CORONERS COURT OF QUEENSLAND

FINDINGS OF INVESTIGATION

CITATION:	**Non-inquest findings into the death of MH, an aged care resident**
TITLE OF COURT:	Coroners Court
JURISDICTION:	BRISBANE
DATE:	22 October 2024
FILE NO(s):	2022/875
FINDINGS OF:	Ainslie Kirkegaard, Coroner
CATCHWORDS:	CORONERS: health care related death; residential aged care; skin integrity; pressure area risk assessment; pressure injury prevention, staging and management; wound care documentation; management of wound related pain; failure to recognise and respond to clinical deterioration; unmet care needs in people living with dementia

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Background

1. MH is a 98-year-old woman who died at a regional public hospital on 23 February 2022. She had been a resident of a residential aged care facility (RACF) in the regional city since October 2020 following progressive functional decline at home.

2. Her death was reported to the coroner due to concerns about the adequacy of her pressure area management at the RACF.

MH's medical history

3. MH's medical records show she had a history of dementia, bronchiectasis, atrial fibrillation, type 2 diabetes mellitus, pernicious anaemia, Stage 3B chronic kidney disease and gout. She had a history of multiple deep venous thromboses due to Factor V Leiden, a genetic abnormality of the clotting system causing increased tendency to form clots, for which she was anticoagulated on Warfarin. She was under regular Warfarin monitoring through QML with ongoing dosage adjustment. Her INR (measure of anticoagulation) been stable over the two months preceding her death.

4. Her mobility was such she required assistance with toileting and activities of daily living. She had bed sensors in place to alert staff to her mobilising from her bed without their assistance, with environmental modification to decrease falls risk and a plan to summon staff for assistance with mobilising.

MH's recent state of health

5. There was a documented deterioration in MH's baseline function over the weeks preceding her death. She had poor oral intake, weight loss and was frequently refusing oral medication, repeatedly saying she wanted to be left alone to die. Food and fluid monitoring charts were commenced on 26 January 2022. A dietician referral was completed on 6 February 2022 but does not appear to have occurred prior to her admission to hospital. Staff met with her family on 8 February 2022 with a plan for further medical and mental health involvement.

6. MH was reviewed by her general practitioner on 16 February 2022, with no documented instruction other than to increase her anti-depressant medication. The general practitioner expressed doubts about the utility of an Older Persons Mental Health Service review, feeling that her deterioration reflected progressing dementia.

7. As at 5 February 2022, MH was noted to have a stage 2 pressure injury, measuring 1cm x 1cm. A wound care program was initiated, with staff encouraging MH to increase her walking and decrease time spent sitting in her chair. MH had wound review and dressing, but assessment was noted to be difficult due to problems with her mobility and behaviours, as well as ongoing faecal incontinence. Second hourly repositioning was commenced to mitigate worsening of her pressure injury. She was reviewed by an occupational therapist who recommended air cushioning of her chairs as well as an air mattress on her bed.

8. Wound dressings commenced weekly, increasing to every three days from 9 February 2022. The wound was noted to be pink and healing until 5 February 2022 but from 19 February 2022 it was noted to be black and necrotic. Photographs show noticeable deterioration after 17 February 2022, with moderate redness of the skin around the wound on 19 February 2022, worsening on the photograph taken on 22 February 2022.

Events leading to MH's presentation to the hospital emergency department on 22 February 2022

9. MH had two falls over 18-19 February 2022. She was found again on the floor of her room while attempting to mobilise to the toilet at 3:15pm on 22 February 2022. She was agitated and incontinent. There were no physical signs of head strike. Notes document that she was assessed by a Registered Nurse, with no concerns, although neurological observations were not taken due to resistance by MH. She was transferred to hospital after an alert by QML that her INR level that day was 8.4.

10. When the paramedics arrived at around 4:00pm, care staff reported a history of deterioration over the previous four weeks, with increasing confusion, falls and rapid weight loss, and told the paramedics MH had worsened over the preceding 24 hours. On assessment she was noted to have an elevated temperature of 39.4C and an elevated pulse rate of 130 beats per minute. She was transported to the hospital emergency department for further assessment.

11. On arrival in the emergency department, MH had an elevated temperature, pulse rate and respiratory rate and fluctuating level of consciousness. A large foul-smelling necrotic ulcer was noted in a sacral pressure area, with surrounding soft tissue infection. Her INR was >10. Urgent CT scan of the brain showed no acute intracranial pathology. Blood tests revealed a normal white cell count (marker of infection), though the pathology laboratory noted on the blood film that her white cells showed moderate changes associated with infection response. Her CRP (C-reactive protein: non- specific marker of infection or inflammation) was raised at 318 (normal <5). She had an elevated lactate (marker of tissue perfusion) of 5.4. She also had electrolyte derangement with low potassium, magnesium and phosphate levels, and derangement of liver function tests indicating likely biliary obstruction.

12. Blood cultures subsequently grew *Streptococcus mitis.* This is a normal part of the human bacterial flora which is found in the mouth, gastrointestinal tract, and skin. It is usually considered to have low scope for causing infection but has been associated with very serious infections including infection of heart valves and blood stream, usually in patients with comorbidities.

13. MH's condition deteriorated rapidly in the emergency department with low blood pressure and intermittent cessation of respiratory effort. A presumptive diagnosis of septic shock secondary to the infected ulcer was made and she was treated with intravenous fluid resuscitation and broad-spectrum intravenous antibiotics. The haematology team recommended administering Prothrombinex to counteract the over-anticoagulation, but this was not given due to her rapid deterioration.

14. MH appeared to be in pain. Following discussion with the family about her poor prognosis, she was transitioned to comfort measures and died soon afterwards.

15. The treating team attributed her death to septic shock as a consequence of the infected necrotic sacral pressure area against a background of dementia, frailty, supratherapeutic INR on Warfarin and a fall in the nursing home.

Preliminary independent clinical review

16. An independent doctor from the Department of Health Clinical Forensic Medicine Unit reviewed the patient records with a view to assessing whether there may have been a

missed opportunity to recognise and respond to MH's clinical deterioration and escalate her for medical review sooner.

17. The clinical reviewer observes MH was a frail, elderly lady with multiple comorbidities whose deterioration manifested as worsening mood, increasing agitation, decline in oral intake with weight loss as well as intermittent refusal of medication. Food intake was monitored and a referral to a dietician was made to address her nutrition. The clinical reviewer commented that while this may have represented a progression of her dementia, it is possible there was a reversible cause for her baseline deterioration, and this would have been worth further investigation by her general practitioner. There is little documentation from her general practitioner over this time regarding assessment and decision-making processes.

18. MH developed a pressure wound which was addressed and pressure mitigation procedures were instituted. The pressure wound deteriorated rapidly as is often the case even in high care environments such as intensive care units. The clinical reviewer advised that wound healing was always going to be difficult due to MH's poor mobility and poor nutrition. Mobility could not be improved, and even with dietician review, any food supplements would possibly have been declined leaving the options of nasogastric or gastrostomy feeding. These may not have been desirable or even sustainable options.

19. The clinical reviewer observes that wound care was also challenging due to MH's intermittent resistance to cares and her ongoing faecal incontinence. Despite ongoing wound and pressure care, the wound worsened, becoming necrotic five days prior to hospital transfer with probable surrounding cellulitis over the preceding days.

20. The clinical reviewer feels that increased general practitioner involvement, particularly over these last days would have been desirable. Earlier antibiotic treatment and consideration of debridement of the necrotic tissue may have been outcome changing in the short term, although given the other factors inhibiting wound healing, MH was extremely vulnerable to non-healing and sepsis. Alternatively, an active plan for palliation could have been considered.

21. The clinical reviewer advises it was not clear from the notes when MH became obviously septic, with documented observations noted to be 'within normal range' (details not supplied) on 21 February 2022. The clinical reviewer considers vital sign observations should have been taken and documented after the fall on 22 February 2022 and suggests it would be of utility to reflect on whether there was opportunity for earlier recognition of sepsis; though in the frail and elderly, sepsis can evolve quickly, and physical signs are classically more subtle in this population. Further, MH's suddenly increased INR was likely reflective of her sepsis and in any case did not result in any sequelae.

Family concerns

22. MH's family expressed a range of concerns about the care she received in the lead up to her transfer to hospital, namely:
    - her health had deteriorated, and she had lost a lot of weight over three-week COVID-19 lock down approximately two months prior to her death;
    - the RACF staff had downplayed the seriousness of her illness leading up to her hospital transfer;
    - there was poor communication by RACF staff and the general practitioner;
    - RACF staff did not act quickly enough; and
    - RACF staff did not seem to be equipped to manage with MH's increasing care needs once her general health and function started to deteriorate.

Autopsy findings

23. External examination including CT scan and internal examination were performed by an experienced forensic pathologist at the Queensland Health Forensic & Scientific Services. The final autopsy report issued on 19 October 2023.

24. External examination noted a 6cm black, dried pressure ulcer to the sacrum. Internal examination revealed the sacral ulcer to have underlying tissue damage and cavitation to a depth of 50mm involving fat, muscle, and bone (coccyx). There was also an enlarged heart with coronary atherosclerosis and mitral valve calcification, and mild pulmonary oedema. There were no other obvious sources of infection and there was no evidence of significant bleeding. Microscopic examination confirmed the sacral pressure ulcer extending through to bone with early abscess formation and osteomyelitis (bone infection). There were changes of cardiac amyloidosis, with amyloid also seen in some vessels of other major organs. There was no evidence of an acute inflammatory process such as pneumonia. The brain showed changes in keeping with the clinical history of dementia. Toxicological analysis of hospital admission blood samples showed non-toxic levels of frusemide, mirtazapine, and Warfarin. Biochemical analysis identified a possible indicator of systemic bacterial infection. Microbiology testing of the sacral tissue cultured mixed anaerobic bacteria along with *Streptococcus mitis*, the organism that was cultured from hospital blood samples.

25. Having regard to these findings, the pathologist determined the cause of death to be sepsis due to sacral pressure ulcer complicated by osteomyelitis against a background of dementia, frailty, cardiac amyloidosis, type 2 diabetes mellitus, chronic kidney disease and Factor V Leiden mutation (warfarin therapy). The pathologist observes that elderly individuals are particularly susceptible to pressure areas due to a number of vulnerabilities including reduced subcutaneous fat, fragile skin, pre-existing circulatory disorders, and conditions which impair healing. Ischaemic damage to the skin can occur within hours, though deeper injury and infection takes longer to develop. Osteomyelitis is a severe bone infection that is difficult to treat and can have a high risk of mortality in the elderly, particularly when infection spreads to the blood and sepsis develops.

Aged Care Quality & Safety Commission regulatory review

26. In early 2024, I provided the Aged Care Quality & Safety Commission with information about the circumstances in which MH died.

27. The Aged Care Quality & Safety Commission recognises pressure injuries are preventable and should they occur, they are considered an unintended outcome of care (clinical incident) requiring investigation and action taken to prevent the pressure injury from deteriorating or the person developing any further injuries. The Commission's Clinical Unit advises the risk of developing a pressure injury can increase with age and certain comorbidities. It is expected that a person's level of risk of developing a pressure injury is regularly and accurately assessed and that preventative strategies are identified and implemented to avoid their occurrence or at the very least, further deterioration should one develop. If a pressure injury is identified, expected clinical practice requires that the injury is reported as an incident and appropriate management actions are commenced, including a review of the pressure injury prevention strategies implementation and their effectiveness, wound assessment (including staging of the pressure injury) and care planning, and ongoing wound treatment to prevent further deterioration.

28. Noting the autopsy finding of osteomyelitis, the Commission's Clinical Unit advises that while ischaemic damage to the skin can occur within hours, deeper injury and infection takes longer to develop and is contributed to by unrelieved pressure and contaminates in the pressure related wound. Osteomyelitis is a severe bone infection that is difficult to treat and can have a high risk of mortality in the elderly, particularly when the infection leads to systemic infection and sepsis.

29. The Commission's Clinical Unit reviewed the clinical care MH received, identifying evidence of systemic clinical deficit related to lack of skills and knowledge and clinical oversight by registered staff at the RACF.

30. The Clinical Unit identified underlying root causes of the significant deterioration of MH's sacral ulcer as:

Inadequate or inaccurate assessment of care needs including the assessment of pressure injury risk using an evidence-based assessment tool

31. The review noted that while a care plan review on 31 January 2022 identified MH as a 'high risk of skin injuries', there is no evidence that a clinically validated pressure injury risk assessment (such as Braden or Waterlow assessment) was conducted to establish this.

The use of inappropriate pressure injury prevention strategies and the inadequate implementation of strategies to prevent the development of pressure injuries as a result of poor care planning documentation practices

32. MH's agreed care and services plan did not contain adequate guidance about the frequency of repositioning she required or other strategies required to prevent the development and/or deterioration of pressure injuries. The summary care plan included 2-3 hourly repositioning during the day and four-hourly repositioning overnight, air mattress and skin moisturising. The progress notes also documented provision of a 'donut cushion' on the recliner chair she sat out on daily. The Clinical Unit advises these cushions are not recommended as pressure relieving devices as they create pressure rather than relieve it.

33. The Clinical Unit considered these strategies were either not consistently implemented or were inappropriate given the deterioration in MH's sacral (coccyx) injury. This conclusion is supported by the occupational therapist's progress note entry on 10 February 2022 recommending that an Equagel General Cushion 18x18 from Novis would be beneficial for MH to provide additional relief to coccyx and prevent ongoing pressure areas. It is unclear whether this was ever ordered or implemented.

34. There is no information demonstrating repositioning was occurring between 5-13 February 2022. From 13 February 2022 there is some evidence of MH sitting in her chair and refusing to be repositioned. There is evidence of some attempts being made to position her in bed on occasions, but this was not consistent. Her refusal to reposition or have wound care attended was associated with pain in the 'lower back' but there is no evidence that staff considered this may have been related to the pressure injury on her coccyx/sacral pressure injury deteriorating.

35. The Clinical Unit review identified a progress note made on 17 February 2022 documenting strict two-hourly pressure area cares over 24 hours due to pressure injury breakdown and noting a bed sensor and air mattress were requested from maintenance. It is not clear whether MH had an air mattress on her bed and was being repositioned prior to 17 February 2022.

Poor documentation practices in records reviewed, most notably the wound care charting, progress notes and incident reporting

36. The Wound Assessment and Care Plan (coccyx) created after the injury was identified on 5 February 2022 contains inconsistent assessment information that the review identified as not meeting expected practice standards for wound management. The stage of the pressure injury is documented as stage IV and the narrative about the condition of the pressure injury did not match the photograph taken that day.

Lack of staff skills and knowledge of pressure injury prevention, staging and the management of wounds including the assessment and management of wound related pain

37. Given the severity of the wound as photographed, the Clinical Unit did not consider the plan to review the wound in seven days met expressed practice standards; rather the level of risk of wound deterioration for MH when considering her comorbidities and concurrent clinical challenges (confusion, suboptimal nutrition/hydration, refusal of care) coupled with the severity of the pressure injury was such the wound should have been reviewed more frequently. Further, the wound treatment regimen documented was inadequate.

38. The wound was not reviewed again until 10 days later, at which point the wound photographs display a wound that has broken down and has possible undermining (tunnelling under the skin) present.

39. There was no assessment of wound associated pain as is expected practice. Pressure injuries are painful, so it is expected that wound associated pain is assessed regularly and managed. There is no evidence to support this occurred. The progress notes between 12-21 February 2022 reflect MH was experiencing severe pain (documented as 8/10), noting on 12 February 2022 she was documented to be 'screaming' in pain and 'refusing to have' repositioning attended while she was in the chair, and wound care provision at times. There is no evidence supporting that staff considered her behavioural response (refusal of care and agitation) may have been secondary to an unmet care need (pain).

Failure to recognise and escalate changes in the condition of MH's skin integrity in a timely manner

40. The review noted the pressure injury did not develop into a stage IV pressure injury (as recorded and photographed on 5 February 2022) quickly, meaning there would have been signs of changes in skin integrity prior to this date.

41. There is a rapid and significant deterioration of the wound, particularly evident between 15-17 February 2022. The Enrolled Nurse observed the injury as having 'breakdown' and made the Registered Nurse and Clinical Nurse aware. The Clinical Unit review considers the wound management and interventions on 17 February 2022 were inadequate as it was not until 19 February 2022 that a more appropriate treatment regimen was implemented to debride the necrotic cap on the pressure injury.

Lack of clinical oversight of the care being provided to MH

42. The review considered the failure to report the pressure injury as an incident, coupled with failure to stage the pressure injury accurately resulted in senior clinical staff having no oversight of the severity of the wound, resulting in inadequate management of the

pressure injury. Further, there was no evidence of appropriate clinical oversight of consistent implementation of simple pressure injury prevention strategies such as regular repositioning.

***Failure to recognise that changed behaviours such as 'refusal of care' are indications of unmet care needs (in this case, pain) in people living with dementia*.**

43. The review observed that MH's progress notes reflect evidence of severe pain and changing clinical condition (decreased oral intake, increased confusion, drowsiness) that was not appropriately recognised or responded to by the RACF staff.

Regulatory response

44. The Aged Care Quality & Safety Commission conducted an unannounced assessment at the RACF in August 2024, assessing the Service's compliance with the Aged Care Quality Standards relating to personal care and clinical care, human resources, and organisational governance.

45. On 25 September 2024 the Commission published an Assessment Contact Performance Report on the Aged Care Quality and Safety Commission website. The Report found the Service compliant with the Aged Care Quality Standards relating to personal care and clinical care and organisational governance, but not human resources. I am advised the RACF has submitted a Continuous Improvement Plan to remedy the deficiencies with a completion date of early 2025.

Findings required by s.45

Identity of the deceased – [deidentified for publication]

How she died –

MH died from complications of a sacral pressure ulcer which had not been managed appropriately by those caring for her at the RACF. This occurred in the context of systemic clinical deficits relating to lack of skills and knowledge and clinical oversight by registered nursing staff at the Service. These deficits created a constellation of care failures including inadequate pressure area risk assessment, poor care planning documentation practices, inappropriate pressure injury prevention strategies, inadequate implementation of prevention strategies, poor wound care documentation practices, failure to recognise and respond to changes in MH's skin integrity in a timely way, inadequate assessment and management of wound related pain and inadequate clinical oversight. The circumstances in which MH died have been closely examined by the Aged Care Quality and Safety Commission. The Commission has since taken regulatory action in response to the systemic care deficits which led to multiple missed opportunities by the RACF to have mitigated MH's risk of developing a pressure injury and once it developed, to take appropriate timely measures to manage its progressive deterioration.

Place of death – Regional public hospital

Date of death – 23/02/2022

Cause of death - 1(a) Sepsis
1(b) Sacral pressure ulcer complicated by osteomyelitis
2 Dementia; Frailty; cardiac amyloidosis; Type 2 diabetes mellitus; chronic kidney disease; Factor V Leiden mutation (warfarin therapy)

I close the investigation.

Ainslie Kirkegaard
Coroner
CORONERS COURT OF QUEENSLAND
22 October 2024