IN THE CORONERS COURT
OF VICTORIA
AT MELBOURNE

Court Reference: 2007/ 2556

FINDING INTO DEATH WITHOUT INQUEST

Form 38 Rule 60(2)
Section 67 of the ***Coroners Act 2008***

I, JACINTA HEFFEY, Coroner having investigated the death of Glen Kingsun

without holding an inquest:
find that the identity of the deceased was Glen David Kingsun
born on 3 March 1965.
and the death occurred on 5 July 2007
at Latrobe Regional Hospital, Traralgon
from:

1(a) Cardiac arrhythmia secondary to electrolyte imbalance and verapamil toxicity.

Pursuant to section 67(2) of the **Coroners Act 2008**, I make findings with respect to **the following circumstances**:

The deceased was a 42 year old man, residing in Morwell with his wife and two children. He had a complex medical history which included diabetes, obesity, hypertension, arthritis and anxiety.

The deceased was under the care of a General Practitioner, Dr Terrence Norwood, and also had frequent appointments with a variety of specialists, in response to his various health needs. For example, in the six months before his death he had been seen at least once by: Dr Gnanaharan, a cardiologist; Associate Professor Duncan Topliss, the Director of the Department of Endocrinology and Diabetes at the Alfred; Dr Anthony Boers, a General Physician; Mr Peter Burke, a Consultant Surgeon; and Dr Mark McCombe, a Vitreo Retinal Consultant.

The deceased had an involved medication regimen which was subject to ongoing adjustment and change. Both the deceased's diabetes and hypertension had proven somewhat drug resistant, requiring experimentation with different drugs and doses, within the confines of his known intolerances to certain classes of medication.

A survey of the deceased's medical records in the six months preceding his death demonstrates the complexity and fluidity of his medication regimen and the challenge involved in coordinating his care.

Prescription History March to July 2007

On 18 March 2007, at the request of Dr Norwood, the deceased was reviewed by General Physician, Dr Boers. Dr Boers listed the deceased medications, as he understood them at that time, as follows:

1. Karvea 150mg 3 times a day [**generic name**: Irbesartan (angiotensin II receptor antagonist) **relevant use**: treatment of hypertension]

2. Lipex 40mg once at night [**generic name**: simvastatin; **relevant use**: to control elevated cholesterol and reduce the risk of heart attack and stoke in people at high risk of coronary heart disease}

3. Inderal 40 mg twice a day [**generic name**: propranolol (beta-blocker) **relevant use**: treatment of hypertension]

4. Ranitidine 2 twice daily [histamine H2-receptor antagonist; **relevant use:** treatment of peptic ulcer disease and gastroesophageal reflux disease]

5. Arthrexin 2 capsules twice a day [Non-Steroidal Anti-Inflammatory Drug; **relevant use:** to relieve pain and inflammation]

6. Diabex 1000mg twice a day [**generic name**: Metformin hydrochloride **relevant use**: to lower high blood glucose levels]

7. Serapax 1-2 30mg tablets a day [**generic name**: oxazepam (benzodiazepine) **relevant use**: to treat anxiety]

8. Valium 1 25mg at night [**generic name**: diazepam (benzodiazepine) **relevant use**: to treat anxiety]

9. Half Disprin daily [**generic name:** aspirin **relevant use:** to lessen the likelihood of cardiovascular complications]

10. Novorapid insulin [**generic name:** insulin aspart (fast acting insulin analogue) **relevant use:** to control blood glucose levels]

11. Lantus insulin [**generic name:** insulin glargine (long-acting insulin analogue) **relevant use:** to control blood glucose levels]

At that consultation Dr Boers decreased the deceased's NovoRapid insulin, increased his Lantus insulin and asked him to decrease his non-steroidal anti-inflammatory ("Arthrexin") intake.

Dr Boers reviewed the deceased again on 20 April 2007 and adjusted his Propranolol ("Inderal") to 80mg twice daily.

On 27 April 2007, the deceased was reviewed by Associate Professor Topliss who listed the deceased medications as he understood them to be at that time. The list largely corresponds with Dr Boers'list of 18 March, with the following changes:

1. the deceased's dose of propranolol ("Inderal") is recorded as 80mg twice daily, which reflects Dr Boers' adjustment of 20 April 2007;
2. the deceased irbesartan dose is recorded as 600mg daily delivered via 300mg of "Karvea" and 300/1.25mg of "Karvezide" (which is a combination product containing irbesartan and hydrochlorothiazide).

At the appointment of 27 April, A/Prof Topliss recommended an increase in the deceased's Lantus insulin dose, that he decrease his irbesartan intake by remaining on the "Karvezide" but ceasing the "Karvea"; and that he commence instead on Norvasc beginning at 5mg daily, increasing up to 10mg daily. Norvasc is a calcium channel blocker, with the generic name "amlodipine" which is used to treat hypertension. These later changes to the deceased's medications were recommended with a view to bringing the deceased's blood pressure within a healthier range.

On 17 May 2007, the deceased was reviewed by Dr Gnanaharan who also noted the deceased medications, as he understood them to be at that time. Dr Gnanaharan's list largely corresponds with Dr Boers and A/Prof Topliss's list, again with a few exceptions.

1. the deceased's dose of propranolol ("Inderal") is recorded as 80mg twice daily, which reflects Dr Boers' adjustment of 20 April 2007 and is consistent with A/Prof Topliss list;
2. the deceased is on Norvasc 5mg at night, reflecting that Dr Topliss's recommendation of 27 April has been accepted;
3. The deceased's cholesterol medication is listed as "Crestor [**generic name**: rosuvastatin] 20mg nocte", whereas both Dr Boers' and A/Prof Topliss have it listed as simvastatin 40mg daily;
4. There is no mention of Irbesartan at all, suggesting that the deceased has ceased taking both Karvea and Karvezide, although Dr Topliss only recommended the cessation of the first of these drugs.

At the appointment on 17 May, Dr Gnanaharan notes that the deceased is allergic to Coversyl (an "ACE inhibitor") and recommends that his amlodipine "Norvasc" dose be increased from 5 to 10mg and that if, in a few days his blood pressure is not below 130, that the dose be increased further.

On 28 May 2007, the deceased contacted A/Prof Topliss regarding symptons experienced by him after commencing amlodipine "Norvasc" and particularly after the dose was increased from 5 to 10mg. A/Prof Topliss advised him to cease the drug and in a letter, dated 30 May 2007, wrote to the deceased's GP, Dr Norwood, advising him of what had occurred.

In the letter, A/Prof Topliss also discussed an appropriate substitute for the amlodipine "Norvasc" given the deceased resistant hypertension. He noted:

- the deceased's previous possible angio-oedema reaction to ACE inhibitors;
- the deceased's "maximal angiotensin 2 receptor antagonist with thiazide", (i.e. that he was already on the maximum useful dose of "Karvezide"); and
- the fact that the deceased is already on a beta blocker, propranolol ("Inderal"), which he notes should have increased to 80mg three times daily.

A/Prof Topliss suggested that in the circumstances it may be a reasonable option to commence the deceased on a the calcium channel blocker, Isoptin SR 180mg [**generic name**: verapamil]. The SR indicates that the medication is "sustained release". He noted that the combination of verapamil and a beta blocker (like propranolol) should be used with caution and can cause bradycardia and complete heart block. However, he stated that he did not believe that the deceased was at particular risk of these problems. He did not prescribe verapamil ("Isoptin") himself but requested that Dr Norwood follow up to assess if this was a safe an effective combination for the deceased.

The next entry in Dr Norwood's record for the deceased is dated 1 June 2007 and commences "is on Isoptin". This would suggest that the deceased had already been prescribed Isoptin, and commenced using it at this point. It is not clear from the available records who prescribed it, when, and at what dose.

In the early hours of 21 June 2007, the deceased attended the Emergency Department of the Latrobe Regional Hospital concerned about his high blood pressure, which he had measured at home. It was his third attendance at the Emergency Department in 5 months.

The Emergency Department notes record that he saw the GP whilst in the waiting room who advised him to check his blood pressure again and if it had not risen to go home and take a 240mg tablet of verapamil ("Isoptin") and see him again in the morning. His blood pressure was checked and had not risen. The deceased decided to follow the GPs advice and went home. It is not clear when and by whom the deceased was prescribed Isoptin SR in that dose.

There is an entry in Dr Norwood's records for the deceased the following morning, dated 21 June 2007, which notes that the deceased blood pressure was above 200 last night and that he took extra Isoptin. It is then recorded that the deceased is to see Dr Boers soon.

The deceased did attend an appointment with Dr Boers on that same day. Dr Boers noted the deceased attendance at the Emergency Department with hypertension, and that his blood pressure remained poorly controlled.

Dr Boers noted that the deceased was on a moderate dose of propranolol ("Inderal"). It is not clear what Dr Boers understood his propranolol dose to be precisely. That is, it is not clear whether the deceased's propranolol dose had been increased from 80mg two times a day to 80mg three times a day as suggested by A/Prof Topliss and, if so, whether Dr Boers was aware of this.

Dr Boers noted that the deceased had been started on a calcium channel blocker and that this appeared to have resulted in some improvement. He mistakenly understood that the calcium channel blocker the deceased had been prescribed was Cardizem [**Generic name:** diltiazem] and he understood that the deceased's dose of this medication had recently been increased to 240mg. In the circumstances of the deceased's persistent hypertension he decided to "bump this up" further to 320mg. He was aware of the risk of bradycardia and requested the deceased to see Dr Norwood again in a week and to return to see him in a fortnight.

The deceased was unable to fill this prescription because diltiazem ("Cardizem") was not available in the dose prescribed.

As a result, on the evening of 21 June 2007, the deceased again attended Dr Norwood's surgery to seek assistance. Dr Norwood's notes mistakenly record that Dr Boers had prescribed the deceased an increased dose of 320mg of verapamil ("Isoptin") daily, but that no such tablet existed. This was an understandable mistake, given that verapamil was the calcium channel blocker that the deceased had been previously prescribed. Dr Norwood therefore increased the deceased's verapamil ("Isoptin") prescription to 180mg in the morning, and 240mg in the evening. Dr Norwood could have given effect to what he understood Dr Boers' intention to be by prescribing the deceased 180mg in the morning and in the evening, with a total daily does of 360mg, rather than 420mg.

However, given his knowledge of the patient and his past clinical history, he did not consider that the increased dose would expose the deceased to dangerous bradycardia.

The deceased did not return to Dr Norwood to be reviewed after a week, as advised by Dr Boers.

Presentation at the Emergency Department

On the evening of 4 July 2007, the deceased checked his blood pressure and heart rate at home. He found that his heart rate was low at 42 to 45 beats a minute. He telephoned the nurse on call and on her advice attended the Emergency Department of the Latrobe Regional Hospital at 1.20am on 5 July 2007.

At the Emergency Department the deceased was assessed by the Triage Nurse Kris Wells. She took a brief history from the deceased, which included noting that his medications were verapamil "Isoptin SR"; irbesartan/hydrochlorothiazide "Karvezide"; and propranol "Inderal" and that these had been altered numerous times with the most recent change two to three weeks earlier. She checked his vital signs and found his pulse to be 50 beats per minute. She then performed an ECG, which showed a heart rate of 48 beats per minute. She noted that the rhythm was a junctional rhythm, the cause of which can be related to beta-blocker medication. The deceased said he had an "odd feeling", which he had been experiencing for some weeks but that he had no other symptoms.

The deceased was triaged as a Category 4, and when he was told that he may have a wait time of 2 hours, the deceased expressed a preference for returning home instead and seeing his own GP in the morning. He reported that he had only attended the ED because the on-call nurse had told him on the phone to get his pulse checked. Nurse Wells advised him that if he went home then he should hold off taking his evening dose of propranolol "Inderal" which she considered was the possible cause of his slow heart rate. The deceased then left.

Nurse Wells did not retrieve from the Emergency Department Information System details of the deceased's previous presentation and did not make a new entry.

Some time later, the deceased phoned Nurse Wells and reported that his heart rate had now fallen to 40 beats per minute and that he was feeling weak, with no muscle strength. She advised him to call an ambulance.

The deceased returned to the ED by ambulance at 3.44am. His heart rate was now 37, his blood pressure was 115/82, his respiratory rate was 38, he was complaining of shortness of breath and his oxygen saturation was 100%. He was very anxious and highly agitated and nursing staff had great difficulty inserting an intra venous canula ("IVC"). An IVC was eventually inserted but hospital staff were unable to extract any blood from it. An attempt was then made, successfully, to butterfly some blood from the back of the deceased hands. An ECG was performed, which revealed left bundle branch block, and then repeated to assess for changes.

It appears from the records that the deceased was seen by the Hospital Medical Officer, Dr Birks at 4.25. He directed that the patient be given 600mcg of atropine in an attempt to increase his heart rate. This had no effect and when the deceased observations were next recorded at 4.50am his heart rate had fallen further to 28. At this point the deceased was moved into a resuscitation cubicle and the Emergency Department consultant Dr Gary Campain was contacted. While Dr Birk was on the phone to Dr Campain the deceased went into asystolic arrest. Staff followed the procedure for aystolic arrest, performing cardiopulmonary resuscitation (CPR), administering 3 minute Adrenaline IV, ventilation with bag, and mask with oxygen.

When Dr Campain arrived, at approximately 5.07, further atropine IV was administered, and at 5.10 he ordered a trial of Aminophyline bolus given intravenously. The patient remained asystole.

At 5.20, Dr Campain was informed that blood tests had revealed that the deceased had Hyperkalaemia, with a serum potassium level of 7.8mmol/L. This result had apparently been phoned through to the ED shortly after CPR commenced, and as a result 6 units of Actrapid (human insulin) had been administered subcutaneously prior to Dr Campain's arrival. This is not clearly documented in the hospital medical record. Dr Campain ordered that Actrapid, calcium chloride and sodium bicarbonate be administered intravenously.

Resuscitation efforts continued until 5.34am without effect and Mr Kingsun was declared deceased at 5.38am.

Autopsy

A full autopsy was performed at Latrobe Regional Hospital and blood specimens were taken for toxicological analysis.

The toxicology report revealed a concentration of verapamil in the blood specimen of approximately 1.3mg/L, which was said to be in the toxic range. The report noted that blood concentrations of verapamil in 19 deaths attributed to the drug have ranged from 0.9 to 85mg/L.

Toxicity to verapamil may be expressed as severe bradycardia, hypotension and atrioventricular block.

The autopsy report concluded that the deceased's cause of death was cardiac arrhythmia secondary to electrolyte imbalance (i.e. hyperkalaemia) and verapamil toxicity.

Issues for Consideration

The circumstances of the deceased's death and the autopsy results raise two issues for consideration, namely:

- the extent to which the dose and combination of the deceased's various prescription medications contributed to his death; and
- whether or not the staff of the Emergency Department failed to recognise the nature and seriousness of the deceased's condition and respond appropriately on either or both his first or second presentation.

These issues are addressed separately below.

The Deceased's Medication Regimen

I consider that there are four questions relevant to my investigation which arise under this heading.

1. Did the deceased exceed his prescribed dose of verapamil, and if so when?
2. Could the deceased's prescribed dose of verapamil, in combination with his other medications, have contributed to his death, irrespective of whether he exceeded the prescribed dose?
3. Did the deceased's hyperkalaemia result from his medication regimen, and, in particular, was his hyperkalaemia related to verapamil toxicity?
4. If the combination of the deceased's various medications did contribute to his death, was it a foreseeable risk and, if so, a justifiable and appropriately managed one, given the challenge presented by the deceased's complex medical history.

To assist in addressing these questions an expert, independent opinion was obtained from pharmacist, Dr Chris Alderman.

In his Report, Dr Alderman notes that "in general the quality of the documentation regarding the medication taken by the decedent prior to his death is poor."

He does not comment on whether the toxic levels of verapamil detected in the deceased's blood could have been reached on the deceased's 420mg prescribed daily dose of Isoptin Sustained Release.

On the evidence, I think it is highly likely that the deceased exceeded this dose at some point in the days preceding his death. In a statement to the Coroner, Dr Norwood indicated that the deceased had, in the past, taken larger doses of verapamil "Isoptin", up to 480mg daily and that his impression was that the deceased had on occasion amended his daily medication dose himself. It is perhaps understandable that the deceased might take this initiative given that, on his previous presentation to the ED, he had been sent home with the advice to take an additional 240mg of verapamil "Isoptin". Further, when the deceased was reviewed the next day, the step taken to address his persistent high blood pressure was, at least as he understood it, to increase his verapamil dose to 320mg and then, when that was unavailable, to simply increase it further to 420mg daily.

At any rate, Dr Alderman, does not consider that the toxic level of verapamil in the deceased's blood is the only factor to be taken into account. He suggests that several drug interactions potentially contributed to the outcome in this case and in particular that the most important drug interaction was that between the verapamil and propranol, a beta blocker drug.

Referencing several texts, Dr Alderman notes that the cardiac depressant effects of verapamil and beta blockers are additive and can manifest as bradycardia, atrioventricular block, cardiac failure and sinus arrest. The advice proffered in the cited texts is that a combination of verapamil and beta blockers should generally be avoided and only be prescribed where the patient is under strict supervision and in circumstances where more conventional therapies have failed.

With respect to the deceased's significant hyperkalaemia, Dr Alderman notes that it is clearly recognised and documented that the concurrent use of angiotensin receptor antagonists (such as Irbesartan), anti inflammatory drugs (such as Arthrexin) and thiazide diuretics (such as those in combined drug Karvezide) can increase the risk of renal impairment. He concludes that

> *"it is feasible that the concurrent use [of these medications] contributed to renal dysfunction which in turn may have accounted in part for the finding of marked hyperkalaemia... The effect of such marked hyperkalaemia in the context of pre-existing cardiac rhythm disturbance secondary to the combined use of verapamil-propranolol cannot be ascertained definitively but it is reasonable to postulate that this significant hyperkalaemia would have compounded the likelihood of an adverse outcome in this event."*

Dr Alderman also cites a monograph on verapamil which appears in the American Hospital Formulary Service Drug Information Manual 2010 which notes that verapamil toxicity may produce or contribute to hyperkalaemia as well as renal dysfunction.

I can not conclude, based on Dr Alderman's report, that the prescribed dose or combination of any of the deceased's particular medications resulted in his death, given that his likely accidental overdose of verapamil alone is capable of accounting for the outcome. However, it is apparent from Dr Alderman's report, that the deceased's medication regimen carried with it considerable risks, which in the circumstances of verapamil toxicity, substantially increased the likelihood of a fatal result.

The deceased's medical records indicate that the doctors involved in his care were alive to the risks of prescribing verapamil in combination with propranolol and that this course was only embarked

upon when other combinations had proven ineffective in addressing the deceased's hypertension or had resulted in intolerable side effects.

However, the deceased's medical records also indicate that there was a degree of confusion and uncertainty between the deceased's treating doctors about precisely what type and dose of medication the deceased had been prescribed. In the circumstances, this may have compromised the ability of those doctors to accurately and holistically undertake a risk benefit analysis in relation to any particular prescription and to allocate responsibility for monitoring the safety of the dose.

This was perhaps most apparent on 21 July 2007 when Dr Boers prescribed the deceased 320mg of diltiazem on the mistaken belief that he was merely 'bumping up' an existing prescription, and when Dr Norwood, later the same day, prescribed the deceased 420mg of verapamil on the mistaken belief that he was giving effect to a clinical judgment of Dr Boers to increase the deceased's verapamil.

Coordination of care issues of this nature are matters which could be addressed through the introduction of a real time prescription monitoring system, and accordingly I have made a recommendation below on this matter.

Emergency Department Response

In relation to the deceased's initial presentation at the ED, it is important to note that the deceased left of his own volition, rather than wait a possible two hours to see a doctor. He was not discharged or sent home. It would appear that his decision was based in part on the fact that he was asymptomatic and only knew his pulse was low because he had conducted a routine check on his heart rate and blood pressure at home. It is reasonable to surmise that his decision to leave was also based on the lack of immediate concern demonstrated by the hospital staff on checking his vital signs and conducting an ECG.

There is no evidence before me to indicate that deceased's history, vital signs and ECG as noted by the triage nurse ought to have alerted her to the more urgent and serious nature of his condition, and in particular the possibility of verapamil toxicity and/or hyperkalaemia.

With respect to the deceased's second presentation to the ED on 5 July 2007, in a letter to the Coroner dated 4 December 2013, Dr Simon Fraser, Chief Medical Officer at the Latrobe Regional Hospital, stated:

> *"A retrospective review of Mr Kingsun's management suggests a failure, at the second presentation, to recognise his deteriorating physical condition and failure to interpret his ECG as life threatening hyperkalaemia.*
>
> *The notes of the attending nurses record his deterioration when he was seen at 3.47. On the basis of his presenting symptoms, Mr Kingsun should have been triaged at least as a category 2, on the basis of his heart rate and respiratory rate. Once the ECG had been performed, the staff should have recognised the profound abnormalities strongly suggesting hyperkalaemia and instituted immediate treatment, or, at the very least, called in the on-call consultant. There was no need to wait for pathology results as his condition by this time was clear and his symptoms required treatment. Whether immediate treatment would have lessened the effects of verapamil toxicity and prevented his death cannot be determined.*
>
> *Unfortunately, Mr Kingsun's hyperkalaemia did not become apparent to the treating team until after Mr Kingsun went into asystole and pathology results were telephoned by which time it was too late."*

I accept Dr Fraser's frank analysis of the records as correct. I also accept that it is not possible to determine whether, had the ED staff identified the nature and seriousness of the deceased's condition sooner and taken steps to treat his hyperkalaemia sooner, it may have led to a different outcome.

Changes made because of and/or following Mr Kingsun's death

Dr Simon Fraser has reported a number of changes to the practices and protocols of the Emergency Department at Latrobe Regional Hospital in the years following Mr Kingsun's death.

- *Records of Patients*

As a result of Mr Kingsun's death, the Nurse Unit Manager has instructed all staff to record a patient's presentation, even if they leave without being seen.

- *Reading of ECGs*

Any ECG taken must be assessed by an Emergency Department Consultant or senior medical officer at the earliest possible time.

- *On Call Emergency Consultants*

The Emergency Department Consultants are in the Emergency Department from approximately 8am to 10pm. Outside of those hours, they are available by phone and may be recalled in an emergency situation. They are only 5 minutes from the hospital. It has been reinforced with Emergency Department staff, nursing and medical, that if they have a deteriorating patient, are unable to understand or treat a patient's symptoms then they must call the on call consultant.

- *Protocols in the ED*

Protocols about certain common and uncommon conditions were introduced into the Emergency Department under the Director of Emergency Medicine in 2007-2008. A protocol on hyperkalaemia is recorded as being dated December 2008. It is not clear whether there was an earlier one.

- *Education* Programs *and Core Competencies*

An education program is offered to all Hospital Medical Officers and Interns, which includes a session run four times a year on reading ECGs. During their rotation in the ED, interns must demonstrate their competency in cardiovascular assessment. This includes reading ECGs, including ECG suggestive of hyperkalaemia.

- *National Standard 9 of the National Safety and Quality Health Service Standards – "Recognising and Responding to Clinical Deterioration in Acute Health Care"*

The Latrobe Regional Hospital is actively working towards accreditation in this standard.

In a letter to the Coroner dated 26 November 2013, Dr Anthony Boers also outlined a number of changes he has made to his practice in the years following Mr Kingsun's death as follows:

- he uses electronic prescribing and uses generic names of medication;
- patients at his clinic must complete a form where they record any new medications or changes to dosage prior to their consultation;

- from a clinical perspective, he is less aggressive in lowering blood pressure and blood sugar levels in diabetic patients and more focused instead on addressing weight loss and sleep apnoea; and
- he recommends more frequent monitoring of electrolytes to patients on metformin, high doses of irbesartin, beta blockers and anti-inflammatories.

COMMENTS

Pursuant to section 67(3) of the **Coroners Act 2008**, I make the following comment connected with the death:

A little over seven years have now passed since Mr Kingsun's death and yet the coordination of care challenges, so well illustrated by his case, have not been effectively addressed.

In the intervening years, my coronial colleagues have often highlighted the dangers of multiple doctors prescribing medications without a complete and contemporaneous record of what other pharmaceutical drugs have already been prescribed and dispensed to the patient.

Despite this manifest danger, doctors are still heavily reliant on patient self disclosure for this information. This is inherently unsatisfactory. Some patients, engaged in the practice described as "prescription shopping", will have a vested interest in concealing their full prescription history. Others, such as the deceased, with a complex and frequently changing medication regimen, are at risk of making unintended errors and omissions in their disclosure, particularly with respect to dosage or brand name.

For that reason, there is now a long list of coronial recommendations relating to the need for the urgent implementation of a real time prescription monitoring system in Victoria.

Initially hopes in this regard were vested in the development of a national system, implemented and operated in cooperation between the Commonwealth and State Governments, and referred to as the Electronic Recording and Reporting of Controlled Drugs (ERRCD) initiative. However, after two years of limited, and at times contradictory, public information about the progress of this project, nothing tangible has been delivered and the momentum towards real time prescription monitoring has faltered.

Sadly, the rhetoric of the Victorian Department of Health has also shifted from declaring their participation and support for the implementation of a national system, albeit with the usual caveats about the compatibility challenges posed by any federal project, to more equivocal discussion of the '*possible*' introduction of a real time prescription monitoring system. I refer in particular to the letter dated 16 June 2014 from Dr Pradeep Philip, Secretary, Department of Health, and his response to the Recommendations in Jamieson A, Finding into death without inquest, Death of Kirk Steven Ardern, Coroners Court of Victoria, case number 2254 of 2012, delivered on 7 April 2014.

At any rate, the ERRCD, never promised the introduction of prescription monitoring system with universal coverage and was only ever intended to target those pharmaceutical drugs most vulnerable to misuse. In that regard, even if implemented, it would have been of limited utility in Mr Kingsun's case, where the issue was one of coordination of care between prescribers, rather than pharmaceutical drug misuse or aberrant prescribing practices.

It is extremely disappointing that in 2014 there remains no immediate prospect of the introduction of a real time prescription monitoring system to assist practitioners in coordinating care to a patient with complex health needs such as Mr Kingsun.

There appears to be broad acknowledgement now that delivery of a real-time prescription monitoring system is not particularly challenging from a technical perspective. The original

Tasmanian monitoring software on which the ERRCD is based, was developed at a very modest price. Existing applications such as the Project STOP software and various electronic script exchange services, perform functions analogous to those required for a working real-time prescription monitoring system. The biggest challenge appears to be getting the states to work together with the Commonwealth to actually implement the system.

In that context, I await with interest the response of the Department to the Recommendation made by Coroner Hawkins in matter 20064603, delivered on 15 May 2014, in the following terms:

> *I recommend that the Secretary of the Department of Health commit to a timeline for the implementation of real-time prescription monitoring in Victoria, to reduce the harms and deaths associated with longstanding systemic health issues including poor coordination of care and inappropriate prescribing and dispensing. This timeline should include a goal that all Victorian prescribers and dispensers have access to real time prescription monitoring capacity within 12 months from the date I publish this finding.*

In the meantime, it is tempting to postulate that more progress might be made if Victorian doctors and pharmacists stopped waiting while the Victorian Department of Health ponders the business case for "possible" introduction of real-time prescription monitoring in Victoria, and took direct responsibility for making it happen. They are the main intended end-users of any Victorian real-time prescription monitoring system, and the group with the most pressing interest in seeing such a system implemented. Given the ever-mounting death toll resulting from doctors' and pharmacists' inability to access the prescribing information they need to provide appropriate care to their patients, their indemnity insurance underwriters might have a strong financial interest in supporting such an initiative.

While the involvement of government may ultimately be required to mandate or otherwise incentivise the adoption of a real time prescription monitoring system and to ensure its operation is permitted and facilitated under relevant legislation, I would be surprised if these groups acting together could not achieve significant progress.

To this end, I make the recommendation below.

RECOMMENDATIONS

Pursuant to section 72(2) of the **Coroners Act 2008**, I make the following recommendation connected with the death:

> *I recommend that the Victoria Faculty of the Royal Australian College of General Practitioners, the Australian Medical Association Victoria, the Victorian Branch of the Pharmaceutical Society of Australia and the Victorian Branch of the Pharmacy Guild of Australia meet to discuss the feasibility of collaborating to develop and implement a real-time prescription monitoring system to enhance their Victorian members' ability to provide appropriate care to patients and reduce the harms and deaths associated with poor coordination of care.*

I direct that a copy of this finding be provided to the following:

Mrs Paula Kingsun

Dr Terrence Norwood

Dr Anthony Boers

Associate Professor Duncan Topliss

Dr Simon Fraser, Chief Medical Officer, Latrobe Regional Hospital

Dr Pradeep Philip, Secretary, Victorian Department of Health

Victoria Faculty of the Royal Australian College of General Practitioners

Victorian Branch of the Pharmaceutical Society of Australia

Victorian Branch of the Pharmacy Guild of Australia

Australian Medical Association Victoria

Signature:

JACINTA HEFFEY
CORONER
Date: **28 July 2014**