QUEENSLAND COURTS

CORONERS COURT OF QUEENSLAND

FINDINGS OF INVESTIGATION

CITATION:	**Non-inquest findings into the death of CH**
TITLE OF COURT:	Coroners Court
JURISDICTION:	BRISBANE
DATE:	4 August 2017
FILE NO(s):	2015/1730
FINDINGS OF:	Ainslie Kirkegaard, Coronial Registrar
CATCHWORDS:	CORONERS: Complication of NSAID use, timeliness of pathology collection, transport and testing at small rural hospital, senior medical officer failure to follow up and review blood results, failure to consider abnormal pathology result

Contents

Background

CH was a 76 year old woman who died at a district hospital on 11 April 2015. She ordinarily resided in a small rural town. She lived alone.

Mrs H's death was reported to me by the Executive Director Medical Services, of the relevant Hospital and Health Service (HHS) on 30 April 2015 due to concerns that the death may have been health-care related. These concerns related to significant delay in reviewing blood tests taken on Mrs H's admission to a small rural hospital on 1 April 2015.

Mrs H's admission to the small rural hospital on 1 April 2015

Mrs H was admitted to the small rural hospital on 1 April 2015 after being referred by the community nurses with a four day history of left knee pain, poor mobility and inability to cope in the community. She had no previous history of knee pain, she had just woken up with it, but she did suffer from chronic back pain. She also had a past history that included osteoporosis and arthritis.

The Community Health Outpatient notes indicate that Mrs H was seen by the general practitioner on 3 March 2015 for an increase in her back pain. She was commenced on Mobic (an anti-inflammatory) and Losec (to reduce stomach acid). The community nurse saw her again on 19 March 2015 and she had a home visit by the general practitioner for back pain. It was noted that she was taking another anti-inflammatory medication (ibuprofen) as well as the Mobic. She was advised not to take both so she said she would stop the ibuprofen.

On 24 March 2015 Mrs H contacted the community nurse to advise that her back pain had not improved. The nurse notified the general practitioner, Dr T, who prescribed Norspan patches (buprenorphine – a narcotic painkiller). This caused Mrs H some nausea and she had a 'little vomit.' The nurse discussed this with Dr T who advised removing the patch for two days to see if it helped; however Mrs H advised that she had nausea before commencing the patches. It was decided to trial the removal of the patches for two days, and to only take Mobic and Losec. She was advised to call 000 if she vomited blood or had dark bowel motions.

On 30 March 2015 Mrs H called the community nurse for a home visit as she was feeling unwell, with back pain and a painful 'right' (not 'left' as stated in the hospital admission) knee. The nurse noted blood stains on Mrs H's clothing. She reported having been coughing up a bit of blood and also vomiting blood but '*only a little bit*.'

Mrs H said that she had been taking ibuprofen with food and had stopped taking Mobic. She reported that her right heel was sore. On examination there were no wounds but there was 'a lot of skin'. Her toenails were noted to be overgrown and her state of hygiene was considered poor. Mrs H told the nurse that she only usually had a wash as she was scared of falling in the shower.

The nurse suggested to Mrs H that she come into hospital so she could be monitored and for pain relief. Mrs H refused to go to hospital stating '*I will see how I go for the next couple of days*.'

Mrs H presented to the small rural hospital the next day at around 1:00pm.

Mrs H's care at the small rural hospital was shared between Dr D, the locum Medical Superintendent, and Dr CL. Dr D was the locum Medical Superintendent. Dr L was completing a rural rotation as a Junior House Officer at the small rural hospital which he had commenced on 30 March 2015. Dr L was working under the supervision of Dr D.

On weekdays, Mrs H's care was shared between the two doctors, depending on who was on call that day and who was available for ward rounds. Only one of them was on duty a time on weekends and public holidays.

In a subsequent statement, Dr L says that if one of the doctors was on fatigue leave from the night before or if one of the doctors was not rostered to work on a particular day, there was no handover process or system in place for a handover to take place during the morning ward round, other than the previous entry in the patient record.

She was seen by Dr D who noted she had ceased her Mobic and had instead continued Nurofen (ibuprofen) twice a day. It was queried if she had vomited some blood four days previously. There was also a history of diarrhoea that had settled with Gastrostop but that her bowels had not subsequently opened for two days. It was noted that she lived alone and was not coping at home. She had been mobilising with a 4WW however had recently become bed bound due to pain.

On examination, Mrs H's left knee was noted to be tender over the inner aspect but with a good range of movement. The clinical impression was that of a haematemesis (vomiting blood) secondary to non-steroidal anti-inflammatory drugs (NSAIDs). She was admitted and commenced on Somac (similar to Losec in that it decreases stomach acid to assist with reflux, inflamed stomach lining or stomach ulcers), Norspan and paracetamol.

Dr D ordered blood tests and a chest x-ray on Mrs H's admission.

Dr D reviewed Mrs H again at around 8:30pm that evening after an episode of haematemesis (150ml bright red blood). She was noted to be haemodynamically stable at that time. The plan was for her to be nil by mouth, to be administered intravenous fluids and to notify the doctor if there was any further vomiting of blood. It was considered that she required an urgent gastroscopy because of the vomiting of blood but Mrs H was reluctant to leave her hometown.

A nursing entry made the next morning, 2 April, indicates Mrs H slept well overnight.

Dr D and Dr L completed the morning ward round together on 2 April. They explained that she required a gastroscopy and that she might die of a big gastrointestinal bleed. She advised she did not want a gastroscopy despite the risks

of not having it done. She was considered competent to make the decision. This is clearly documented in the patient record.

Dr D was not working at the small rural hospital on 3 or 4 April and was not involved in her care on those days. This was the Easter long weekend with Good Friday, 3 April and Easter Monday, 6 April.

Dr D recalls handing over to Dr L prior to her leaving the hospital on the afternoon of 2 April that Mrs H's bloods required follow up.

On 3 April 2015, Mrs H was medically reviewed and no further vomiting of blood was noted. The chest x ray was discussed with a radiologist in Toowoomba who advised there were no acute features. Dr L says he followed up the blood test results that day but when he checked, no blood results were available. He says he followed up with nursing staff who told him that Mrs H's blood samples had not been sent to the district hospital for testing. He says he was told they would be sent to the district hospital by courier the next day.

When medically reviewed on 4 April, it was noted the blood tests needed to be chased up. Dr L followed up the blood test results that day and noted that Mrs H's haemoglobin was 108. He says all of the remaining blood results were unavailable – this is why he made the notation "*Chase the bloods and chest x-ray report*" in the patient record.

Dr L was rostered off over the following two days.

Dr D returned to work on 5 April and reviewed Mrs H that morning, noting her to have no further vomiting of blood or any abdominal pain. The Somac infusion was ceased and substituted by oral medication. Dr D's impression was that Mrs H was improving, and her primary concern relating to left knee pain.

Dr D says she did not recall receiving any handover that there were blood tests that needed following up. She assumed the tests that had been ordered on admission had already been checked and managed. I do not accept this explanation given Dr L's very clear notation in the medical record which was there to be seen by Dr D.

Dr L says there was no process for him to provide Dr D with a handover regarding any patients prior to him being rostered off on 5 April beyond what he recorded in the patient records that day. He did not receive any communication from Dr D on 5 April requesting information about Mrs H.

Dr D says that based on the information handed over to her about Mrs H when she returned to work on 5 April, she understood her condition was stable and she was eating and drinking and further blood testing was not clinically indicated. She says had she known the results from the bloods taken on admission, she would have arranged repeat blood tests and would have monitored her fluid balance more closely. It is most unfortunate that Dr D did not take the action Dr L had clearly flagged needed to be taken in relation to following up the blood test results.

On 6 April Mrs H was not mobilising due to left knee pain. She reported that her left leg was swollen. When examined by Dr D mid-morning, it was noted there was '*generalised diffuse minor swelling to the left upper leg*' but it was soft and not tender. The left knee showed no swelling, warmth or tenderness. She was referred to the physiotherapist for review.

Dr D and Dr L completed the morning ward round together on 7 April. Mrs H was still not mobilising due to pain but was also refusing painkillers as she could not swallow them. The physiotherapist noted the history of chronic low back pain which Mrs H stated was not the problem at the time; it was her left knee and also pain in her right heel. She flatly refused to mobilise. She was considered not appropriate for any further physiotherapy.

Dr L says Dr D did not mention to him that Mrs H's blood results were still outstanding. He mistakenly believed that she would have followed them up over the previous two days when he was rostered off. He says had he been told the blood results were still outstanding he would have followed them up immediately.

Dr L's statement expresses his surprise, during the first two weeks of his rotation at the small rural hospital, at the "generally lengthy delays" between ordering bloods and receiving the results from the district hospital.

On 8 April Mrs H was encouraged to mobilise; she had vomited tramadol (a painkiller) and an anti-inflammatory gel was prescribed for her knee.

Dr L was not involved in Mrs H's care after 8 April as he was rostered off on fatigue leave thereafter.

Mrs H's transfer to the district hospital

Dr D completed the morning ward round with a medical student on 10 April. She noted Mrs H looked unwell with cyanosed fingertips. Bruising on the right thigh was noted though Mrs H denied any falls; further she stated the bruises were there before her admission to hospital. Pressure areas had developed and dressings were applied; she was encouraged to mobilise.

After this ward round, Mrs H's daughter phoned the hospital and spoke with Dr D expressing concern regarding her mother's agitation and confusion as she had been receiving irrational phone calls from her. It was at this time when the results of the blood tests taken on 2 April were reviewed.

The blood test results returned a low blood sodium at 124mmol/L (normal range: 135 – 145) and demonstrated slightly impaired renal function with a blood creatinine at the upper limit of normal (99umol/L) and a decreased GFR of 48 ml/min as well as folic acid deficiency.

A full blood count that was also done on 2 April showed a slightly reduced haemoglobin at 108 (normal range: 110 – 165) with a reduced haematocrit at 0.31 (normal range: 0.34 – 0.47), which can indicate some blood loss.

The plan was to re-do the blood tests and to perform a urine test. Mrs H was prescribed folic acid (vitamin B9) supplements. The bloods were sent with the courier to the district hospital for testing.

There was no repeat full blood counts done after that, including it seems, when blood was taken on 10 April – this may be due to the fact the specimen clotted when it was being taken so was not sent for testing.

Dr D says she reviewed Mrs H numerous times throughout the day.

Later that afternoon, Mrs H's blood pressure dropped to 80 systolic (low) with cyanosed fingers. Dr D was contacted and arranged for her to be moved to the emergency department for monitoring with 15 minute observations. A drip was inserted to commence intravenous fluids to address her low blood pressure; however the drip ceased to function after 10 minutes. Dr D was unable to insert another cannula so Mrs H was taking small amounts of fluid orally.

Dr D arranged for Mrs H to be transferred to a private hospital in Toowoomba. The admitting physician, Dr R, advised her to continue Mrs H on intravenous normal saline quarterly until she could be transferred. Dr D then contacted QCC to arrange the transfer but was told a plane could not be arranged until the following morning. She spoke with one of the QCC doctors advising they were unable to gain intravenous access or do further pathology at the small rural hospital. For this reason, it was decided to transfer Mrs H to the district hospital for monitoring and management until she could be flown to Toowoomba.

Mrs H stated that she wanted basic life support but not advanced life support. She did not want to be intubated and ventilated, or to have CPR.

According to a retrospective nursing note made on 13 April 2015, Mrs H had an episode of unresponsiveness while being monitored in the emergency department at the small rural hospital on 10 April. This was associated with a heart 'rhythm change' (the type of rhythm is not documented) for about 30 seconds after which she reverted to a normal heart rhythm. Dr D was notified and reviewed Mrs H. She discussed this with Retrieval Services Queensland.

In the referral letter written to the district hospital on 10 April, it was documented that Mrs H had acute renal failure and low sodium likely secondary to dehydration. It was further stated that she had presented to the small rural hospital on 1 April 2015 with a suspected upper gastrointestinal bleed secondary to anti-inflammatory medication that was being prescribed for pain due to osteoarthritis.

The letter states that '*bloods today'* (presumably meaning the blood tests done that day – 10 April) showed a low sodium of 121 mmol/L (normal range: 135 -145) and a poor glomerular filtration rate (GFR) of 27 ml/min (normal range is greater than 60) with a high creatinine (161 umol/L; normal range 46 – 99); that is to say acute renal failure. There was no full blood count done.

The letter explained that Mrs H previously had normal renal function when seen by her general practitioner in 2013. Swelling from fluid was noted in the left leg and left arm and the bruising to the right thigh was documented.

The episode of unresponsiveness associated with a heart 'rhythm change' is not mentioned in the referral letter.

Further, the referral letter did not mention that blood tests had been done on 2 April or the results of those blood tests.

Mrs H was seen at the district hospital at 10:55am on 10 April 2015 with acute renal failure, low blood sodium, low blood glucose and no intravenous access. An intraosseous line was placed in the right tibia. This procedure is used when it is difficult to cannulate a patient's veins; fluids can then be infused through the bone marrow into the body. Apparently there was no intraosseous device at the small rural hospital.

She was considered to be cognitively intact on arrival but severely dehydrated and peripherally shut down. Fluids were commenced but she then deteriorated and died at 1:40am on 11 April 2015 with her family present, who agreed with the decision to transition her to comfort measures only.

A cause of death certificate was issued stating the cause of death to be acute renal failure, due to dehydration due to an upper gastrointestinal bleed.

The circumstances of Mrs H's death were not discussed with the coroner at this time.

Due to the reporting delay, there was no opportunity for a coronial autopsy to be performed.

Root cause analysis outcomes

I am advised that due to concerns raised by the medical staff at district hospital about the delay in reviewing the blood tests taken at the small rural hospital on 2 April 2015 and Mrs H's poor condition, the relevant HHS commissioned a root cause analysis (RCA) of the care provided to Mrs H by the small rural hospital.

This is a systemic analysis of what happened and why and is designed to make recommendations to prevent adverse health outcomes from happening again, rather than to apportion blame or determine liability or investigate an individual clinician's professional competence. It is conducted by a review team who had no involvement in Mrs H's care.

The commencement of this review process then prompted the HHS to report Mrs H's death to the coroner.

I received the final RCA Report on 11 June 2015.

The RCA review team identified the following contributing factors:

- clinical staff were confounded by Mr H's non-compliance – this impacted on all of the locum doctor's judgement resulting misinterpretation of clinical signs and symptoms, incorrect assessment or under-assessment of her status and a delay in treatment escalation for further treatment. The RCA review team considered this in turn led to Mrs H's early demise;

- communication and graded assertiveness issues between two medical staff and between some nursing staff and the medical staff also impacted on the recognition and interpretation of clinical signs and symptoms and Mrs H's deterioration;

- limited or absent clinical handover between treating medical officers due to fatigue leave; and

- a faulty printer used for pathology result printing.

The RCA review team made a suite of recommendation to address those issues:

❖ Recommendation 1 – relating to pathology collection, review and action

➢ all pathology results to be reviewed by the medical officer as soon as possible after pathology processing either via hardcopy or electronically; pathology must be signed off and documented in the patient records along with the treatment plan for any variances from "normal" (HHS wide) – as at November 2016, all staff have a laptop for use in the Emergency Room and on Ward Rounds to facilitate bedside access to all test results

➢ orientation on how to access pathology results and how to use the electronic systems (The Viewer/AUSCARE/AUSLAB) must be provided to all medical staff (temporary and permanent) + Escalation of Clinical Issues/Supervision on commencement (HHS wide) – this has since become a routine part of the Medical Officer Orientation at the hospital and registered nurses now all have access to these systems as a backup

➢ orientation including how to access pathology result and how to use the electronic systems (The Viewer/AUSCARE/AUSLAB) must be provided to all nursing staff (HSS wide) – this has since become part of the facility orientation by the Director of Nursing/Senior Nurse on shift when a new Medical Officer commences

➢ The HHS to develop a HHS procedure for pathology collection, review and action (HHS wide)

I have sighted the HHS-wide memorandum which makes clear the expectation that:

- every doctor will ensure all laboratory results (either paper or electronic) are checked and signed every day that the practice is open

- each doctor is responsible for checking all unsigned results whether they come from investigations ordered by them or another doctor – responsibility for patient care rests with the doctor working at the time
- practice administrators or nursing staff are to check the results in-box every day and ensure it is cleared; and
- all abnormal results or results requiring follow up must be entered by the doctor into the recall system.

I have also sighted the HHS Procedure for the Management of Pathology Collection and Radiology Results (April 2016) which requires staff to ensure:

- where facilities do not have onsite pathology laboratories, all pathology specimens are collected prior to pathology courier arrival time
- a medical officer must sign off on each pathology report
- each facility/ward/emergency care or department will have a system for medical officers to check results and follow up with patients where necessary.

➢ the Journey Board and handover sheet should be used as a flag until all current pathology results for inpatients have been reviewed [may require reconfiguration of the staff station to ensure that the Journey Board can be easily viewed] (the small rural hospital) – in the absence of sufficient funding to modify the staff station and move the journey board, an alternative strategy has been implemented whereby a standalone lap top is now used for Patient Flow Manager. I am advised that observational auditing of Patient Flow Manager has shown a marked improvement in use and timeliness of completion of tasks.

➢ Clinical staff must ensure that printer which receives pathology results is operational on a shift per shift basis; if the printer is not functioning alternative arrangements must be made to redirect/receive pathology results (the small rural hospital)

❖ Recommendation 2 – a procedure/guideline for the administration of intravenous pantoprazole be developed for use in the HHS to ensure that patients are correctly monitored before and during the infusion (HHS wide) – developed and published as at November 2016

❖ Recommendation 3 – management of patients with low BMI on admission

➢ All patients with low BMI on admission must be immediately referred to dietician for further assessment (HHS wide) – staff have received further training in the use of Patient Flow Manager to ensure prompt electronic allied health referrals
➢ All patients with poor oral intake/appetite must have their intake monitored using a food chart +/- fluid balance chart (HHS wide) – practice in place at the small rural hospital as at November 2016

❖ Recommendation 4 – intraosseous devices

- Intraosseous devices must always be available for emergency use; emergency supplies must be procedure from the nearest hub until standard orders are received if supplies have been exhausted (HHS wide) – staff orientation and signage implemented to ensure staff awareness that emergency supplies can be borrowed from district hospital Emergency Department until orders arrive

- Medical Officers and Registered Nurses should have training or access to on-line modules in the use of intraosseous devices (HHS) http://www.arrowezio.com/procedure-intraosseous-access/demonstrationof-ezio-vascular-access-IO-drill - I have sighted the HHS procedure for use of intraosseous devices and noted training has been delivered.

❖ Recommendation 5 – recognition and response to clinical deterioration

- All Q-ADDS charts [& CEWT] must be correctly completed including all columns must be scored and actions/escalations recorded as per the HHS procedure Clinical Observations (Recognition and Management of the Deteriorating Patient) and the on-line Recognising and Responding to Clinical Deterioration education (HHS) – compliance is being audited through annual Queensland Bedside Safety Audit

- All nursing staff must read and sign for the procedure Escalation of Clinical Issues (the small rural hospital) – completed as at November 2016.

❖ Recommendation 6 – recognition and response to clinical deterioration

- All clinical staff be provided with training in how to assess the hydration/dehydration status of a patient (the small rural hospital) – nursing staff have since received training delivered by a Senior Medical Officer

- The HHS Workforce Development Unit develop a face to face scenario-based Recognising and Responding to Clinical Deterioration training program where a workbook must be completed and staff must pass 100% (HHS wide) – I am advised that as at November 2016 the small rural hospital nursing staff had received this training.

❖ Recommendation 7 – communication with family members

- Where possible, family members should be involved in discussions/decision about treatment plans. This may occur as a formal case management meeting or as opportunistic involvement where the patient is reticent to follow best practice advice. Both medical officers and nursing staff are responsible for ensuring that this occurs or is at least offered and documented (HHS wide) – as at November 2016, the community/CHIP nurse had responsibility for ensuring family case management meetings occur when required

- All clinical staff to have refresher training in Ryan's Rule Patient/Family Escalation of Concerns and responsibilities associated with education of

patients/their families (the small rural hospital) – as at November 2016, this training had been provided

- Directors of Nursing to ensure that Ryan's Rule posters and brochures are prominently displayed in the inpatient area & that patients/families are oriented to Ryan's Rules on admission (HHS wide) – implemented as at November 2016.

❖ Recommendation 8 – escalation of clinical or workplace issues

- All nursing staff to receive/repeat graded assertiveness training [on-line or face to face] and to understand when to escalate clinical or workplace issues to Line Manager or above (the small rural hospital) – as at November 2016, staff had completed graded assertive training online and additional Communication and Patient Safety Training was being rolled out to all the HHS facilities

❖ Recommendation 9 – orientation of medical officers

- The HHS must ensure that ALL medical officers are provided with orientation to the HHS and the local facility environment including escalation paths and communication within the hub and spoke model. A clear doctor's orientation manual must be available and there must be clearly assigned responsibility for ensuring that every medical officer completes this orientation with a signed checklist available as evidence (HHS wide)

- Orientation of Medical Officers to include fatigue assessment and correct fatigue management and escalation processes [online learning program for medical officers] (HHS wide)

  As at November 2016, the Executive Director Medical Services HHS was developing online orientation for all the HHS medical officers, with some orientation available on the HHS intranet but not accessible until the medical officer is in the facility. This was expected to be completed in January 2017.

- Revisit rostering for nursing staff to minimise cumulative fatigue (the small rural hospital) – I am advised this was completed as at November 2016.

❖ Recommendation 10 – emergency transfers

- All patient transfers/retrievals for emergency management must have intravenous or intraosseous access and a Medical Officer escort for transfer (the small rural hospital) - I am advised at that November 2016, all recent transfers have had a minimum of two intravenous/intraosseous sites insitu.

❖ Recommendation 11 – ward rounds

- HHS developed a procedure for ward rounds including nursing and medical officer responsibilities – developed and implemented as at November 2016.

Outcome of the HHS meeting with family

I am advised that a patient safety representative of the HHS met with Mrs H's daughter on 7 August 2015 to discuss the RCA findings and recommendations. Mrs H's daughter raised a number of concerns about the care provided to her mother at the small rural hospital including staff inability to advise when blood tests would likely be available, lack of contact by hospital staff about changes in her condition, delay in transfer to the district hospital (because the nurse had to come with the ambulance from the district hospital location rather than a small rural hospital nurse go with the local ambulance to the district hospital) and the lack of family involvement in the care planning until the events of 10 April 2015. I am advised Mrs H's daughter was satisfied with the RCA outcomes and proposed changes to the medical staffing model for the HHS.

Subsequent medical officer staffing changes within the HHS

Following Mrs H's death, the rural medical coverage was changed, on an interim basis, so that the small rural hospital had three consistent senior medical officers on rotation (one present at a time) with one junior country reliever coming from Toowoomba, Gold Coast or Brisbane. This change was considered to help improve the continuity of care at the small rural hospital and allow for the supervision and support for junior medical officers until a permanent senior medical officer would be recruited to the small rural hospital.

I am advised that as at July 2017, the current model at the small rural hospital is one permanent senior medical officer in the small rural hospital with junior country medical officers offering relief, rather than both the senior and the junior medical officers being locums. The HHS considers this model provides consistency of health in the community; patient and family rapport with the treating medical officer and improved confidence in the local health services.

The current permanent senior medical officer has been at the small rural hospital since May 2016.

A permanent Director of Medical Services has been appointed to the district hospital in addition to the HHS Executive Director of Medical Services. The district hospital also provides support by phone or Telehealth to the small rural hospital, as required.

Independent clinical review outcomes

I arranged for an independent doctor from the Department of Health Clinical Forensic Medicine Unit to review the patient records and the RCA outcomes and provide advice about whether there may have been an opportunity to have prevented Mrs H's death.

The reviewing doctor agreed with the RCA review team's conclusion that Mrs H was under-assessed with a delay in, and timely escalation of, treatment leading to her

early demise; however was not sure that this could be attributed totally to her 'non-compliance.'

The reviewing doctor noted that Mrs H had been admitted with a diagnosis of gastrointestinal bleeding (vomiting blood) due to the use of anti-inflammatory medications, a recognised side-effect of these medications. A full blood count blood test was done on admission to check her haemoglobin. It was slightly reduced and with a reduced haematocrit, which may have supported this diagnosis. She was also told she could die if a gastroscopy was not done to identify and treat any bleeding. She was treated for the possibility of gastrointestinal bleeding with intravenous pantoprazole.

The reviewing doctor commented that with all this in mind, why the initial full blood count results would not be chased up as soon as possible is difficult to explain; they had been ordered. If the clinical impression was that Mrs H was bleeding, then reviewing her haemoglobin and haematocrit in a timely manner was important, as was repeat full blood counts to see if the haemoglobin and haematocrit were stable or worsening. The reviewing doctor observed that while Mrs H did not want a gastroscopy because she did not want to leave her hometown, that did not mean active monitoring should be reduced; quite the contrary, it should be enhanced.

The reviewing doctor noted there were no further full blood counts performed, so there is no way of confirming that Mrs H was bleeding or continued to bleed into the gastrointestinal tract, although the death certificate states the underlying cause of death is considered to be due to the gastrointestinal bleeding, which is probably reasonable given the history.

Similarly, blood tests for electrolytes and kidney function were taken on admission to hospital but not reviewed until 10 April when Mrs H deteriorated. The reviewing doctor considered that if these tests had been reviewed in a timely manner then her significantly reduced blood sodium would have been recognised and her kidney function more closely monitored.

The reviewing doctor advised that Mrs H's reduced oral intake and mobility as her admission progressed meant that any impaired renal function would only worsen against this background. The reviewing doctor commented that if one calls her reduced oral intake and mobility '*non-compliance*,' then again monitoring of her electrolytes, renal function and fluid balance should have been enhanced.

The reviewing doctor considered that RCA Recommendation 1 will greatly assist in making sure that medical staff has timely access to the pathology results ordered. The clinical situation at a given time should be driving the need to review test results to guide management and medical staff need to be proactive in seeking out results. The 100% compliances as detailed in the outcome measures for this recommendation should ensure that staff do so.

The reviewing doctor noted that the RCA review team identified graded assertiveness issues between the two medical staff, and between some nursing staff and the medical staff, as having adversely impacted on the recognition and interpretation of clinical signs and symptoms and the patient's deterioration but the

RCA report does not expand on the dynamics that were at play in this regard. However recommendations 5, 6, 7, 8, 9 and possibly 11, if implemented, should provide the tools necessary for medical and nursing staff to firstly recognise and then manage the deteriorating patient in a more collaborative and timely manner. The reviewing doctor also felt that it should also keep medical staff focused on active treatment when this is indicated, and not be wrong-footed by a patient who chooses not to agree to a particular course of action.

The reviewing doctor felt the other RCA recommendations were mostly procedural and should enhance patient care and safety. The apparent lack of availability of intraosseous devices at the small rural hospital was an important discovery as they are particularly useful in young children as it can be difficult to find veins.

The reviewing doctor concluded that Mrs H was not well managed during her admission at the small rural hospital. While the reviewing doctor did not consider that her perceived non-compliance can explain or justify her blood tests on admission not being reviewed for eight days, it appeared that the RCA process has addressed the key issues arising in relation to her care, which should result in improved patient care and safety.

Findings required by s. 45 of the *Coroners Act 2003*

Identity of the deceased: CH

How she died: CH died from complications of a likely upper gastrointestinal bleed associated with non-steroidal anti-inflammatory drug use. Although Mrs H firmly resisted the prospect of having to leave her hometown for further investigations, delays in transporting her admission blood samples to the district hospital for testing coupled with Dr D's failure to take action to follow up the outstanding blood results upon her return to work on 5 April (despite a junior doctor's efforts to flag this as needing to be done) contributed to a missed opportunity to have maximised her medical management. I am reassured by the swift action taken by the HHS to examine and identify the deficiencies in Mrs H's care and to implement a range of significant improvements, particularly around the collection of pathology samples and review of pathology results and associated follow up. I am further reassured by the revised medical staffing model at the small rural hospital which I consider will assist greatly in improving the standard of patient care at that facility.

Place of death:	Rural Queensland, Australia
Date of death:	11 April 2015
Cause of death:	1(a) Acute renal failure 1(b) Dehydration 1(c) Upper gastrointestinal bleed

I close the investigation.

Ainslie Kirkegaard
Coronial Registrar
Coroners Court of Queensland

04 August 2017