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Commentary

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Abstract

During the course of a paramedic's duties, it is inevitable that they will deal with patient death in some way. Australia's coronial system is a safeguard to ensure deaths are investigated where their cause is not immediately known, or the circumstances surrounding the death is unusual.

This article considers three recent coronial inquests involving paramedic care in Australia; identifies the significant observations that can be made from analysing the paramedics' actions during patient treatment; and comments on how the coronial system can be used to improve patient outcomes.

Keywords:

public policy; coronial system; law

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Introduction

During the course of a paramedic's duties, it is inevitable that they will deal with patient death in some way. Whether the patient's death occurred before paramedic attendance, during paramedic treatment or after paramedics have handed over their patient to the hospital, they will encounter death. Australia's coronial system is a safeguard to ensure deaths are investigated where their cause is not immediately known, or the circumstances surrounding the death is unusual.

This article will consider three coronial inquests involving paramedic care in Australia: the 2016 death of Stacey Yean; the 2012 death of Ruby Yan Chen; and, the 2010 death of Thomas Olive. These cases are particularly noteworthy as they consider circumstances where paramedics were directly involved with the patient before their death. The three cases considered in this article come from reports published by coroners and the reports are available in the public domain. After considering the circumstances of these deaths, the author will identify notable observations that can be made from analysing the paramedics' actions during patient treatment, which is significant to determine how the coronial system can be used to improve patient outcomes.

Australian coronial courts

Australian coroner's courts are involved with death investigations. If a medical practitioner will not issue a cause of death certificate following a person's death, the death becomes 'reportable' to the coroner in the relevant Australian jurisdiction (1). After investigating a death, coroners make recommendations to prevent injury and death occurring in similar circumstances (2). As such, coroners 'speak for the dead to protect the living' (3).

Coronial legislation differs in each Australian jurisdiction. Generally, for a death to be investigated by a coroner, it needs to be a 'reportable' death. While the definition of a reportable death differs between jurisdictions, reportable deaths are unexpected, violent, unnatural and/or suspicious in nature. A specific category of reportable death also exists for health-related deaths or where death is not a reasonably expected outcome of a health procedure (1).

Health-related deaths can apply to paramedic practice: as a result of a patient death following paramedic treatment, where paramedics may have been involved in the patient's death in some way; or where paramedics may have exacerbated a patient's injury in some way which leads to the patient's death. While coronial courts have the benefit of hindsight in their decisions, their comments shed light on the circumstances of a patient's death and allow organisations and individual paramedics the opportunity to reflect on their professional

conduct in order to determine whether a more appropriate response was warranted.

Death of Stacey Yean

A recent case to go before the Coroner's Court of Victoria was an inquest into the death of Stacey Louise Yean (4). Stacey, 23 years of age, fell ill on 5 January 2016 experiencing stomach pain and vomiting. The patient's family members contacted the hospital, her general practitioner and a locum medical service for advice. Family members then made an emergency call requesting paramedic attendance but an ambulance crew was not dispatched as the patient did not meet the 'low acuity ambulance criteria'. A second emergency call was made when the patient's vomiting continued and an Ambulance Victoria ambulance crew was dispatched. The crew consisted of an advanced life support (ALS) clinical instructor and an ALS graduate paramedic (4).

On arrival, paramedics assessed the patient and determined her vital signs were within normal range. Paramedics offered to transport the patient to hospital but advised that her condition did not mandate a hospital visit. Further, paramedics also indicated that 'ramping' was occurring at the hospital meaning the patient could expect significant delays to be seen by a medical practitioner. The patient declined the offer for transportation and paramedics left the patient at her home. The patient's condition did not worsen although the vomiting continued. The patient was found deceased in her bed the following day (4).

The Coroner identified the 'primary issue of contention' for this inquest was whether the paramedics' decision not to transport the patient was reasonable in the circumstances. The Coroner held that paramedics acted within their clinical guidelines in recommending that the patient's condition did not necessitate ambulance transport. Further, paramedics suggesting the possibility of a wait at hospital was a stated fact. While the patient's parents suggested this fact was the reason the patient declined the offer of transport to hospital, the Coroner indicated that the patient remaining at home did not cause her death. As such, no fault could be attributed to the attending paramedics. The cause of the patient's death, here, was unfortunately unable to be ascertained (4).

A number of noteworthy observations can be made from these inquest findings. An organisation's clinical policies are important. In following those policies, no blame was attributable to the individual paramedics. Further, the findings support the notion that paramedics do not need to transport every patient. Provided they use their clinical judgement, and their decision accords with organisational policy, paramedics can recommend patients remain at home rather than being transported to hospital.

Death of Ruby Yan Chen

Ruby Yan Chen, four years of age, died during a patient transfer between Blackwater Hospital and Rockhampton Base Hospital in August 2012 (5). The aero-medical transfer was conducted by Queensland Ambulance Service (QAS) flight paramedics who were qualified intensive care paramedics (now called critical care paramedics). When the aero-medical team collected the patient from Blackwater Hospital they requested a nurse remove the patient's intravenous (IV) saline bag, which was providing hydration. The paramedics reused that same IV bag on the patient during the flight, after 'priming' and 're-spiking'. During transfer, the patient deteriorated and suffered seizures and cardiac arrest. Despite paramedics attempting resuscitation, the patient could not be revived (5).

The Rockhampton Coroner's Court held an inquest into the patient's death to determine the cause. An autopsy performed on the patient found an air embolism in her heart and jugular vein. Reusing the partially depleted IV bag was held to be the cause of the air embolism leading to the patient's death (5).

There were a number of concerns about the patient's treatment which the Coroner raised during the inquest. Despite the paramedics' evidence that reusing the IV bags maximised use of the resources, there were fresh saline bags available for use. As such, reusing the IV bags could not be justified. Further, the patient's death was caused entirely by the re-spiking of the IV bag. However, the Coroner did comment that the resuscitation attempt on the patient accorded with best practice (5).

A number of significant recommendations came out of the inquest. Saline bags should be single use only. Further, paramedics should receive training on the dangers of re-spiking IV bags. Finally, QAS clinical procedures needed development in relation to the preparation required to re-spike IV bags (and this was addressed proactively by the ambulance service) (5).

These findings highlight the importance of the coronial process. Given the patient's death was attributable to the 're-spiking' of the IV bag, the findings highlight how 're-spiking' is a danger to patients. As such, health practitioners can avoid this practice and hopefully reduce similar patient deaths from recurring (6).

Death of Thomas Olive

Actions of paramedics in treating Thomas Olive, four years of age, were also scrutinised (7). The patient exhibited a number of sporadic symptoms in the lead up to his death including discoloured urine and muscle/joint pain. The patient's parents consulted with a number of medical practitioners including general practitioners and paediatricians. The patient was also taken to Nambour General Hospital approximately 2 months before his death. On 25 August 2010, the patient experienced

difficulty walking, lethargy and a fast heartbeat. Queensland Ambulance Service paramedics were called and an advanced care paramedic and third year student paramedic attended (7).

Paramedics determined that the patient had 'a Glasgow Coma Scale of 10; a low temperature of 33.9; a fast pulse of 143; blood pressure of 105/60; and respiratory rate of 25'. Paramedics determined the patient's condition was time critical and left for Nambour General Hospital after seeking intensive care paramedic (now called a critical care paramedic) attendance en-route (7).

One of the primary considerations for the Coroner in this case was the medical reporting of the paramedics. The advanced care paramedic crew documented the patient showing considerable improvement including alertness, laughter and talking. The intensive care paramedic, though, identified significant concerns with the patient's condition including lethargy, diaphoresis and sinus tachycardia. The discrepancies were reflected in the medical documentation in the form of conflicting electronic ambulance report forms. On arrival to the hospital, the patient deteriorated quickly leading to an unsuccessful resuscitation. His death was attributed to a rare metabolic gene mutation causing rhabdomyolysis (7).

The Coroner considered a range of contributors (the various health practitioners involved in the patient's care) relating to a failure to diagnose the patient. While the hospital's response is not relevant to this discussion nor is the role of the medical practitioners or nurses, the Coroner did comment on the paramedics' involvement in the patient's treatment (7).

There are several significant matters in relation to the paramedics' treatment of the patient to note here. While en-route to hospital, information about the patient's condition was passed to senior medical staff but not to the triage nurse, which caused a delay in transferring the patient to a resuscitation bed. Further, the declaration of the patient's improvement influenced the triage decision causing delay in the hospital's ability to respond to the patient's deterioration. Further, the electrocardiography results from the ambulance were never provided to the hospital despite indications of hyperkalaemia. Despite these shortcomings, the Coroner identified that the paramedic responses to the triaging and handover processes at the hospital were adequate and that the handover procedures did not negatively affect the patient's treatment outcome (7).

Thomas Olive's inquest findings highlight the importance of accurate medical reporting. Medical reporting is essential as it supports patient treatment. Inadequate medical reporting can lead to a range of outcomes including breaching the appropriate standard of patient care and professional misconduct. This inquest is a timely reminder to paramedics that accurate medical reporting is crucial to patient care.

Conclusion

Coronial courts have an important function. They investigate and comment on unusual patient deaths in order to prevent deaths recurring in similar circumstances. Coronial courts are particularly relevant to paramedicine given the propensity for patient deaths to occur while a paramedic is in attendance. As such, the coronial system can provide some important commentary of organisational policy and paramedic conduct.

The three coronial cases considered in this article are significant to paramedicine policy and procedures. The death of Stacey Yean affirmed a paramedic's capacity to advise patients to remain home when a hospital visit is not warranted. Ruby Yan Chen's death highlighted the dangers of re-spiking IV bags and necessitated development of organisational policies dealing with procedures surrounding the re-spiking of IV bags. Finally, Thomas Olive's death emphasised the importance of accurate medical reporting and identified how inaccurate medical reporting could cause adverse patient outcomes. While these patient deaths were tragic, the coronial system allowed for recommendations to be made which, hopefully, prevent future deaths in similar circumstances.

Future coronial inquest findings involving paramedics may address individual paramedic conduct with impending paramedic registration. With Australian paramedics becoming professionally registered as health practitioners, coronial findings may reflect the new status of paramedics as registered health professionals. Coroners may refer a matter to the Australian Health Practitioner Regulation Agency or a

relevant national board where it has implications for registered health practitioners. Coroners may need to consider whether future paramedic conduct that might contribute to patient death needs to be referred to the Paramedicine Board of Australia. Registration of paramedics is expected to occur in late 2018.

Conflict of interest

The author declares she has no competing interests. The author of this paper has completed the ICMJE conflict of interest statement.

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