



CORONERS COURT OF QUEENSLAND

FINDINGS OF INVESTIGATION

CITATION: **Non-inquest findings into the death of PS**

TITLE OF COURT: Coroners Court

JURISDICTION: Brisbane

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FINDINGS OF: Ainslie Kirkegaard, Coronial Registrar

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Background

PS was a 68 year old woman who died at a rural hospital on 11 October 2015.

PS' death was reported to the coroner because of concerns she may have been discharged from hospital too soon.

PS' medical history

Review of PS' medical records shows she had a past medical history of type II diabetes mellitus, high cholesterol, stage III renal failure, chronic obstructive pulmonary disease high and depression. She had reportedly not been hospitalised for over 37 years. She was a previous smoker.

PS was first seen at the rural hospital for physiotherapy on 18 September 2014, after being referred by her general practitioner on 28 August 2014 following a respiratory illness.

She next presented to the rural hospital emergency department on Thursday 8 October 2015 on referral by her general practitioner with a history of vague chest pains for two days associated with increasing shortness of breath (from being able to manage 100 yards to barely able to get to her feet). She had also complained of increasing lower limb swelling, shortness of breath on lying down (orthopnoea) and waking with shortness of breath from her sleep (paroxysmal nocturnal dyspnoea).

PS was reviewed by a junior who admitted her with suspected congestive cardiac failure, with possible ischaemic heart disease as the cause. Initial troponin test for ischaemia was within normal range (0.04) and a BNP (brain natriuretic peptide, a marker for cardiac failure) was quite high at 928. An ECG showed a left bundle branch pattern (LBBB) which was deemed 'new'. The admitting doctor noted PS had seen a cardiologist in the past (erroneously thought to be in September 2015; it was in fact 2014) and that an echocardiogram at that time was suggestive of regional wall motion abnormality in the anterior wall of the left ventricle, suggestive of ischaemic heart disease.

PS remained in hospital overnight. Her usual frusemide (diuretic) dose was doubled to 40mg and she was placed on supplemental oxygen as required and a nitroglycerine patch.

When seen on the morning ward round at around 8:30am, Friday 9 October, she was thought to appear much better. Chest x-ray showed changes of congestive cardiac failure and ECG again showed LBBB. The decision was to await a serial troponin test and if negative, to discharge her home on an increased dose of diuretic and for follow up with her general practitioner on Monday.

At around 10:00am, PS was noted to have some right sided chest and shoulder pain. She was reviewed by the resident medical officer who noted the pain as a constant ache. On examination her heart rate was increased to 120 beats per minute, pulse regular. An ECG showed LBBB with a hint of ST segment change in leads II and III, however when the RMO notified the senior medical officer of this finding, this was deemed to have been present on the previous ECG. The second troponin test came back at 0.033 (normal), PS was recommenced on her metoprolol and was discharged home at 11:40am that day.

PS represented to hospital in the early hours of Sunday, 11 October 2015 in acute respiratory distress. She had woken at 11:30pm quite short of breath. She reported a previous episode of shortness of breath at 3:00am the previous morning but had not presented to hospital.

On arrival she was extremely short of breath with poor oxygen saturation (respiratory rate 44; oxygen saturation <84% on room air) and tachycardic (100 beats per minute). She was normotensive, pale, cold and alert. ECG showed a junctional tachycardia with LBBB pattern. The on-call Senior Medical officer was informed and arrived at the hospital within 10 minutes of PS' presentation.

PS' acute respiratory distress was thought secondary to acute pulmonary oedema. She was commenced on supplemental oxygen initially via Hudson mask (later changed to a non-rebreather mask), topical GTN and intravenous diuretic therapy. Her level of consciousness deteriorated and she became unresponsive at 2:40am. QCC was contacted at this time with a view to arranging retrieval to a higher level facility for further management.

She went into cardiac arrest at around 3:00am and was resuscitated. Retrieval to Toowoomba Hospital was arranged. She was commenced on non-invasive ventilation with BiPAP from 3:20am. At 5:15am she was intubated in preparation for transfer to Toowoomba. She arrested again at 5:30am but despite emergency resuscitation efforts was unable to be revived.

Preliminary independent clinical review

The then Deputy Registrar arranged for an independent doctor from the Department of Health Clinical Forensic Medicine Unit to review the patient record and advise whether there may have been a missed opportunity to have prevented PS' death. I was particularly concerned about the possibility she had been discharged from hospital prematurely.

The reviewing doctor expressed a range of concerns about the management of PS' admission on 8-9 October 2015 and was very concerned she had been discharged home far too early as her condition had not been fully differentiated. In this regard:

- the high BNP was concerning;
- she had a number of chronic issues that increased the risk of cardiac disease significantly including diabetes, hypertension, raised cholesterol;
- there was a concern over a previous echocardiogram - the LBBB ECG pattern was deemed 'new' which alerts one to the presence of underlying ischaemic heart disease. The evidence of two troponins in sequence showing no rise might exclude an infarct in that timeframe but did not exclude one prior to the admission, which may have precipitated the presentation with heart failure;
- there was no test of the medication change doing anything for her - the reviewing doctor considered it would require that she be admitted for a number of days to monitor effect of diuresis (particularly in the presence of kidney disease) including fluid balance charts and daily weighs;
- there was no evidence that anyone got her out of bed to see if she was short of breath on exertion; and
- review of her observation chart revealed early warning and response scores of 4-5 on discharge, including a heart rate of over 110/minute.

On this basis the reviewing doctor considered there was very strong evidence to argue for a longer and more investigative admission.

The reviewing doctor considered measures such as fluid balance and weights could easily be managed at the rural hospital, while other more specialised testing (including echocardiogram; cardiology review +/- angiogram, stress echo) would possibly require referral to a centralised area such as Toowoomba.

The reviewing doctor was concerned that the circumstances of PS' death raised questions about how acute cardiac conditions were being managed on an inpatient basis at the rural hospital.

In view of these concerns, the then Deputy Registrar declined to accept the proposed cause of death certificate.

Autopsy findings

An external examination was performed at the John Tonge Centre on 20 October 2015. The post mortem examination was scheduled to accommodate a family viewing and funeral service. Post-mortem CT scan showed diffuse coronary artery calcification in the left anterior descending and circumflex arteries as well as bilateral pulmonary oedema and bilateral pleural effusion, suggestive of congestive cardiac failure.

Having regard to these findings and the clinical information, the pathologist attributed the death to coronary artery disease which he explained as covering a range of acute and chronic complications that can result from chronic deposition of cholesterol in the coronary arteries.

Hospital & Health Service clinical review outcomes

The relevant Hospital & Health Service (HHS) subsequently commissioned a root cause analysis of the care provided to PS. 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 the patient's care. This RCA was informed by clinical expert input.

The final RCA report and chain of events documents were provided to the Deputy Registrar on 4 January 2016.

I am advised that the HHS met with PS' daughter to provide open disclosure on 5 November 2015 and again on 3 February 2016 to discuss the RCA outcomes.

The admitting Senior Medical Officer was interviewed as part of the RCA process, advising that:

- PS' clinical course during her admission was a 'rapid improvement';
- clinically, PS presented as congestive cardiac failure (CCF) – a BNP was sent for processing to confirm this clinical diagnosis;
- while awaiting the BNP result, PS was treated aggressively with loop diuretics to which she was observed to have a reasonable response with urine output;
- by the next morning she was symptomatically better and requesting discharge home – at this time she had been self-mobilising around the ward to go to the toilet and was observed to do well;
- PS reported right side chest pain and shoulder pain at 9:50am that morning and a full set of observations were taken;
- despite her recent chest pain, the only ECG change seen was a bundle branch block which made interpretation of ischaemic features difficult;
- she was checked for signs of a NSTEMI with repeat ECG and troponin, which proved negative – it was thought unlikely that she had a significant component of ischaemic heart disease or that progression of that disease contributed to her presentation; and
- the plan at discharge was to increase her oral diuretic dose, have repeat electrolyte check and GP review within days.

The RCA team identified a not insignificant constellation of 'contributing factors' and made a range recommendations to address them. However, it stopped short of attributing a root cause that may have prevented the decision to discharge PS on 9 October 2015, and instead several identified a number of 'lessons learnt'.

Lesson Learnt #1: Improved recognition of abnormal vital signs and potential clinical deterioration and ensuring a timely response to clinical deterioration

The RCA team noted the early warning & response observation tool, Q-ADDS, was not used for clinical escalation during PS' admission – the absence of follow up or acting on triggers indicated on the Q-ADDS form meant nursing staff failed to repeat a full set of patient observations and pain assessment and/or escalate those results to the medical officer prior to PS' discharge home.

In relation to PS' representation to hospital in the early hours of 11 October 2015, there was a lack of clarity around who to call and when to call after hours Medical Emergency/Code Blue. The RCA team noted at that time, there were two nursing staff on night duty who were responsible for inpatients, outpatient walk-ins and emergency admissions; Senior Medical Officers and theatre staff were on-call. The escalation to on-call staff was staggered with only one Medical Officer being notified initially and the on-call Locum Anaesthetic Senior Medical Officer not notified for some time afterwards. TEMSU or videoconferencing with QCC was not utilised immediately.

These issues prompted HHS-wide recommendations:

- ensure all clinical staff receive education and training in the use of early warning & response system tools (CWET & Q-ADDS) and escalation of care
- the frequency of clinical observations and recording of pain levels be consistent with the acuity and clinical condition of the patient
- when a rapid response is required for patients with Q-ADDS & CEWT score "E" after hours, staff are to immediately call a Medical Emergency/Code Blue, mobilise on-call clinical staff and contact QCC as per the Q-ADDS instructions
- check the accurate completion of observation forms and appropriate escalation of elevated scores with each bedside safety check
- use progress notes to record longer entries on interventions in response to vital signs transcribed to the observation part of the Q-ADDS chart e.g. paracetamol given for elevated temperature; Nifedipine given for elevated blood pressure; oxygen therapy commenced and Medical Officer notified
- regular reports on trended aggregate incident data and outcomes of clinical case reviews and other forms of investigation should be provided at ward meetings; feedback should also include changes made and improvements achieved as a result of these recommendations/amendments to practices.

I am advised that as at July 2016, these recommendations had been fully implemented. Audit of the rural hospital charts in June 2016 indicated 90% of patients had a correctly documented observation monitoring plan.

At that time, the rural hospital was one of the sites within the HHS trialling a new inpatient Q-ADDS form.

Lesson Learnt #2: Nursing staff education, equipment and procedure

The RCA team considered PS was clearly very sick before she arrived at the hospital in the early hours of 11 October 2015, and felt it most unlikely that her trajectory could have been reversed. However, they identified a range of opportunities for improvement.

PS' daughter reported a concern that when she took her mother to hospital that night, night staff responded slowly to open the front door and provide assistance. Review of the CCTV footage shows the response time for staff to bring a wheelchair to the ground floor and open the door was two minutes - a reasonable timeframe.

The medication chart indicated PS was prescribed 20mg IV morphine over the period 1:00am – 1:15am – following interviews with staff it was confirmed only 10mg IV Morphine was titrated during this time with the second 10mg morphine ampoule recorded in the Controlled Drug Book as discarded and not given to PS.

The RCA team noted there are persuasive reasons for using IV morphine in the treatment of respiratory distress and the tenets of good management include judicious titration with doses at short intervals to the lowest effective dose. It recommended that clinical staff be informed to administer IV morphine extreme caution in patients with pre-existing respiratory depression and renal impairment. In these patients, even usual therapeutic doses of IV morphine may increase airway resistance and decrease respiratory drive to the point of apnoea – a lower dose range is recommended commencing with 2mg, then 0.5-1mg increments slowly and repeat every 3-5 minutes to a maximum of 10mg.

Staff were unfamiliar with the use of non-invasive ventilation (BiPAP) – in this regard the RCA team noted non-invasive ventilation is considered first line therapy for the treatment of type II respiratory failure. While PS' response to an earlier application of BiPAP is unknown, this therapy is suggested for patients in this type of scenario early oxygen restriction. It advised that BiPAP may also help resude acidaemia and hypercarbia and may reduce the immediate need for intubation. To address this lack of knowledge, the RCA team recommended:

- nursing staff education for non-invasive ventilation using BiPAP
- each HHS facility to provide Clinical Coach or experienced assessors to assist with formative and summative assessments
- purchase high pressure nasal prongs to use with BiPAP machine
- develop HHS Non-Invasive Ventilation BiPAP/CPAP procedure and Clinical Competency Tool

I am advised that as at July 2016, nursing staff at the rural hospital had been assessed as competent in non-invasive ventilation using BiPAP and the hospital pharmacist had delivered in-service education on the use and administration of IV morphine. A non-invasive ventilation procedure and clinical competency assessment tool was expected to be implemented by September 2016.

Lesson learnt #3: Staff education

The RCA team noted the intubation and anaesthetic details were not documented following PS' unsuccessful resuscitation. Through staff interviews, the RCA team was able to establish correct endotracheal tube placement. It was noted the Medical Officers were busy and time poor over a five hour period during the night and in the early hours of the morning meaning fatigue may explain why patient intubation and the second cardiac arrest were not documented in the patient record. Had the Locum Anaesthetic Senior Medical Officer returned to the hospital during the RCA process, he would have been asked to provide retrospective progress notes detailing the treatment he provided to PS.

This prompted HHS-wide recommendations to:

- require a nominated scribe to record all details on the HHS Resuscitation Observation Form when providing basic or advanced life support

- scribes must record names and positions of all clinical staff who attend a Medical Emergency Call/Code Blue event
- SWHHS Clinical Procedure – Escalation of Clinical Issues to incorporate criteria for triggering a Medical Emergency Call/Code Blue from the Q-ADDS form
- all nursing staff to complete competencies for basic life support during mandatory training schedule with training to be supported with regular scenario-based learning activities scheduled by each facility’s Clinical Nurse, and staff to understand and practise each responder’s role during every scenario

It was also recommended that the rural hospital Acting Nurse Unit Manager provide a local Medical Emergency procedure and flow chart for all patients meeting Medical Emergency Team criteria as per Q-ADDS, CEWT or MEWT.

I am advised that as July 2016 these recommendations were essentially fully implemented.

Lessons Learnt #4: Documentation & Referral & Discharge System

The RCA team identified a ‘myriad of discharge planning issues’ including:

- a referral had not been provided to the hospital pharmacist who was not aware of PS’ discharge – this meant the pharmacist was unable to provide a medication action plan, consolidate her medication, educate her about monitoring her response to the increased dose of diuretic or replace the medication label indicating the increased dosage;
- the Senior Medical Officer and PS’ daughter reported she was happy for discharge but the medical record does not document any conversations between the treating clinicians and PS- PS’ daughter suggested her mother may have wanted to go home because she helped her with child minding while she worked;
- PS’ daughter says she told the Enrolled Nurse she “did not think her mother was well enough to go home” but no further action was taken by that nurse to allay these concerns;
- suboptimal discharge planning with general practitioner and the family
- no appointment was made by the ward clerk for PS to be seen by the referring GP three days post-discharge
- no discharge summary was available at the time of discharge – it was thought the changeover in Medical Locums may have contributed to the discharge summary being completed on 17 October (well after PS’ death);
- there was no referral to the Cardiac Nurse for ongoing patient support and follow up.

These issues prompted local recommendations to:

- inform medical staff that all patient assessments and procedures are documented comprehensively in the patient record;
- discharge summaries are to be provided within 24 hours of the patient’s discharge; and
- require all clinical staff to attend training to use the Patient Flow Manager System (Journey Board) and discharge plan for immediate referrals.

I am advised these recommendations were effectively completed by July 2016.

There were also general recommendations made around the importance of ensuring family members are offered the opportunity to be involved in discussions and decisions about treatment and discharge planning, and ensuring implementation of Ryan’s Rule for the escalation of patient-carer concerns.

The RCA team also noted a range of admission management deficiencies including:

- PS was not weighed on admission to the ward (preventing accurate assessment of fluid loss)
- functional assessment was not provided
- patient risk and needs assessment not completed – the reliability to nurses to provide a Patient Assessment and Management Tool for all patients admitted for longer than 24 hours was ad hoc and the written prompt on the Daily Care Plan was often missed

These issues prompted discussion but no formal recommendation to develop a procedure describing the key steps, roles and responsibilities required to support the efficient management of patients from admission to discharge.

The RCA identified some rather concerning deficiencies – no repeat observations before discharge (considering she had just complained of chest pain) and no escalation to the attention of medical officers; no discharge plan; no GP follow up arranged; pharmacist not notified and medication not labelled correctly; no discharge summary; no patient education; no referral to the cardiac nurse. However, I remained concerned that this comprehensive clinical review effort gave insufficient focus to the clinical management issues identified by the reviewing doctor in relation to the treatment PS received during the 8-9 October 2015 admission and the appropriateness of the discharge decision.

Further response from HHS

Compliance with then current HHS clinical guidelines and procedures

The Acting Executive Director Medical Services HHS, Dr NE, subsequently provided a statement about the extent to which the clinicians responsible for PS' care complied with the guidelines and procedures then in place at the rural hospital.

Dr NE's review of PS' care identified many areas of non-compliance with just about every clinical guideline and procedure in place at the time of PS' admission and representation. The most significant related to partial, incorrect or total non-compliance with aspects of the Clinical Observations (Recognising and Management of the Deteriorating Patient), Clinical Handover, Clinical Documentation and Medical Rural Relieving Staff – Orientation, Escalation and Supervision procedures:

- incorrect Q-ADDS scores, on one occasion leading to failure to escalate to a Medical Officer and increase frequency of observations
- Q-ADDS scores were not routinely checked at handover for accuracy;
- frequency of observations not as required by the Q-ADDS Action table
- failure to record interventions on Q-ADDS form
- failure to commence Fluid Balance Chart for patient on IV Frusemide
- incorrect triage category for emergency department presentation on 11 October 2015
- no documentation of PS' reported desire to go home
- no documentation of her daughter's concerns about her mother's fitness for discharge
- no clear documentation of her response to treatment interventions following IV Frusemide
- no documentation that the troponin was checked prior to discharge (but was subsequently noted to be normal)
- no documented diagnosis for the chest pain episode on the morning of 9 October
- no documentation of the diagnosis and overall assessment of PS' clinical situation in the ward round notes (though an appropriate management plan was documented)
- no evidence of medical staff orientation at Rural hospital
- no documentation of junior staff consulting with senior medical staff

- no evidence that alternative or additional senior or expert advice was sought
- no record of that stated intention to discuss PS with 'cardiology' occurred
- no evidence that a second medical officer was called in to assist when PS presented to the emergency department on 11 October – there were at least two senior clinicians available on-call every night at Rural hospital
- PS deteriorated significantly over the first two hours following her presentation despite medical management and before QCC was contacted.

Dr NE advised that as at October 2015, there were no permanent medical staff appointed to the rural hospital and nor was there a Director of Medical Services (DMS). A permanent DMS was appointed on 29 April 2016 and commenced in the role on 31 May 2016, and as at July 2016, the rural hospital was actively recruiting for more permanent medical staff.

I am advised that as at July 2016, the orientation and medical officer education program at the rural hospital had been improved with the development of a new Learning on Line orientation program that medical officers must complete prior to commencing within HHS facilities; scheduled education for locums on early warning and response observation tools; regular education sessions and clinical review feedback via the Director of Medical Services to medical staff.

In addition to implementing the RCA recommendation, the HHS also undertook improvements to the triaging of emergency presentations and the management of patients seeking to discharge against medical advice.

In order to better understand the basis of the clinical decision making during the 8-9 October 2015 admission, I sought a formal response from each of the medical officers involved in PS' care to the issues identified by the reviewing doctor, and received statements from:

- Dr VR who was working at the rural hospital on a 10 week contract as a Junior House Officer while employed by Royal Brisbane & Women's Hospital;
- Dr CB who was working at the rural hospital on a two week contract as a Locum Senior Medical Officer, and had frequently done so previously in the same capacity. Dr CB holds a Fellowship of the Australian College of Rural and Remote Medicine, following completion of the accelerated rural generalist pathway, specialising in anaesthesia; and
- nursing staff involved in PS' care on both presentations.

Management of PS' presentation and admission on 8 October 2015

Dr CB explained that PS' GP had telephoned the hospital before sending her to the emergency department. He recalls the GP described her as having intermittent dull chest pain for a number of months which had been more prevalent over the past two days. There were no distinguishing features of chest pain but the GP was concerned by PS' lack of exercise tolerance over this time – she described the history as a slow decline in the two days prior to PS' presentation that day when she became increasingly more short of breath. The GP queried whether it was an exacerbation of her COPD, this being the reason she had asked PS to present to hospital.

Dr CB says the GP told him there had been a number of prior occasions when PS had been referred to Charleville by the indigenous community health clinic but she had either refused to go, or failed to present, and instead opted for outpatient management.

None of this conversation is documented in the patient record; nor has the general practitioner documented the fact of this conversation in his notes.

PS was initially reviewed by Dr VR. His primary concern that PS was in chronic congestive heart failure. Her troponin results did not suggest she was having an acute ischaemic episode and she did not report any new chest pain on review. Rather, she described a dull ache in her chest for the last few months which had been waxing and waning particularly over the previous two days. She reported this would generally last about one hour and then disappear.

Dr VR discussed her presentation and his provisional diagnosis with Dr CB. Dr CB recalls Dr VR told him she had peripheral oedema in her lower limbs, some basal creps and mild increased work of breathing. He says he urgently requested the previous ECG from the general practitioner and then reviewed PS himself.

Both doctors recall that PS did not complain of any chest pain during review.

The previous ECG arrived after Dr VR had written up his admission note (in which he had described the LBBB as a 'new' finding). Dr CB reviewed the previous ECG against the admission ECG with Dr VR. He considered the LBBB was in fact pre-existing and was satisfied there weren't any significant acute changes. Dr VR has since acknowledged he should have recorded this in the patient record, with a more accurate description of the admission ECG findings being 'LBBB with left axis deviation'.

Given the lack of acute ischaemic changes on ECG in the setting of a two-day history of chest pain (on a background history of some 10 months of similar chest pain) and normal Troponin results, Dr CB did not consider PS was suffering an acute ischaemic event. Rather, her presentation was more in keeping with chronic congestive heart failure.

The plan was for PS to be admitted overnight for aggressive management with supplementary oxygen (if required), IV Frusemide 40mg, nitroglycerine (GTN) patch, her regular medications and for repeat bloods (including Troponin) the following morning. Dr VR recalls she was for discussion with 'cardiology' the following morning.

She was initially managed in the emergency department with continuous ECG monitoring. She did not report any ongoing chest pain during this time.

Dr CB recalls PS saying more than once she wanted to go home and did not want to stay in hospital at all. With persuasion, she was agreed to stay overnight. There is no mention of this in the progress notes.

PS was admitted to the ward at 3:30pm. The Enrolled Nurse who took her observations at this time, EEN KS, incorrectly recorded the Q-ADDS score as 2 when it should have been a 3. Although she did not have a specific recollection, she says she would have discussed PS' blood pressure (100/49) with the Registered Nurse JB. She suggests this is what prompted a decision to remove the GTN patch.

PS' observations taken at 5:55pm recorded a Q-ADDS score of 3, prompting the Enrolled Nurse who took them, EEN RS, to notify RN JB. She told RN JB PS was asymptomatic at that time. She was to receive minimum fourth-hourly observations at that time.

EEN KS took PS' next set of observations at 9:35pm, recording her Q-ADDS score as '1'. Her progress note indicates she notified RN JB of PS' blood pressure (110/57) and BSL (11.3mmols, eating lollies) and that PS was asymptomatic.

EEN RS handed over to RN SD at the commencement of the night shift. Her observations were taken at 2:00am by RN B and noted to be within normal range though her BSL was

high at 17.1mmol. The two nurses discussed her observations and decided to test her BSL again in an hour. It was still high at 3:00am but had reduced to 16.4mmol.

PS was noted to sleep comfortably when observed on hourly ward rounds overnight. RN SD recalls a discussion with RN B that they would continue with fourth-hourly observations.

RN SD took PS' observations at 6:00am, recording a Q-ADDS score of 3. She recalls PS was still a bit breathless so she administered a Salbutamol puffer with apparent good effect. She entered 'RN notified – patient asymptomatic' on the Q-ADDS form at this time.

The IV Frusemide achieved a good urine output something which, according to Doctor CB, PS reportedly commented on the next morning given how many times she had woken up to go to the toilet overnight.

Decision to discharge home on 9 October 2015

PS was reviewed on the morning ward round by Dr VR, Dr CB, Dr JL (another Senior Medical Officer) and an intern.

When reviewed at around 8:30am, she was noted to be afebrile, with a heart rate of 100, blood pressure 120/75, oxygen saturation of 94% on room air and respiratory rate 21.

Dr CB and Dr VR both recall she had been up and mobilising around the ward, had been able to shower and bathe herself, was able to communicate well and appeared less short of breath. In short, she appeared much better than when she presented the previous day. She reported feeling better and did not complain of any chest pain overnight or when reviewed at that time.

Dr CB describes her pedal oedema as having 'dramatically improved' from the previous day.

They reviewed her chest x-ray and noted it showed 'CCF changes'. Repeat ECG showed LBBB 'today as well' with no acute ischaemic changes.

Dr CB recalls PS commented she wanted to go home and that she intended to go home, even against medical advice, if she was not discharged that day. This is not documented in the progress note.

Given the improvement in her condition, the plan was to discharge her home that morning, subject to a normal repeat Troponin test. She was to be discharged on an increased dose of Frusemide (40mg) and GP review on the following Monday. PS was reportedly agreeable to this.

Dr CB recalls them discussing the importance of follow up care. She was given education about GTN use as she reported she had not been using it at home. She was also given a form for repeat urea and electrolyte testing on Monday morning. She was told she must return to hospital by ambulance if she had any further chest pain or shortness of breath or decrease in her breathing ability. None of this is documented in the progress note. Doctor 4 was unable to explain why as it was not him who completed the medical entry for the morning ward round.

Dr VR had no further involvement in her care after the morning ward round.

Dr CB explained the normal practice was for a discharge summary to be provided to the patient's GP 2-3 business days following discharge, depending on clinical commitments.

The discharge summary was provided by electronic transfer using the Enterprise Discharge Summary application, and in his experience, rarely given to the patient.

He says that given it was a Friday, meaning the discharge summary would not be provided until the following week, he personally phoned the GP to advise her of PS' condition, treatment and follow up recommendations. He says he was concerned by PS' history of non-attendance for medical treatment, and in light of the change to her diuretic therapy, he was 'insistent' that she required GP review on Monday. The GP reportedly agreed to see her on Monday. None of this is documented in the progress notes; nor is there any reference in the general practitioner records of the fact or contents of this discussion.

PS' daughter told one of the enrolled nurses her mother had complained of chest pain. This nurse informed RN DD who reviewed PS and completed observations at 9:50am and entered them on the Q-ADDS form, recording a Q-ADDS score of 4. She arranged for a repeat ECG and asked the RMO to review PS.

RN DD acknowledged the Q-ADDS score of 4 should have triggered repeat hourly observations. She could not explain why this did not occur but noted PS was seen by the RMO during the subsequent hour.

Dr CB recalls becoming aware of PS' subsequent complaint of chest pain a short time after completing the ward round. He was consulted by the RMO who reviewed PS and considered the repeat ECG findings were consistent with the ECG performed the previous day, namely LBBB with no acute ischaemic changes.

Dr CB was satisfied PS could be managed appropriately in the community.

He does not recall PS' daughter voicing any concerns to him about the discharge decision.

None of the nurses involved in PS' care recall PS' daughter expressing any concerns about her mother's fitness for discharge.

Dr CB considered the reviewing doctor's concerns and while acknowledging PS had a number of chronic issues that increased her risk of cardiac disease significantly (including diabetes, hypertension, raised cholesterol), he did not consider her condition to be an acute myocardial infarct event because of the ECG findings, normal Troponin levels and her clinical presentation. Dr CB considered the suggested further specialised testing did not necessarily require inpatient care if the patient's clinical condition has returned to regular functioning levels.

He was satisfied PS sustained a 'profound' clinical improvement from a relatively small dose of Frusemide, despite her chronic kidney disease. To his mind, this raised the possibility she was suffering from sub-clinical heart failure for some time and was resultantly responsive to a small oral dosing.

He explained that her tachycardia was considered and dismissed as being significant because her regular beta-blocker was withheld as part of the standard treatment of heart failure exacerbation.

Dr CB disagreed with the suggestion that PS had been discharged 'far too early' and that her condition had not been fully differentiated at the time of discharge. He was satisfied he had appropriately involved her GP in the discharge care planning. He acknowledged his misunderstanding at that time (based on information misread by Dr VR) that PS was for cardiology review and a stress echocardiogram in the coming weeks – this misunderstanding, in addition to his clinical assessment, informed his assessment that PS

did not need acute referral to a centralised area or to undergo any further specialised tests. He says that had he understood she in fact did not have a follow up appointment with her cardiologist in the coming weeks, he would have contacted her cardiologist directly to arrange an appointment for outpatient review and testing.

Management of PS' emergency presentation on 11 October 2015

I have also considered statements provided by the two Registered Nurses rostered on the night shift over 10-11 October 2015. They were allocated to work on the ward and to provide after-hours cover for patients presenting to the emergency department and outpatients.

They were both involved in the initial examination of PS when she presented shortly after midnight. One commenced a Rural and Remote Emergency Q-ADDS form, entering the observations and recording a Q-ADDS score of 'E' because of PS' high respiratory rate. One of the nurses initiated an emergency department response by having the on-call doctor, Dr JL contacted to review PS immediately.

They had initially applied oxygen via Hudson mask but changed this nasal prongs as PS was agitated and felt suffocated by the mask. Dr JL arrived at 00:25am.

PS was placed on continuous cardiac monitoring at around 1:00am. RN DD changed from using the Emergency Q-ADDS form to the Q-ADDS form used on the ward to record the observations. She says she did this on the understanding PS would be admitted to the ward and she wanted to provide a baseline which reflected the initial observations entered on the Emergency Q-ADDS form.

PS' Q-ADDS score remained an 'E' between 00:50am – 4:28am, (except at 1:20am and 1:30am when she scored '10'). Doctor 5 was aware of this as he was present throughout.

It appears Dr JL asked the nurses to call another doctor at the time PS deteriorated at around 2:30am. One of them contacted Dr WC, the on-call anaesthetic doctor, to attend. He arrived soon afterwards. It was Dr WC who directed the nurses to place PS on BiPAP. She arrested not long after this and was resuscitated after approximately 20 minutes of CPR and adrenalin administration. The on-call registered nurse was notified and attended, as well as the Nurse Unit Manager. Dr JL phoned QCC and Royal Flying Doctor Service at this time.

PS was placed back on the BiPAP machine. Her blood pressure dropped again at around 4:45am to below 60/23. Dr JL and Dr WC commenced CPR but despite prolonged resuscitation efforts she was unable to be revived.

Conclusion

PS died from natural causes.

I am satisfied that appropriate investigations were undertaken during her 8-9 October 2015 admission at the rural hospital to exclude an acute ischaemic event, she responded to medical therapy for an exacerbation of chronic congestive cardiac failure and she was well enough to be discharged from hospital for follow up in the community.

While Dr CB's recollection of PS' desire not to be admitted to hospital and once admitted, her strong desire to go home the next day is not reflected at all in the patient record, her daughter's advice that she was keen to go home and would likely have discharged herself anyway supports a finding that PS did express a wish to be discharged that day.

That said, the execution of her discharge planning was certainly very poor.

Dr CB's decision to send her home that day was clearly influenced not only by his assessment of her clinical condition and desire to go home at that time but also by his mistaken assumption about timing of her cardiology review. I cannot help but observe that it would not have taken much effort on his part or that of his colleagues to have confirmed or clarified this with PS, her daughter, the general practitioner and/or the cardiologist.

I am satisfied that by the time PS represented to the emergency department shortly after midnight on 11 October, she was extremely unwell. While the management of her presentation appears somewhat chaotic, and poorly documented, I do not consider there was a missed opportunity to have changed the outcome for her at this time.

The root cause analysis undertaken by HHS following PS' death identified a quite concerning constellation of clinical management and knowledge deficiencies at the rural hospital. I am reassured by the swift response by HHS to address those issues. While I am satisfied none of these, either alone or in combination, were so significant as to have been outcome changing for PS, they serve to reinforce the importance of proper clinical documentation and the correct use of early warning observation and response observation tools to maximise patient safety.

Place of death: Rural hospital

Date of death: 11 October 2015

Cause of death: 1(a) Coronary heart disease

2 Type 2 diabetes mellitus, hypertension, hypercholesterolaemia, chronic obstructive pulmonary disease, chronic renal failure

I close the investigation.

Ainslie Kirkegaard
Coronial Registrar
22 June 2017