shared with other injury and death prevention agencies in NZ and overseas,40 but the inaccessibility of full coronial findings prevents the prophylactic potential of coronial recommendations from being achieved. The introduction of Coroners’ Court Law Reports would ensure that full coronial findings and recommendations are accessible and could improve the quality of coronial decision making.19 A public database of responses to coronial recommendations would encourage accountability and the identification of common themes.

Families who have lost loved ones to preventable death sometimes complain to coroners about the quality of healthcare that they received. A common complaint is that a diagnosis was missed. The recent Gravatt case, where a 22-year-old medical student died of Neisseria meningitides infection, is an example.25

Coroners have sometimes identified problems with healthcare that standard mortality data collection within the healthcare organisation had missed.21 For example, preventable neonatal deaths following the insertion of long lines was documented by coroners, but missed by the healthcare organisation.21

Coroners have an educative role and their recommendations to healthcare organisations may “give valuable insights into the strengths and weaknesses of nursing, medical and institutional practice and many inquests serve as catalysts for reform.”41 In Western Australia, healthcare-related recommendations issued in 2007 had a high rate of implementation and a high level of progress updates provided by the Office of Safety and Quality.38

Coronial recommendations could be a key patient safety resource and reduce the incidence of adverse events, subject to the quality improvements identified by research participants. The potential value of the quality of care learning that can be derived from coronial recommendations is currently under-researched, but is worth exploring further in future projects.

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**Author information:** Jennifer Moore, Legal Issues Centre, Law, University of Otago, Dunedin
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Correspondence: Jennifer Moore. Email: jennifer.moore@otago.ac.nz

References and endnotes:

3. Coroners Act 2006, s 3(1)(a) and (b).
5. Coroners Act 2006, s 13(1)(a), (b), (c), (d), (e), (f), (g) and s 14(2).
16. The University of Melbourne’s public health law research group is currently evaluating Victorian coronial recommendations and responses to those recommendations. Available from: www.healthprograms.unimelb.edu.au

20. Department of Health, Government of Western Australia. From Death We Learn. Western Australia: Department of Health; 2009.


33. The NZ Legal Information Institute “NZ Coroners Court”. Available from: www.nzlii.org/nz/cases/NZCorC/

34. Email from Joanna Cotsonis (Access Liaison Officer, NCIS) to Jennifer Moore regarding access to NCIS for research; 26 July 2013.


38. Law Reform Commission of Western Australia. Review of Coronial Practice in Western Australia: Background Paper. Western Australia: Law Reform Commission of Western Australia; September 2010.

39. Interview with the Chief Coroner; 12 September 2012.
