



IN THE CORONERS COURT
OF VICTORIA
AT MELBOURNE

COR 2022 007086

FINDING INTO DEATH WITHOUT INQUEST

Form 38 Rule 63(2)

Section 67 of the Coroners Act 2008

Findings of:	Coroner John Olle
Deceased:	Graeme William Dimsey
Date of birth:	02 December 1960
Date of death:	10 December 2022
Cause of death:	1a: SEPTIC ARTHRITIS COMPLICATING LEFT KNEE JOINT PROSTHESIS IN THE SETTING OF STATUS POST FRACTURED NECK OF FEMUR AND GIRDLESTONE PROCEDURE
Place of death:	Ballarat Base Hospital (Grampians Health), 1 Drummond Street North, Ballarat Central, Victoria, 3350
Keywords:	Orthopaedic surgery, sepsis, patient with intellectual disability, diagnostic error, death in hospital, cause of death in dispute.

INTRODUCTION

1. On 10 December 2022, Graeme William Dimsey (**Graeme**) was 62 years old when he died at Ballarat Base Hospital (**BBH**), administered by Grampians Health (**GH**), following orthopaedic surgery in August 2022 to replace his left knee. At the time of his death Graeme lived in supported accommodation at 3 Hamish Court, Sebastopol, Victoria, 3356.
2. Graeme is survived by his sister Kay Podmore (**Kay**).

Background and medical history¹

3. Living with autism spectrum disorder (**ASD**), a neuro-developmental condition, Graeme had complex medical needs. He was also diagnosed with cerebral palsy and epilepsy.
4. Graeme's other medical conditions included type-2 diabetes mellitus, follicular thyroid cancer, atrial fibrillation and recurrent aspiration pneumonia.

Events leading to Graeme's death

5. On 21 November 2022, following his surgery in August 2022, Graeme presented at the BBH with fever, left knee pain, reduced mobility and reduced cognitive functioning. He was then admitted to the BBH with a presumptive diagnosis of sepsis.
6. The evidence indicates that Graeme remained in hospital receiving treatment for several weeks. The evidence indicates further that, during this time, Graeme's diagnosis of septic arthritis of his left knee was considered but discounted by his treating team on several occasions.
7. Although his left knee was swollen at initial assessment, no tenderness, redness or warmth was found on examination. Graeme was unwilling to weight bear on the left limb, however. A chest x-ray was generally clear except for some 'minor' atelectasis in the left lower lobe.²
8. Although, a C-reactive protein (**CRP**) blood test was normal at his initial assessment, further testing revealed an elevated white blood cell count which suggested that Graeme had an infection. He was then admitted to the BBH with a presumptive diagnosis of sepsis of

¹ Court File [**CF**], medical records from BBH and Graeme's usual doctor (**GP**).

² Atelectasis is collapse of a lung, wholly or in part.

unknown origin and delirium and was commenced on a course of intravenous (**IV**) antibiotic therapy.³

9. On 22 November 2022 at 9 am, Graeme was reviewed by the orthopaedic registrar who, upon examination, did not note any concern or suspicion that Graeme had a knee joint infection. However, when he was reviewed on the following day, an orthopaedic specialist diagnosed Graeme with ‘prosthetic joint infection’ (**PJI**) and referred him for an x-ray and an ultrasound examination.
10. On 23 November 2022, the x-ray of the left knee revealed a small effusion, and the ultrasound revealed a knee joint effusion. The attending radiologist commented that ‘given the clinical history provided, septic arthritis remains a possibility’. Upon further review later that same day, the orthopaedic specialist commented that the knee was not irritable or warm.
11. In their review of Graeme’s condition, the BBH orthopaedic team took the decision that aspiration of the knee joint was not indicated as a treatment option and, while further tests for sepsis remained negative, over the next few days, Graeme’s CRP rose significantly and remained significantly elevated despite treatment for sepsis.
12. On 24 November 2022, despite further diagnostic tests, Graeme’s treating team were unable to identify the source of his sepsis and noted that his knee was unlikely to have caused the sepsis. During a subsequent ward round later that day, Graeme was reviewed by the BBH infectious diseases team who noted his fever, but did not recommend that his knee had to be excluded as a source of his sepsis.
13. Similarly, although the chest x-rays revealed that Graeme had aspirated foreign matter into his lungs, BBH clinicians did not make any clear diagnosis of pneumonia. Graeme remained in hospital for the next few days, however.

THE CORONIAL INVESTIGATION

14. Graeme’s death was reported to the coroner as it fell within the definition of a reportable death in the *Coroners Act 2008* (**the Act**). Reportable deaths include deaths that are unexpected, unnatural or violent or result from accident or injury.
15. The role of a coroner is to independently investigate reportable deaths to establish, if possible, identity, medical cause of death, and surrounding circumstances. Surrounding circumstances

³ Ceftriaxone and Flucloxacillin

are limited to events which are sufficiently proximate and causally related to the death. The purpose of a coronial investigation is to establish the facts, not to cast blame or determine criminal or civil liability.

16. Under the Act, coroners also have the important functions of helping to prevent deaths and promoting public health and safety and the administration of justice through the making of comments or recommendations in appropriate cases about any matter connected to the death under investigation.
17. Victoria Police assigned an officer to be the Coroner's Investigator for the investigation of Graeme's death. The Coroner's Investigator conducted inquiries on my behalf, including taking statements from witnesses – such as family, the forensic pathologist and treating clinicians.
18. This finding draws on the totality of the coronial investigation into the death of Graeme William Dimsey. Whilst I have reviewed all the material, I will only refer to that which is directly relevant to my findings or necessary for narrative clarity. In the coronial jurisdiction, facts must be established on the balance of probabilities.⁴

MATTERS IN RELATION TO WHICH A FINDING MUST, IF POSSIBLE, BE MADE

Circumstances in which the death occurred

19. During the evening hours of 29 November 2022, nursing staff found Graeme lying on the floor. Although the fall was not witnessed by any of the BBH staff, the evidence indicates that Graeme had fallen off his bed. When the BBH's hospital medical officer (**HMO**), on duty at the time, attended to him, the HMO noted that although it was difficult to get a history from Graeme, he did not report any pain and had good mobility in all his limbs.
20. On the following morning, however, the nursing staff noted bruising to Graeme's right buttock and flank which did not appear to be causing him any pain. Later that day, when clinicians reviewed Graeme, they did not make any comment or note about his fall or the bruising noted by the nursing staff previously, but noted that Graeme was complaining about pain, tenderness

⁴ Subject to the principles enunciated in *Briginshaw v Briginshaw* (1938) 60 CLR 336. The effect of this and similar authorities is that coroners should not make adverse findings against, or comments about, individuals unless the evidence provides a comfortable level of satisfaction as to those matters taking into account the consequences of such findings or comments.

and swelling in his left knee. The attending BBH clinician then scheduled an ultrasound guided knee aspiration for 2 December 2022 at 10.30 am.

21. On 1 December 2022, upon further review, noting the pending ultrasound examination, the attending clinician noted that Graeme was agitated and uncooperative. However, neither the clinician nor the nursing staff made any entry in their notes to document whether Graeme was in pain or not.
22. Later that day, when Graeme was reviewed by the BBH physiotherapist, he refused to get out of bed and to stand. The physiotherapist noted, however, that he agreed to be assisted to extend his lower limbs into a better position.
23. Graeme's medical records indicate that, upon further review on 2 December 2022, the attending BBH clinician considered a diagnosis of 'hospital acquired pneumonia' and a left knee effusion. However, these diagnoses appeared to have been considered in the absence of any documented reports of pain and while further review by the BBH orthopaedic department was pending. Notably, the ultrasound examination which had been scheduled for the day, was not documented.
24. On 3 December 2022 at 6.20 pm, when Graeme presented with rapid heart rate, attending staff called the BBH Medical Emergency Team (MET) to manage his condition. Subsequently, when a computed tomography (CT) scan of his chest, abdomen and pelvis was conducted, the attending clinicians discovered that Graeme had suffered a fracture and dislocation of the right hip. The medical records indicate that the clinicians believed this Graeme's injury was of 'unknown chronicity' or had been there for a prolonged period.
25. On 4 December 2022, Graeme underwent surgery to repair the fracture dislocation. However, the surgical procedure was abandoned when surgeons opined that Graeme had a high joint infection risk due to the intercurrent sepsis. Instead, the clinicians opted to perform a 'Girdlestone's procedure' (sic) to remove the head of the femur. The operation report noted that Graeme's hip could have dislocated anywhere from between three days to three months.⁵
26. Post-operatively Graeme presented with low blood pressure and was transferred to the BBH intensive care unit (ICU) where he continued to deteriorate. During this time, however, BBH

⁵ The Girdlestone procedure is also known as a resection arthroplasty of the hip and is performed as a salvage surgical procedure when total hip replacement is not possible or feasible due to the risk of severe infection.

clinicians were unable to identify or confirm the source of his sepsis. Graeme was then transitioned to end-of-life care.

27. On 10 December 2022 at 8.45 pm, Graeme passed away.

Identity of the deceased

28. On 10 December 2022, Graeme William Dimsey, born 02 December 1960, was visually identified by, Noelene Collins, a staff member of his accommodation service provider.⁶

29. Identity is not in dispute and requires no further investigation.

Medical cause of death⁷

30. Forensic Pathologist Dr Heinrich Bouwer of the Victorian Institute of Forensic Medicine (VIFM) conducted an autopsy upon the body of Graeme William Dimsey on 15 December 2022 and provided a written Medical Examiner's Report (MER) documenting his findings dated 15 February 2023.

31. In the execution of his duties, Dr Bouwer considered the following sources of information:

- i. Victoria Police Report of Death, *Form 83*;
- ii. Post-mortem CT scan;
- iii. E-Medical Deposition Form completed by the BBH;
- iv. The contact log of the VIFM coronial admissions and enquiries (CAE);
- v. Ballarat Group Practice and Arch Records;
- vi. BBH records.

32. The post-mortem examination revealed 'evidence of septic arthritis complicating the left knee joint prosthesis' where Dr Bouwer found 'thick pus within the joint capsule'. Further microbiology testing identified bacteria 'known to cause septic arthritis following joint replacement surgery'. Dr Bouwer also noted evidence of pneumonia.⁸

⁶ CF, Statement of Identification.

⁷ CF, Medical Examiner's Report (MER) and Supplementary Report containing the microbiology culture results dated 15 February 2024.

⁸ Ibid.

33. Dr Bouwer commented that there was ‘right thigh swelling and haematoma post right neck of femur fracture with excision of the femoral head’ known as a Girdlestone Procedure.
34. Toxicological analysis of post-mortem samples identified the presence of procalcitonin ~ 0.08 µg/L.⁹ Dr Bouwer commented further that the ‘elevated procalcitonin’ level is consistent with ‘systemic inflammation/sepsis’.
35. Dr Bouwer provided an opinion that the medical cause of death was 1(a) SEPTIC ARTHRITIS COMPLICATING LEFT KNEE JOINT PROSTHESIS IN THE SETTING OF STATUS POST FRACTURED NECK OF FEMUR AND GIRDLESTONE PROCEDURE.
36. Dr Bouwer postulated that Graeme died by natural causes.

INVESTIGATIONS

37. When Graeme’s body came into our care at the VIFM, the Court’s E-medical Deposition Form completed by the BBH requested the forensic pathologist and the Court to consider the following issues:
 - i. Whether the fracture of the right hip was an old injury or a injury sustained when Graeme fell on 29 November 2022.
 - ii. Whether Graeme had septic arthritis of the right hip; and
 - iii. Whether Graeme had hospital acquired pneumonia.
38. Although the forensic pathologist had postulated that Graeme had died by natural causes and no concerns of care were raised by his family, given Dr Bouwer’s comments in the MER, the information contained in the E-Medical Deposition Form, Graeme’s disabilities and complex health issues and further, given my duty as a coroner to contribute to a reduction in the incidence or number of preventable deaths in Victoria, I referred the matter to the Coroners Prevention Unit (CPU) for their review of the circumstances under which the death occurred.¹⁰

⁹ CF, VIFM Toxicology Report of Forensic Toxicologist, Lachlan Arentz dated 21 February 2023.

¹⁰ The Coroners Prevention Unit (CPU) was established in 2008 to strengthen the prevention role of the coroner. The unit assists the coroner with research in matters related to public health and safety and in relation to the formulation of prevention recommendations. The CPU also reviews medical care and treatment in cases referred by the coroner. The CPU is comprised of health professionals with training in a range of areas including medicine, nursing, public health and mental health.

39. At my direction, the CPU reviewed the medical management of Graeme's complex health care needs while he was in the care of GH.

40. At my further direction, Graeme's medical records held on file by GH were obtained for my perusal and consideration. In addition to the medical records the following documents were obtained from GH which represented their reviews of Graeme's medical management and death:

i. The ICU review;

ii. The orthopaedic review;

iii. The internal medicine review; and

iv. The Victorian Health Incident Management System (VHIMS) Summary Report.

41. In summary, the GH reports conveyed the following information:

ICU review

42. In their ICU review, GH did not identify any issues with Graeme's medical management and his death.

Orthopaedic review

43. The GH orthopaedic review noted they were unable to get a history from the patient regarding his hip injury. However, on examination, Graeme presented with sepsis and that his treating team made a presumptive diagnosis of aspiration. There was no clinical evidence of PJI and no alternative source of his infection was found.

Internal medicine review

44. In their internal medicine review, the GH found that their medical management of Graeme's health issues was appropriate and that neurological observations after Graeme's unwitnessed fall was appropriately followed up and reinforced by senior staff.

45. Although GH conceded that further reviews by the ICU medical team was not documented contemporaneously while Graeme was in the ICU and further, acknowledging that there was a need for senior staff to monitor how junior staff were managing their patients, they did not appear to consider of any of the following issues:

- i. The initial suspected diagnosis of septic arthritis;
- ii. The presumptive diagnosis of aspiration, or whether aspiration could be excluded; and
- iii. The delay in diagnosing the hip fracture after Graeme had fallen.

VHIMS report

46. In this Summary Report, the VHIMS review did not identify any issues with the medical care provided to Graeme by GH from the time he was admitted to the BBH until his death. The report made no reference to the septic arthritis in Graeme's left knee.
47. I have reviewed Graeme's medical record and the respective reports submitted to the Court by GH and, having considered the content of these reports, I note that the GH was likely to have conducted their reviews of Graeme's medical management and subsequent death and compiled their reports prior to the finalisation and receipt of the MER and the VIFM Toxicology Report which confirmed the medical cause of Graeme's death.
48. Accordingly, on 1 August 2023, to advance my investigation into Graeme's death, assisted by the CPU, further information was requested from GH in the form of a directed statement, to clarify my concerns about the diagnoses made and medical management of Graeme's health issues leading to his death.¹¹
49. I now turn to consider GH's response to my request for clarification of the issues identified by my investigation into Graeme's death following my review of the medical records and their respective reports.¹²

FURTHER INVESTIGATIONS

50. In their statement to the Court dated 5 September 2023, GH informed me that their orthopaedic team had discounted the diagnosis of septic arthritis based upon the lack of clinical findings which they would have considered to be consistent with septic arthritis in the left knee. GH informed me further that Graeme's chest x-ray demonstrated pneumonia resulting in an increased oxygen requirement.

¹¹ The directed statement request took the form of a series of 13 directed questions for GH to consider in order to clarify my concerns about the medical management of Graeme's condition leading to his death.

¹² For the purposes of my Finding, although I have considered the GH response in its entirety, I refer only to the salient points thereof to advance the coronial investigation and in order to assist me to discharge my statutory obligations.

51. In their review of the relevant medical records, however, the CPU informed me that Graeme appeared to be in relatively good condition at the time of presentation. The first report of his chest x-ray conducted on 22 November 2022 was merely suggestive of pneumonia and the x-ray conducted on 1 December 2022 demonstrated changes which were suggestive of aspiration. The CPU was therefore satisfied that after Graeme was admitted to the ward, he did not have a consistently ‘increased oxygen requirement’.
52. According to GH, their examination and assessment of Graeme’s condition was further complicated by his intellectual disability. In this regard, the CPU agreed that Graeme’s combined delirium and intellectual disability was likely to have compromised an accurate assessment of his left knee at the time of presentation and subsequently after he had been admitted to the ward.
53. Having considered the factual matrix of this matter and, given that the difficulty in obtaining a patient history from Graeme after he had fallen from his bed is borne out by the evidence before me, I am satisfied that that the weight of the available evidence supports the submission made by GH in this regard.
54. In response to my query as to why Graeme’s left knee was not aspirated as they had initially planned, the GH informed me they had decided not to follow through with their plan because the procedure not without risk and that the possibility of a chest infection was a more likely source of Graeme’s sepsis. In this regard, the CPU noted that at the time septic arthritis was first considered, there was not a concurrent suspicion of chest infection and Graeme was admitted with sepsis of unknown source. Changes on chest x-ray subsequently developed, but they were not pronounced, and it would be common for a bed-bound unwell patient to develop some chest x-ray changes in response to their immobility and other illness.
55. In acknowledgement of the associated risks, the CPU advised me that all joint aspiration carries a risk of introducing infection into an uninfected joint. However, GH had also indicated that there is a risk of introducing bacteria circulating in the blood of a septic patient into the joint, but they were unable to quantify this risk.
56. In considering this submission from GH further, despite the lack of scholarly debate, research or data on this topic in studies conducted on humans, the CPU identified a study conducted on animals in 1987 in which it was concluded that the risk of introducing bacteria into a joint from the blood of a bacteraemic patient during arthrocentesis “*can be minimized by*

intravenous antibiotics without decreasing the likelihood of recovery of an organism if the joint is septic".¹³

57. According to the CPU, the medical records indicated that Graeme was already on antibiotics for sepsis at the time and had negative blood cultures. Having considered the advice of the CPU on this point, I noted that BBH clinicians had commenced Graeme on a course of IV antibiotic therapy upon his admission to the BBH.
58. The CPU opined, therefore, that it was unlikely that Graeme was bacteraemic, particularly early in the course of his illness. The evidence indicates the risk of introducing infection, as the reason taken by GH for not aspirating Graeme's left knee at the time, was minimal in Graeme's case. This concern held by GH, therefore appeared to be unreasonable in the circumstances.
59. Further, in their review of the risks associated with joint aspiration, the CPU considered other topical empirical studies on the complication rate of the aspiration of a prosthetic joint and the risk of introducing bacteria already circulating in the in bloodstream into the prosthetic joint of a patient diagnosed with sepsis.
60. In a recent paper in the 'Journal of Arthroplasty' the authors concluded that: "*While joint aspiration is a procedure with inherent risks, this study shows that the rate of iatrogenic PJI is extremely low (0%). Therefore, if infection is suspected, the surgeon should consider joint aspiration even in the initial post-operative period as the risk for introducing infection is far outweighed by the risk of missing an infection*".¹⁴
61. In another paper,¹⁵ a study of the incidence of post-arthrocentesis¹⁶ septic arthritis, published in 2002, the frequency of the risk of introducing infection by aspiration a prosthetic knee joint was calculated to be 0.037%.
62. The CPU considered a third study which examined the incidence of septic arthritis after arthrocentesis or injection of steroids¹⁷ into a joint and concluded that the incidence was

¹³ Olney BW et al. Risk of iatrogenic septic arthritis in the presence of bacteremia: a rabbit study. J Pediatr Orthop. 1987 Sep-Oct;7(5):524-6. <https://pubmed.ncbi.nlm.nih.gov/3624461/>

¹⁴ Keating TC et al., Low Risk of Acute Iatrogenic Periprosthetic Joint Infection After Prosthetic Joint Aspiration. The Journal of Arthroplasty, Volume 38, Issue 9, 2023, pp1861-1863, <https://www.sciencedirect.com/science/article/abs/pii/S0883540323002826>

¹⁵ Geirsson AJ, et al. Septic arthritis in Iceland 1990-2002: increasing incidence due to iatrogenic infections. Ann Rheum Dis. 2008 May;67(5):638-43. <https://pubmed.ncbi.nlm.nih.gov/17901088/>

¹⁶ Arthrocentesis is the aspiration of joint fluid.

¹⁷ Steroids may be injected into acutely inflamed joints to treat such conditions as gout.

0.08%, which translates to 8/10000 procedures. To date, estimates of the rate of infection caused by joint aspiration is between 1 infection per 1000-3000 procedures. Consequently, the CPU advised me that, despite the relatively wide range of estimates, the risk of causing septic arthritis by a correctly performed joint aspiration is relatively low.

63. I have reviewed the academic opinion on this subject which the CPU had referred me to and I am satisfied, to the standard applicable to my jurisdiction—*on the balance of probabilities*—that the empirical evidence produced in these studies which the CPU has considered and relied upon as a basis for their opinion and further, in advising me, supports a conclusion that the risk of introducing infection during a prosthetic joint aspiration procedure is far outweighed by the risk of missing an infection.
64. In response to my query of the risks associated with not aspirating Graeme's knee joint given his condition, the GH informed me that the risks associated with a decision not to aspirate a prosthetic joint includes the risk of a delayed diagnosis and hence, delayed treatment. To this end, the CPU advised me that it is universally recognised that treatment of septic arthritis should commence as soon as possible in order to achieve best the outcomes for the joint and the patient.
65. When queried about what treatment regime they would have followed if there had been a clear diagnosis of septic arthritis, GH informed me that antibiotic therapy treatment may have been considered if Graeme had been hypoxic and carried a high risk for surgery including debridement or lavage of the affected joint. Further, if Graeme was medically fit for removal of the joint, then they may have considered that course of action as an option as well.
66. In considering GH's response to this query, the CPU advised me that the treatment of any significant infection requires 'source control', and in the setting of joint sepsis this would mean drainage and flushing or lavage of the joint. The CPU advised me further that antibiotics have limited entry into an infected joint. The CPU noted, however, that GH still went ahead with the attempt to repair his hip, despite Graeme's increased unwellness at the time. The CPU went on to inform me that the better option in Graeme's case would have been to undertake infection 'source control', a much simpler procedure which includes joint flushing. Based on the medical records, the CPU opined that it was unlikely, at the time, that Graeme was a high risk for a procedure of this nature, particularly earlier on before his condition had deteriorated.
67. On 24 November 2022, when the GH orthopaedic team assessed Graeme, they found that he was hypoxic and not a suitable candidate for surgery because his oxygen saturation on air was

at 94% and that their findings favoured a diagnosis of pneumonia. However, by their review of the medical records, the CPU noted that with a 94% oxygen saturation on air, Graeme ought not to have been considered hypoxic because that level of oxygen saturation was within the normal range. In support of their view that Graeme was not hypoxic, the CPU referred me to the record of his chest x-rays which demonstrated and noted that *“There is air space opacity in the left lower lobe behind the left cardiac shadow obscuring the medial aspect of the left hemidiaphragm. Appearance suggest left lower lobe consolidation +/- atelectasis. The left upper lobe and right lung are clear. Pleural spaces are clear.”* According to the CPU, this record does not indicate hypoxia.

68. On 29 November 2022, when Graeme was not referred for aspiration of the joint, GH sought to impress upon me that, by the assessment of the attending clinicians, Graeme’s aspiration procedure was cancelled because his condition appeared to be improving given the reduction in his inflammatory markers. However, the CPU noted that the the knee aspiration was only booked *after* the ward round on 30 November 2022 where it was documented that the CRP of 130 was ‘downtrending’, suggesting perhaps that the reduction in inflammatory markers was not the reason for the cancellation of the aspiration procedure. In support of their view in this regard, the CPU drew my attention to Graeme’s chest x-ray of 1 December 2022 which demonstrated that *“There is increased interstitial opacities in the lung bases. In right mid and lower zone there is peribronchial thickening and interstitial opacities noted this is suggestive of aspiration in the correct clinical setting”*.
69. Responding to my query about Graeme’s medical review procedures after he had fallen from his bed on 29 November 2022, GH advised me that when medical staff attended to Graeme, he was confused. Further, because the examination by the afterhours doctor reported movement of all four limbs and on the basis of this examination of the hips, pelvis, back and lower limbs, further examination was not undertaken. In support of this assessment, GH informed me that Graeme did not complain of pain over the following 24-hour period. However, on 3 December 2022, when the CT scan revealed that Graeme had suffered a fracture and/or dislocation of the right hip, GH sought to ameliorate the diagnosis by estimating that the fracture could have occurred anytime between three days to three months prior to 3 December 2022 when the CT scan was conducted.
70. Given Graeme’s complex health issues, I acknowledge the difficulties clinicians may have encountered in assessing him. However, on my review of the medical records, I noted Graeme’s orthopaedic outpatient record which was documented when he was reviewed in the

orthopaedic clinic on 7 October 2022, following his hip operation in August 2022. In that record entry, the attending clinician had documented that Graeme was walking well with a wheelie walker. Further, the attending clinician who reviewed Graeme at the time did not note any evidence of a fracture or dislocation of the right hip.¹⁸

71. Similarly, on 24 November 2022, the GH physiotherapist's entry on Graeme's medical records noted that the "Patient walking independently with no aid around his bedroom and independently with 4-wheel walker around home". At a follow-up physiotherapy assessment on 28 November 2022, the physiotherapist noted that Graeme did not indicate any particular problem with the right hip.¹⁹
72. In light hereof, I am not convinced that the available evidence indicates, as GH suggests, that Graeme had sustained the fracture or dislocation of his right hip prior to his admission to the BBH. Accordingly, I am satisfied that the available evidence supports a conclusion that GH did not review the relevant parts of their medical records prior to coming to their conclusion that that fracture could have been up to three months old.
73. Following the events of 3 December 2022, with regard to considering a potential diagnosis of septic arthritis of the left knee, GH informed me that, by their review, it was difficult to see that there was a focus of concern by Graeme on his left knee after the procedure because he was in a state of delirium and had pain elsewhere. Given, the evidence of Graeme's condition at the time, I acknowledge that there were many distracting factors which may have complicated any assessment of Graeme's condition.

CPU review

74. Graeme's presentation to the BBH on 22 November 2022 was atypical for septic arthritis in that there appears to have been a paucity of clear signs of septic arthritis on examination. He was, however, complaining of increased knee pain and the knee was swollen with an effusion on ultrasound. There was no other clear source of sepsis at the time of admission and for some time afterwards.
75. The orthopaedic plan not to aspirate the knee in the short term appeared to have been reasonable pending the timely exclusion of other sources of infection. However, after several days, when there was still no clear source of infection and the possibility of joint infection had

¹⁸ p 211 of Ballarat Health records 'DRQ-DimseyG-Coroner.pdf'

¹⁹ p 630 of Ballarat Health records 'DRQ-DimseyG-Coroner.pdf'

not been excluded, the decision not to aspirate the knee became less reasonable in the circumstances. Further, given that the initial plan to aspirate the knee after other sources of infection were excluded was not followed—a decision which GH had based on the modest degree of improvement in Graeme’s blood tests and after the changes on his chest x-ray were interpreted as being infective—I am satisfied that the evidence supports a conclusion that, even after examining Graeme, GH clinicians remained unconvinced that septic arthritis was a reasonable diagnosis.

76. The evidence indicates that there appears to have been a reluctance on the part of the orthopaedic team to aspirate the affected knee joint for fear of introducing infection into the knee. However, given the advice of the CPU and further, given the prolific academic opinion on the risks associated with this procedure, I am satisfied that the weight of the available evidence in this matter supports a conclusion that the risk of introducing infection into the Graeme’s affected knee joint was relatively low and is therefore outweighed by the risk of missing the diagnosis of septic arthritis.
77. Whilst several specialist teams were involved in the management of Graeme’s health concerns during his admission to the BBH, there is no record of a multidisciplinary consultant discussion regarding the dilemma posed by his condition, his suspected knee infection and other potential problems. The CPU advised me that a face-to-face multidisciplinary consultant level discussion including consultants of GH’s internal medicine, orthopaedics, infectious diseases teams would have been beneficial in managing Graeme’s health care needs. Given Graeme’s complex health care needs at the time and further, given the factual matrix of this matter, I am satisfied that the input of a multidisciplinary team, as identified by the CPU, may have altered the outcome for Graeme.
78. The evidence indicates that Graeme presented with difficult assessment issues for his treating team at the BBH, compounded by the likelihood that his intellectual disability combined with his delirious state resulted in an inconsistent and unreliable clinical history being documented, leading to inaccurate examination findings or diagnoses. This was also evident in the assessment of Graeme’s injuries after he had fallen from his bed. The evidence indicates further that attention to Graeme’s left knee was distracted by his fall from the bed, his resulting hip injury, and the subsequent deterioration in his condition.
79. Having considered the available evidence at this juncture of my investigation into Graeme’s death, I was satisfied that the weight of the available evidence supported a conclusion that the outcome for Graeme could have been altered by an earlier diagnosis of septic arthritis and

appropriate clinical treatment thereof. Simply put, the evidence indicated that Graeme's death was preventable in the circumstances.

80. Consequently, on 28 November 2024, I informed GH that the weight of the available evidence indicated that I could reasonably reach the conclusion that Graeme's death was preventable and further, that the available evidence supported my making pertinent recommendations to GH in relation to Graeme's death.²⁰
81. In the ordinary course, I invited GH to make submissions to the Court in anticipation of possible adverse comments about and findings against the BBH or GH, related to my envisaged recommendations.

Grampians Health's submissions

82. On 15 February 2024, GH filed their written submissions in mitigation of my proposed recommendations or any adverse comments about or findings against the BBH or GH, as justified by the factual matrix of this matter, for my consideration. I have reviewed their submissions and considered the import thereof in the context of the body of evidence yielded by my investigation into Graeme's death.²¹
83. In my review of the submissions, it appeared that GH did not concede that while Graeme was in their care, a different approach to their treatment regime may have altered the outcome for him. Simply put, GH appeared to convey that Graeme's death was inevitable.
84. In their review of the circumstances in which Graeme's death occurred, pursuant to my view and the subsequent notice from the Court that adverse comments about or findings against GH were reasonable in the circumstances, GH constituted a review panel comprised of two senior physicians and two senior nurses. In this regard, I note that GH elected not include an orthopaedic surgeon to the review panel upon whose opinion their submissions appear to have been based.
85. In my view, it is important at this juncture in my Finding to recapitulate the condition Graeme was in when he was admitted to the BBH. The evidence before me indicates that Graeme

²⁰ CF, Letter from the Court to GH which included my proposed recommendations.

²¹ Although I have considered the GH submissions in its entirety, for the purposes of my Finding I refer only to those points in their submissions which relate directly to my proposed recommendations or envisaged adverse comments about or findings against the BHH or GH.

presented with fever, altered cognition and a sore and swollen knee joint which had been surgically replaced approximately three months prior to this admission to the BBH.

86. However, despite his presentation at the time of his admission, Graeme was in a relatively good condition. He did not have pneumonia but died from complications of a prolonged lie in bed and sepsis. While he was in the BBH, he fell out of his bed and sustained a serious hip injury, the diagnosis of which appeared to be unreasonably delayed. At the time of his death, the infection in Graeme's knee remained undiagnosed.
87. In what appears to an attempt to assuage my proposed recommendations or adverse comments or findings, GH submitted that 'The initial working diagnosis in Mr Dimsey's case was sepsis with a respiratory source'. In contradistinction to what GH now asserts in their submissions, on my review of the relevant medical record, however, I noted that when Graeme was admitted to the BBH, his diagnosis was documented as sepsis of unknown origin with delirium. The record indicates further that, although there was some concern about septic arthritis at the time of Graeme's admission to the BBH, there was no suspicion or diagnosis of respiratory infection.
88. In a further submission, GH disputed the medical cause of death as ascribed by the forensic pathologist, Dr Bouwer, and averred that the 'most likely cause [of death] here is sepsis, secondary to aspiration pneumonia, with fracture dislocation of the right hip (operated)'. Further, as an alternative to the cause of death ascribed by Dr Bouwer, GH requested me to consider 'the possibility of iatrogenic contamination or of bacterial transmigration (. . .) given that the post-mortem [examination] occurred beyond 24—48 hours [after the death]'. In other words, it appears that GH asserts that the septic arthritis and associated findings of the forensic pathologist may have developed after Graeme had died and after his body had been taken into the care of the VIFM, and that the infection may have resulted from procedures performed in the mortuary.
89. Perplexed by this extraordinary averment, I sought Dr Bouwer's opinion on the alternative medical cause of Graeme's death as postulated by GH. At my direction, Dr Bouwer reviewed GH's submission on this point as well as all the documents contained in the Court's File including his own MER, histology report, the post-mortem CT scan and all the additional tests conducted after he had conducted the autopsy upon the body of Graeme William Dimsey.

Forensic pathologist's response to GH's submissions

90. According to Dr Bouwer, while he agreed with GH that the diagnosis of pneumonia and pleural effusions ‘undoubtedly played a role in the death’, it was ‘important to note the presence of significant peri-prosthetic joint infection’ of the left knee. Dr Bouwer then went on to explain that, at autopsy, the joint space had copious purulent effusion, and the histological examination of the joint capsule indicated substantial inflammation and pus.
91. Dr Bouwer advised me that, given his findings at autopsy of septic arthritis and severe inflammation and tissue oedema in the relevant joint spaces, he stands by his opinion on the medical cause of death as ascribed in the MER. In support of his findings, Dr Bouwer provided me with the relevant autopsy photographs and the histology images and invited me to share his opinion on GH’s submission on the medical cause of death, together with the photographic material, with them.
92. Similarly, given CPU’s role in my investigation into Graeme’s death, I sought their review and opinion on GH’s submission on the medical cause death in light of Dr Bouwer’s opinion.

CPU response to GH’s submissions

93. At my direction, the CPU reviewed GH’s submission and Dr Bouwer’s opinion on their submission in the context of their earlier advice on plausible prevention opportunities in this matter.
94. In summary, the CPU agreed with Dr Bouwer’s decision to stand by the medical cause of death ascribed in his MER.
95. In support of their opinion, the CPU advised me that for such a dramatic localised inflammatory response and collection of pus, as demonstrated in the photographs provided by Dr Bouwer, to have formed in Graeme’s knee joint after he had died, an intact circulation, an active bone marrow and living inflammatory and immune cells are required. The CPU advised me further that these cells lose the ability to respond to infection, as depicted in the photographs, soon after a patient’s death and require blood flow to transport them from the bone marrow to the tissues.
96. The CPU went on to consider GH’s assertion that organisms cultured from a knee joint are ‘uncommon for a knee joint infection’. In their review of this assertion, the CPU considered topical medical literature and referred me to a journal article titled ‘Microbial aetiology, epidemiology, and clinical profile of prosthetic joint infection: are current antibiotic

prophylaxis guidelines effective?’ in the periodical publication, *Antimicrobial Agents and Chemotherapy*.²²

97. In this this article, the authors concluded that polymicrobial infections, particularly those involving gram-negative bacilli and enterococcal species, were common. The authors went on to quantify the rate of polymicrobial infections in the cases they considered to 36% of the total number of cases included in their study. Given the substance of this research paper, the CPU did not believe that GH’s argument that the organisms cultured from a knee joint are ‘uncommon for a knee joint infection’, is correct.
98. In support of their opinion, the CPU informed me that the microbiology of Graeme’s knee joint demonstrated a polymicrobial infection, in exactly the same manner as described by the authors in the article. The CPU advised me further that GH also failed to mention or consider the presence of ‘gram positive cocci’ on the knee swab which, according to the CPU, are likely to be ‘staphylococci’, an even more common cause of prosthetic joint infection.²³
99. In considering the “OrthoEvidence” GH referred the Court to, the CPU was unable to identify any specific reference regarding the risks associated with the performance of a joint aspiration in a prosthetic joint.
100. On 8 March 2024, given the gravamen of GH’s submissions in this matter and, particularly their submission placing the medical cause of death in dispute, I invited GH to provide me with further evidentiary material to assist me to consider the probative value of their averment *vis-a-vis* the MER and further, whether this matter proceeds to a full Inquest. In my view, in the context of the evidence of the forensic pathologist before me, further forensic evidence was required to substantiate GH’s submission in this regard to enable me to consider the probative value of their submission on the medical cause of death in the context of the evidence already before the Court.²⁴

Grampians Health’s response

²² Peel TN, Cheng AC, Buising KL, Choong PF. Microbiological aetiology, epidemiology, and clinical profile of prosthetic joint infections: are current antibiotic prophylaxis guidelines effective? *Antimicrobial Agents and Chemotherapy*. 2012 May;56(5):2386-91. doi: 10.1128/AAC.06246-11. Epub 2012 Feb 6. PMID: 22314530; PMCID: PMC3346661. <https://pubmed.ncbi.nlm.nih.gov/22314530/>

²³ Cocci and staphylococci are common bacteria.

²⁴ CF. Email from the Court to GH’s General Counsel dated 8 March 2024. The email included the relevant excerpt from the forensic pathologist’s response to the submission and included the photographs of the affected knee joint and the histology photographs.

101. On 4 April 2024, GH informed me that they have reviewed the further commentary and the photographic material provided by the forensic pathologist in response to their submissions of 15 February 2024. Although ‘the presence of all the pathological findings outlined by the pathologist’ was not disputed any further, GH maintained their view that the medical cause of death as ascribed by the forensic pathologist was incorrect.²⁵
102. However, despite their lack of consensus or difference of opinion on the medical cause of death, GH declined the opportunity to provide the Court with the evidentiary basis for their submission made in this regard and informed me that they were aware of the consequences of their decision not to provide further information for my consideration. In the absence of supporting evidence, I am unable to consider or apportion any weight to GH’s submission on an alternative medical cause of death.
103. GH informed me further, however, that they were satisfied with my proposed recommendations.
104. Consequently, having considered GH’s final response in the context of my investigation as a whole and further, having considered the factual matrix of this matter, I am satisfied that the available evidence now enables me to discharge my statutory obligations.

FINDINGS AND CONCLUSION

1. The standard of proof for coronial findings of fact is the civil standard of proof on the balance of probabilities, with the *Briginshaw* gloss or explications.²⁶ Adverse findings or comments against individuals in their professional capacity, or against institutions, are not to be made with the benefit of hindsight but only on the basis of what was known or should reasonably have been known or done at the time, and only where the evidence supports a finding that they departed materially from the standards of their profession and, in so doing, caused or contributed to the death under investigation.
2. Pursuant to section 67(1) of the *Coroners Act 2008* I make the following findings:
 - a) the identity of the deceased was Graeme William Dimsey, born 02 December 1960;

²⁵ CF, Letter from GH to the Court dated 4 April 2024.

²⁶ *Briginshaw v Briginshaw* (1938) 60 CLR 336 at 362-363: ‘The seriousness of an allegation made, the inherent unlikelihood of an occurrence of a given description, or the gravity of the consequences flowing from a particular finding, are considerations which must affect the answer to the question whether the issues had been proved to the reasonable satisfaction of the tribunal. In such matters “reasonable satisfaction” should not be produced by inexact proofs, indefinite testimony, or indirect inferences...’.

- b) the death occurred on 10 December 2022 at Ballarat Base Hospital (Grampians Health), 1 Drummond Street North, Ballarat Central, Victoria, 3350.
- c) I accept and adopt the medical cause of death as ascribed by Dr Bouwer and I find that Graeme William Dimsey died from 1(a) SEPTIC ARTHRITIS COMPLICATING LEFT KNEE JOINT PROSTHESIS IN THE SETTING OF STATUS POST FRACTURED NECK OF FEMUR AND GIRDLESTONE PROCEDURE; and
3. Having considered all the evidence I am satisfied that the weight of the of the available evidence supports a conclusion that Graeme William Dimsey’s intellectual disability and delirium presented a difficult assessment problem for his treating team at Ballarat Base Hospital. Accordingly, I find that Graeme William Dimsey’s intellectual disability and delirium impeded his treating team at Ballarat Base Hospital in their assessment of his health care needs and condition.
4. I am satisfied further that the weight of the available evidence supports a conclusion that Graeme William Dimsey’s intellectual disability and delirium resulted in his treating team obtaining a clinical history which was incompatible with his actual condition and therefore and unreliable. Accordingly, I find that, by not exploring any further avenues to diagnose his condition more accurately by means of other, more reliable diagnostic processes, Graeme William Dimsey’s treating team at Ballarat Base Hospital failed to make a proper or accurate diagnosis of his condition.
5. FURTHER, given their failure to make a proper or accurate diagnosis of his condition, I am satisfied that the weight of the available evidence supports a conclusion that medical management of Graeme William Dimsey’s condition at Ballarat Base Hospital was not appropriate in the circumstances. Accordingly, I find that treatment regime preferred or followed by Graeme William Dimsey’s treating team at Ballarat Base Hospital is connected with or contributed to the deterioration of his health while he under their care and his subsequent death.
6. AND FURTHER, having considered factual matrix of this matter, I am satisfied that the weight of the available evidence supports a conclusion that the failure by Grampians Health clinicians at Ballarat Base Hospital to identify the source of the infection in Graeme William Dimsey, a man with a known disability and cognitive impairment, in a timely manner was an

opportunity lost to alter the outcome for him. Accordingly, I find that Graeme William Dimsey's death was preventable in the circumstances.

7. Consequently, given my findings in this matter, I am satisfied that the following recommendations are appropriate in the circumstances.

RECOMMENDATIONS

Pursuant to section 72(2) of the Act, I make the following recommendations:

1. In the interests of public health and safety and with the aim of preventing like deaths, I recommend that Grampians Health conduct a review of the circumstances within which Graeme William Dimsey's death occurred in order to produce guidelines for staff with regard to the assessment and management of patients for whom disability, cognitive impairment, mental health or other conditions contribute to a risk of difficult, unreliable or inconsistent clinical assessment, particularly as it relates to patient history-taking regime and physical examination; and
2. In the interests of public health and safety and with the aim of preventing like deaths, I recommend that Grampians Health conduct a review of the scientific literature on the risk of iatrogenic complications of diagnostic joint aspiration and produce evidence-based guidelines, to be developed at a multidisciplinary consultant level, to balance the risk of complication with the risk of missing a diagnosis of joint infection in patients with sepsis where the possibility exists that a joint infection may be implicated.

I convey my sincere condolences to Graeme's family for their loss.

ORDERS AND DIRECTIONS

Pursuant to section 73(1B) of the Act, I order that this finding be published on the Coroners Court of Victoria website in accordance with the rules.

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

Kay Podmore, Senior Next of Kin

Grampians Health

Senior Constable Cody Ogston, Coroner's Investigator

Signature:



Coroner John Olle

Date: 17 April 2025

NOTE: Under section 83 of the *Coroners Act 2008* ('the Act'), a person with sufficient interest in an investigation may appeal to the Trial Division of the Supreme Court against the findings of a coroner in respect of a death after an investigation. An appeal must be made within 6 months after the day on which the determination is made, unless the Supreme Court grants leave to appeal out of time under section 86 of the Act.
