CORONERS COURT OF SOUTH AUSTRALIA

INQUEST INTO THE DEATH OF CLAUS HARTMUTH BURG

[2026] SACC 29

Inquest Findings of his Honour State Coroner Whittle

6 August 2026

CORONIAL INQUEST

Examination of the cause and circumstances of the death of a man with a history of bladder cancer who underwent periodic radiological scanning to monitor for any recurrence of cancer. Further scans some months later led to a diagnosis of stomach cancer which had progressed beyond a treatable stage. The inquest explored the circumstances surrounding the earlier scans including how and why signs of stomach cancer were not detected and addressed.

Held:

1. Claus Hartmuth Burg, aged 70 years of Brahma Lodge, died at Brahma Lodge on 28 September 2019 as a result of metastatic gastric adenocarcinoma.

2. Circumstances of death as set out in these findings.

Recommendations made.

Counsel Assisting: MS E ROPER

Interested Party: CENTRAL ADELAIDE LOCAL HEALTH NETWORK
Counsel: MR J HOMBURG - Solicitor: GILCHRIST CONNELL

Witness: DR L DANDIE, DR C POZZA, DR W PATTERSON, DR P REZAIAN & DR T PRICE
Counsel: MR J HOMBURG - Solicitor: GILCHRIST CONNELL

Witness: DR I MADDERN
Counsel: MR S JOYCE - Solicitor: ILES SELLEY LAWYERS

Hearing Date/s: 03/02/2025-07/02/2025, 10/02/2025, 20/02/2025 & 25/02/2025

Inquest No: 2/2025 **File No/s: 2129/2019**

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INQUEST INTO THE DEATH OF CLAUS HARTMUTH BURG [2026] SACC 29

Introduction

1 The Court heard an inquest into events at The Queen Elizabeth Hospital Oncology Haematology Clinic and Radiology Unit in 2017 and 2018, in which a life-threatening condition was not diagnosed until it had progressed beyond a treatable stage. The evidence encompassed documentary exhibits as well as oral evidence from consultant medical specialists including five radiologists, a gastroenterological surgeon and two oncologists.

2 In these findings, the expressions 'stomach cancer' and 'gastric cancer' are used interchangeably. Both terms refer to the same condition and no distinction is intended.

Claus Burg

3 Claus Hartmuth Burg was born on 13 January 1949 in Hamburg, Germany and migrated to Australia with his parents and sibling when he was six years old. As an adult he enjoyed 47 years with his wife Lynda and together they had one son. In his working life he was a truck driver in the waste industry. Mrs Burg described her husband as a calm man who enjoyed being retired and visiting friends.[1] He liked to take off in the car for road trips, and they would travel yearly for a holiday. Mr Burg was 70 years of age when he died at home on 28 September 2019.

4 In May 2008 Mr Burg was diagnosed with transitional cell carcinoma of the bladder. He underwent successful treatment, which eventually included surgery to remove his bladder and prostate, followed by chemotherapy. For almost a decade he underwent regular surveillance and monitoring for recurrence of cancer, under the care of oncologist Associate Professor Ken Pittman. This monitoring included, but was not limited to, CT examinations of his chest, abdomen and pelvis, and annual ureteroscopies.

5 From time to time, the CT scans detected lesions in Mr Burg's liver and soft tissue nodules, but these abnormalities did not develop and did not appear to be cause for concern.

6 On 28 February 2017, Mr Burg underwent a CT scan which was reviewed by consultant-level radiologist, Dr Woon Chong (the February 2017 scan). Dr Chong has been a specialist radiologist since 2009[2] and worked at the Lyell McEwin Hospital one day per week since 2017, with the remainder of his time spent in private practice. Dr Chong reported:

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EXAMINATION:
     Study: CT Chest Abdomen Pelvis
     Procedure(s): CTCCAP - CT chest Abdomen Pelvis w Contrast
CLINICAL DETAILS:
     67-year with previous TCC.  Chemotherapy and operation.  For
     monitoring and surveillance.
COMPARISON:
     CT 27/02/2015
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[1] Exhibit C15
[2] Exhibit C35 WKC1

TECHNIQUE:
Postcontrast scan of the chest abdomen pelvis
FINDINGS:
Primary tumour: Previous cystoprostatectomy and pelvic node clearance. Right iliac fossa ileal conduit. No local recurrence.
Nodes:Nil
Metastases:Nil
Miscellaneous:There is no adenopathy in the chest. Stable right hilar node with a short axis diameter of 7 mm (previously 8 mm). No pericardial pleural effusion. Stable subsegmental atelectasis medial segment right middle lobe.
No suspicious reticular nodular opacity.
Stable hypodensity in segment 6 of the liver measuring 22 mm (previously 21 mm). Remaining liver volume is unremarkable.
Uncomplicated cholelithiasis.
Pancreas, spleen, adrenals and kidneys are normal.
Small right para umbilical hernia with fat contents only. No adenopathy or free fluid. Bone elements are unremarkable
CONCLUSION:
Stable appearances are 27/02/2015.

7 On 21 February 2018, Mr Burg presented for a repeat scan (the February 2018 scan) in accordance with his follow-up regime. Consultant-level radiologist, Dr Pouria Rezaian, reported on the scan. Dr Rezaian has been a consultant radiologist since 2012. He worked one day a week at the Lyell McEwin Hospital and four days in private practice. Dr Rezaian reported:

EXAMINATION:Study: CT Chest Abdomen Pelvis
Procedure(s): CTCCAP - CT Chest Abdomen Pelvis w Contrast
CLINICAL DETAILS:
Surveillance post cystoprostatectomy in 2009, liver and lung lesions stable in Feb 2017.
Repeat CT scan in 1 year please, thanks Bladder cancer post cystoprostatectomy
COMPARISON:
CT 28/02/2017
FINDINGS:
Chest:
4 mm left upper lobe lung nodule is new.
Subpleural micro nodules left lower lobe laterally unchanged. No pleural pericardial effusion. No thoracic lymphadenopathy by CT size criteria. Stable mildly prominent right hilar and right fifth and pretracheal lymph nodes which remains subcentimetre in size.
Abdomen pelvis
19 ml hypodense liver lesions segment 6 liver appear stable. No new liver lesion. No intra abdominal lymphadenopathy, ascites or collection. Previous cystectomy noted. Ileal conduit noted. No renal mass or hydronephrosis.
Spleen, adrenal glands and pancreas appear normal. No destructive bone lesion.
CONCLUSION:
4 mm left upper lobe lung nodule is new. This is nonspecific and potentially postinflammatory although a metastatic focus cannot be entirely excluded. Surveillance imaging is recommended. No further interval change.

8 Associate Professor Pittman reviewed Mr Burg on 20 March 2018, noting that he was symptomatically well and had normal blood test results. He noted the presence of the lung nodule and recorded:

> This would be very unusual to be a recurrence nine and a half years after initial treatment, but as it has shown change, we need to follow this up.

9 Given the recommendation for surveillance imaging for the new lung nodule, Mr Burg underwent another CT scan on 6 July 2018 (the July 2018 scan). Consultant-level radiologist, Dr Ian Maddern, reviewed the scan. Dr Maddern was a senior visiting medical specialist at The Queen Elizabeth Hospital between 2003 and 2022.[3] Dr Maddern reported the following:

> EXAMINATION:
> Study: CT chest Abdomen Pelvis
> Procedure(s): CTCCAP - CT chest Abdomen Pelvis w Contrast
> CLINICAL DETAILS:
> Assess progress previously noted LUL nodule TCC bladder base
> COMPARISON:
> 21/02/2018
> TECHNIQUE:
> Postcontrast images
> FINDINGS:
> The 4 mm left upper lobe nodule seen previously was not clearly defined.
> Subpleural ill-defined densities left lower lobe again noted. Not well defined. No new lung nodule identified. No axillary lymphadenopathy identified.
> Small pre tracheal nodes measuring up to 9 mm short table axis
> Hypodense area segment 6 liver not as well defined as previously measures approximately 24x 11 mm. No new liver lesion identified.
> Multiple small biliary calculi seen. No pancreatic lesion identified.
> **The stomach wall appears irregular possibly thickened. Clinical correlation would be appropriate. If there is further concern colonoscopy would be appropriate** [emphasis added]. The adrenal glands have a normal appearance. Both kidneys are slightly irregular outline and excrete contrast. I note there has been a cystectomy with urinary diversion. There are degenerative changes in the spine.
> CONCLUSION:
> Lung nodule no longer identified. No new lung nodules seen. Liver lesion unchanged. A few small nonspecific mediastinal nodes noted.[4]

10 This was the first reference in the CT reports to any stomach abnormality. The evidence established that the reference to colonoscopy in that report was a typographical error and Dr Maddern meant endoscopy.

11 Dr Maddern gave evidence that he was surprised that there was no reference to the thickening of the stomach wall in the report of the February 2018 scan which he reviewed

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[3] Exhibit C29 at [7]
[4] Exhibit C10

for comparison.[5] Dr Maddern said that he had not made specific comments about the presence of the signs in the February 2018 scan, nor comment on the progression over the interim, but accepted that he should have done that.[6] He conceded that he knew at the time of reviewing the images that he had detected a possible gastric cancer.[7]

12 Dr Maddern's report was reviewed in advance of Mr Burg's next oncology appointment at The Queen Elizabeth Hospital.

13 As Associate Professor Pittman was no longer working at the hospital, Mr Burg saw Dr Kevin Patterson instead. Before he saw Mr Burg, Dr Patterson reviewed Associate Professor Pittman's last consultation note from 20 March 2018. Associate Professor Pittman considered that, in his opinion, it would be very unusual for the left upper lobe nodule to be a recurrence of Mr Burg's bladder cancer, given the time that had lapsed since his initial treatment. Associate Professor Pittman had recorded that if the nodule had resolved, Mr Burg could be discharged from the oncology clinic.

14 Dr Patterson saw Mr Burg on 12 July 2018. He reviewed the CT report of Dr Maddern, but did not review the source images himself, and then made the decision to discharge Mr Burg from further oncology monitoring. Dr Patterson did not infer the radiologist to be reporting the stomach irregularity as a matter of concern. Mr Burg headed home from this brief appointment, having been discharged from oncology follow-up for the first time in nearly a decade.

15 Mr Burg attended the hospital again on 3 September 2018 for his yearly flexible ureteroscopy and no abnormalities were detected. However, by this time Mr Burg's body weight was significantly dropping. He reported this unintentional weight loss to his general practitioner, Dr Nick Vlachoulis, on 14 September 2018. He also told Dr Vlachoulis he was experiencing left-sided abdominal pain and had done so for the past month, as well as reflux after eating. Dr Vlachoulis referred Mr Burg to the Lyell McEwin Hospital for an endoscopy and a colonoscopy.

16 At this time, Dr Vlachoulis did not have the benefit of Dr Maddern's CT scan report, and he arranged for the further testing based solely on what Mr Burg was telling him about his symptoms.

17 Mr Burg underwent an endoscopy at the Lyell McEwin Hospital on 28 November 2018. Professor Singh performed the procedure. He located a large circumferential fungating mass and ulcer within Mr Burg's stomach. He took samples for histological analysis and then ordered an urgent CT scan of Mr Burg's chest, abdomen and pelvis.

18 That scan was performed on 30 November 2018 and was reported on by Dr David Croser. Dr Croser concluded in his report that there was a large circumferential gastric body malignancy with transmural extension invading the pancreatic tail as well as loco-regional lymph node involvement and hepatic metastases.[8] Histology also confirmed the diagnosis of invasive stomach cancer.

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[5] T271
[6] T274
[7] T271.
[8] Exhibit C17 at 44

19 A consultant upper gastrointestinal and general surgeon, Dr Lachlan Dandie, saw Mr Burg as an outpatient on 5 December 2018. He informed Mr Burg of the devastating news that his cancer had recurred, had spread and was incurable, and that he was not suitable for surgery.[9]

20 Dr Dandie wrote a letter to Dr Vlachoulis regarding the appointment on 5 December 2018.[10] This letter is the most comprehensive and contemporaneous record of this appointment with Mr Burg. Dr Dandie wrote that unfortunately there was significant gastric wall thickening present on the CT scans from both February and July 2018, but this had not been reported by the radiologists.

21 A multidisciplinary team considered Mr Burg's case on 6 December 2018.[11] On 3 January 2019, Mr Burg was assessed by consultant medical oncologist, Dr Timothy Price.[12] Mr Burg was offered palliative chemotherapy, but he declined. He was instead treated with palliative symptom control to maintain a good quality of life.

22 Mr Burg fell on 30 August 2019 and was taken to the Modbury Hospital. He was able to be discharged home on 3 September 2019, but his health declined. He succumbed to his cancer on 28 September 2019.

Post-mortem review and cause of death

23 Mr Burg's death was not reported to me, as State Coroner. Mr Burg's body was placed in the care of a funeral director and subsequently buried. Following concerns being raised by Mr Burg's family about his death, then-Shadow Minister Boyer brought the matter to my attention and I accepted a report of the death. Given that Mr Burg's body had been buried, I was not able to direct any post-mortem surgical examination and instead a pathology review of the medical records was conducted at Forensic Science SA by Dr Iain McIntyre.[13] The advice given was that Mr Burg's cause of death could be determined without the need to progress to an autopsy. Dr McIntyre's opinion is that Mr Burg's death was as a result of metastatic gastric adenocarcinoma.[14] I am satisfied that Dr McIntyre's opinion is consistent with the evidence, and I find metastatic gastric adenocarcinoma to have been Mr Burg's cause of death.

Complaint and review

24 When Dr Dandie advised Mr and Mrs Burg of the new cancer, he suggested to them it would be worthwhile writing to the appropriate authorities, to make sure the error was raised through official channels. Dr Dandie also told the Burgs he would provide feedback through unofficial channels as well.

25 Prior to his death, Mr Burg did send a letter to the Minister for Health as suggested. He wrote that he did not blame anyone for his cancer, but he did blame The Queen Elizabeth Hospital for failing to diagnose his cancer at an earlier time when it may have been treatable.

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[9] Exhibit C20 at [8]
[10] Exhibit C17 at 133
[11] Exhibit C20 at LAD-3
[12] Exhibit C17 at 20
[13] Exhibit C2a
[14] Exhibit C2a

26 As mentioned, Mr Burg's case was discussed at a multidisciplinary team (MDT) meeting on 6 December 2018. Dr Rezaian happened to be the presenting radiologist at that meeting, and Dr Dandie was also present. It was confirmed at this meeting that the disease was stage 4 cancer and had spread too far to be responsive to surgery or chemotherapy.

27 On about 6 June 2019, Mr Burg received a response to his complaint from Ms Lesley Dwyer, then CEO of the Central Adelaide Local Health Network. The letter included the following statement:

> The CT scan of 8 July 2018 revealed a thickening of your stomach wall. Unfortunately, the oncologist who reviewed the test was not aware of this unexpected new finding. This finding, when associated with symptoms, could have led to further investigation and an earlier diagnosis of your stomach cancer. I am very sorry that this occurred and would like to assure you that clinical staff have been reminded of the importance of communicating and following up on unexpected findings on any study. Your case is being thoroughly investigated with a view to determine how your experience can be avoided in the future. Staff sincerely apologise that this has occurred, and that this finding was not recognised earlier. [15]

28 The Central Adelaide Local Health Network then conducted an investigation into Mr Burg's apparently delayed diagnosis. As part of that internal investigation, a review of Mr Burg's CT scans was undertaken by radiologist, Dr Christopher Pozza, the campus clinical head of The Queen Elizabeth Hospital branch of South Australia Medical Imaging (SA Medical Imaging). Dr Pozza's interpretation of the CT scans was used by the Central Adelaide Local Health Network review team.[16]

29 The review team included oncologist Dr Timothy Price, who as I have said was also involved with Mr Burg's care in early January 2019, and the clinical director of SA Medical Imaging, Associate Professor Marc Agzarian. The team-based review concluded that:

a. CT imagery from as early as the 28 February 2017 scan showed subtle stomach wall thickening, consistent with early stomach cancer. However, that radiology report was silent as to any stomach abnormality, suggesting that the abnormality had not been detected.

b. By the time of the 21 February 2018 scan performed by Dr Rezaian, the stomach wall thickening was more evident, cause for some concern, and should have resulted in the radiologist advising further testing. However, again, it appears that the abnormality was not detected.

c. The stomach wall thickening was definitely visible on the 6 July 2018 scan, and according to SA Medical Imaging policy, Dr Maddern, who reported on that scan, ought to have directly communicated his findings to the referring clinician. Dr Maddern did not do so.

d. Further, the absence of any reference to stomach pathology in the conclusion of his report may have led to this finding being either overlooked or underestimated by

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[15] Exhibit C3b
[16] Exhibit C7a

Dr Patterson and the clinicians involved with Mr Burg's care from that point onwards.

30 The team-based review team identified three missed opportunities to prevent the delayed diagnosis:

a. First, the reporting radiologist could have reiterated the finding of stomach wall thickening in the conclusion of the report;

b. Second, the referring clinicians could have read the whole report, including the body of the report and not just the conclusion; and

c. Third, the radiologist could have immediately communicated the incidental significant and unexpected finding of stomach wall thickening to the referring clinical team for follow-up, given that it lay outside of the scope of the clinical information provided in the referral or request. The team noted this also could have been documented in the summary at the end of the report.

31 These three opportunities identified for prevention focused solely on the July 2018 scan. It does not appear that the review team took any action in relation to the failure to identify stomach wall thickening on the earlier scans from 21 February 2018 and 28 February 2017.

32 The review team made five recommendations, as follows:

a. Mr Burg's case should be used as a learning opportunity for radiologists, in particular around the subtleties of detecting stomach lining cancers, via the distribution of an educational memo sent to SA Medical Imaging radiologists, to ensure comprehensive review of the stomach wall is conducted when reporting on abdominal CT scans.

b. Referring clinicians should be reminded of their obligation to read the entirety of the report for any tests they have requested, and not just the conclusion or comment.

c. Radiologists should be reminded to include in the conclusion or comments section of the report any abnormalities, key changes, follow-up questions and recommendations for further testing.

d. Radiologists should be reminded of their obligation to contact the treating team when significant or unexpected findings are identified.

e. That SA Health should be notified of the incident and subsequent review, and that they ought to escalate and progress work towards implementing a systemwide results-tracking system.

33 The review process appeared to be genuine and robust, although it deliberately deprived itself of the valuable assistance of the radiologists involved in pursuit of 'independence' that could have been achieved even with factual input by those involved. Nevertheless, the recommendations produced were sound. At the time of the inquest, the first four recommendations have been implemented, however the fifth remained a work in progress. Despite the review team setting a due date of 20 December 2019, it appears that the delay in implementation of results-tracking has clearly been a matter of some concern to SA Medical Imaging. I will address this separately below.

34 Notwithstanding that recommendation a. had been addressed in 2019, during the inquest SA Medical Imaging identified that further attention could be given to the issue under consideration. For that purpose a specific bulletin was circulated titled 'Detection of incidental gastric cancer on CT scans'. This was a positive initiative taken to proactively improve the state of public safety without needing to wait for a coronial recommendation to achieve it. I commend SA Medical Imaging for this approach.

Hindsight bias and adverse findings

35 An important consideration in the coronial jurisdiction is that of hindsight bias. When reviewing the actions of those involved in coronial cases, there is always a known outcome; either death or harm. It is always tempting to rely on that known outcome when considering the reasonableness of the actions taken by those involved. However, to do so is unfair. Each of us in our lives is expected to make decisions to either take action or not to take action. It is essential that we are all judged on these decisions on the basis of the information known to us, or that we should have known. If we are judged on knowledge that we cannot be expected to have had at the time, then that judgement is inherently unfair. This issue arose particularly strongly in this inquest because it involved particular scans taken at particular times that guided decisions about further investigations and the critical decision as to whether treatment was needed or not. I will be mindful not to allow hindsight bias to infect my decision-making process and to base my assessment of this matter purely on what was known, or ought to have been known at the relevant time.

36 I am also mindful of the principle in *Briginshaw v Briginshaw*.[17] I must take into account any significant consequences that are likely to accompany an adverse coronial finding. In relation to the assessment of the performance of doctors, those consequences have potential to be quite harmful, but less so when the adverse finding is of a failure without *mala fides*. Where I am considering an adverse finding, I will need to be certain that the finding is established on the basis of compelling and reliable evidence that leads me to a reasonable degree of certainty that the failing occurred.

Witnesses

37 Notwithstanding that some of the witnesses were directly involved in Mr Burg's case, I was generally impressed by their approaches to their evidence. The inquest explored a specialist field. Each witness clearly had expertise and significant experience in this field. It was of great assistance to hear evidence from so many experts, even though not all were called in the capacity of expert witnesses.

38 Where individual errors and also systemic issues were raised, witnesses who were still in practice were open to the idea of improvement and most were accepting of flaws in approach and decisions. Having heard all of the evidence I am satisfied that, subject to particular observations I shall make about Dr Maddern, all witnesses were doing their best to assist the Court and participating in the spirit of collegiality and improvement for the benefit of all.

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[17] (1938) 60 CLR 336

First signs of new cancer

39 Adenocarcinoma is an aggressive type of cancer that originates in the glands of the lining or mucosa of an organ and is the most common type of cancer which occurs in the stomach.[18] Gastric, or stomach, cancers are less common than colon, prostate or thyroid cancer. Covering South Australia and the Northen Territory, the Upper Gastrointestinal Multidisciplinary Team considers about fifty new cases each year.[19] Adenocarcinoma of the stomach most commonly metastasises to the liver, peritoneum, lungs and bones.

40 There was consensus among the medical experts who gave evidence that abnormal thickening of the stomach wall is consistent with, but not on its own a diagnostic of, gastric cancer. For that reason, when a thickening of the stomach wall is detected, it must be reported by the radiologist and then investigated, usually by endoscopy, to determine the cause of the thickening.

41 The evidence also established that stomach cancer that is identified while it is still at a curable stage is usually initially identified as an incidental finding,[20] as symptoms usually manifest quite late in the disease progression.[21]

42 Dr Rezaian said that there was an irregularity to the stomach wall which was arguably visible on the 27 February 2015 scan.[22] He said that it was subtle. Dr Pozza, Dr Dandie and Associate Professor Agzarian all considered the stomach wall to be uniform in this scan.[23] On the basis of the evidence, while I accept it is entirely possible that Dr Rezaian was able to detect something he considered could have been investigated, I am not able to conclude that signs of the new cancer were present on the 2015 scan.

43 Each of the witnesses who gave evidence during the inquest had reviewed the images taken during Mr Burg's various CT scans. All witnesses gave evidence that there was a thickening of the stomach wall evident on the 28 February 2017 scan.[24] Dr Chong described it as 'obvious'.[25] Dr Dandie's evidence was that this thickening was the subsequently discovered adenocarcinoma.[26] On the basis of the weight of the evidence, I find that signs of the new cancer were visible on the February 2017 scan. The detectable signs were a focal thickening of an area of the lesser curvature of the stomach wall with an estimated abnormal thickness of 23.36 mm and a concerning enhancement pattern.[27]

44 In their oral evidence, none of the witnesses spoke of the signs in the February 2017 scan being difficult to detect or subtle. It was stated in the conclusions of the internal review that the stomach wall thickening was subtle, however Associate Professor Agzarian explained that he had intended to convey that there was a subtle difference between the

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[18] T23 and T188
[19] T54 and T288
[20] T34, T54 and T353
[21] T190
[22] T354
[23] T88, T29 and T468
[24] T46, T114, T123, Exhibit C31 at 4, T439, T436, T468, T470 and T615
[25] T615
[26] T30
[27] T150

2017 and 2018 scans, rather than a subtlety inherent in the February 2017 scan itself, when compared to expected or normal physiology.[28]

45 I remind myself of the operation of hindsight bias. While the abnormality was not picked up in February 2017, all witnesses explained how clearly it was able to be seen. I was not persuaded by submissions that these witnesses knew what they were looking for and so their task was easy. That was not my impression of the evidence of any of the witnesses. They all appeared to be genuinely conveying that the signs of new cancer were present and observable in the scan images without the intrusion of hindsight bias. For that reason, confident that it is not the operation of hindsight bias which leads me to this conclusion, I find that observable evidence of Mr Burg's condition was present on the February 2017 scan. The question would have been more difficult to resolve if the signs were in any way subtle.

46 Dr Chong conceded, candidly and to his credit, that he had failed to detect these signs.[29] He did not try to suggest that the signs were not present, or that there was any subtlety to them. Given this, *Briginshaw* considerations largely fall away. I find that the signs should have been detected by Dr Chong and should have been the subject of specific comment in the report of the February 2017 scan. The reasons for this finding will be elaborated on below.

47 As to the February 2018 scan, Dr Dandie described the visible signs as 'obvious and apparent'.[30] Dr Rezaian also candidly conceded that he had not identified the signs that were visible on the February 2018 scan. Once again, *Briginshaw* considerations largely fall away. I find that the signs of Mr Burg's gastric cancer should have been detected by Dr Rezaian and should have been the subject of specific comment in the report of the 2018 scan. Again, the reasons why they were not will be discussed.

48 This naturally raises concern about whether there are safeguarding mechanisms in place to detect and correct errors. I will return to discuss the topic of safeguards.

Types of radiological errors

49 Associate Professor Agzarian gave evidence that the use of medical imaging has increased over time, and has become a tool often used as a substitute for admission to hospital for observation.[31] Notwithstanding its overall benefit to the health care system and that it is an invaluable tool, radiology is a field which is susceptible to errors, as is any field that relies on human assessments.[32]

50 There are two categories of diagnostic errors; perceptual and interpretative. Perceptual errors are those where a radiologist fails to perceive an abnormality. An interpretative error is one where a radiologist incorrectly interprets the significance of an abnormality they perceive.

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[28] T470 and T572
[29] T600
[30] T33
[31] T464
[32] Exhibit C33, MJA1 at 13

51 Associate Professor Agzarian gave evidence that perceptual errors cannot be eliminated except by involvement of a second party to the image review process.[33] That is because perception errors are usually brought about by distraction, tiredness or tunnel vision. These mechanisms of error are ones that affect the individual at specific times and are less likely to affect two separate individuals reviewing the same scan.

Field of view vs area of interest

52 An issue that became apparent during the inquest was the distinction between the field of view and the area of interest. Mr Burg underwent CT scanning of his chest, abdomen and pelvis. While this scan is not directed to the stomach, the stomach is nonetheless depicted within the field of view.

53 All witnesses asked agreed that the task of examining the results of any scan involves assessing all anatomical structures shown, not only those of specific interest.[34] The reason for this might be obvious – given that the patient is put through the risk inherent in exposure to radiation, then the maximum use should be made of the output.

54 I do not consider that the fact that the stomach was not the specific area of interest designated on the scan order alters in any way what I have found; that the signs should have been detected on the February 2017 and February 2018 scans.

Issues affecting the 2017 and 2018 scans

55 It was errors of perception that affected both the February 2017 and February 2018 scans. That is, two separate consultant-level radiologists a year apart both failed to perceive the signs of the new cancer. Various explanations were given as to how this occurred.

56 Firstly, it was evident that each radiologist focused on the clinical question posed; were there signs that Mr Burg's bladder cancer had returned. Of course, Mr Burg's bladder had been removed so it was a more a general question of whether there were signs of a recurrence of cancer. I heard evidence and highlight that the stomach is not a typical site of spread for bladder cancer and there is no known relationship between bladder and stomach cancer.[35] Dr Price said that metastatic spread of bladder cancer to the stomach would be 'very unusual'.[36]

57 I heard evidence that the interpretation of CT scan images of the stomach can be a complex task. While this was not proffered by anyone involved as an explanation for the events in this matter, I am satisfied that this potentially played a subconscious role. That is, I am satisfied that the perceived complexity of the task, when combined with the fact that it was not the focus of the requesting clinician's concern, led to a decision, conscious or otherwise, to focus efforts on the areas considered more likely to be of use in answering the clinical question.

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[33] Exhibit C33 at [39]
[34] T152, T218, T331, T421 and T478
[35] T310
[36] T377

58 In assessing the circumstances that brought about the failures to identify the signs of new cancer, it was particularly helpful to have frank and honest evidence from Dr Chong and Dr Rezaian, the radiologists involved.

59 Dr Chong gave evidence that in assessing the February 2017 scan he followed the Response Evaluation Criteria in Solid Tumours, or RECIST, model of practice.[37] This guides the radiologist to review the primary tumour site, then any lymph nodes, then any metastases and then anything else. That is, he followed a recognised methodical approach.

60 Dr Chong said that he had focused on the clinical question posed and so the stomach was not a part of the scan to which he paid particular attention. He said that his reliance on the RECIST clinical method did not provide the best opportunity to observe any incidental pathology. He said that, following Mr Burg's death, he had changed his practice and that he now conducts a conscious review of the stomach in all CT scans of the chest, abdomen and pelvis. He wrote in his affidavit that he had recently identified a stomach wall tumour which was less obvious than it was in Mr Burg's case.[38]

61 While Dr Chong initially said that the collapsed state of Mr Burg's stomach played a role, and Dr Dandie acknowledged that this can play a role, Dr Chong subsequently agreed that there was nothing about the images taken that made the signs of new cancer less evident.[39] Dr Chong said that if the requesting clinician had directed attention to the stomach, he would likely have perceived the signs and reported on them.[40]

62 Dr Chong also explained environmental factors that might affect his work. He said that on a typical day, he received continual phone calls from registrars, consultants and other clinicians as well as from clerical staff.[41] He was also interrupted to perform clinical work such as giving injections for patients being scanned and to assist others in the review of their images. He said that these interactions diverted his attention away from his reviews. He said that time spent dealing with and correcting errors of voice recognition software may have also played a part. Dr Chong said that he has changed his practice to reduce these interruptions, even though there is a risk he will be perceived as rude.[42]

63 Dr Chong said that he now asks patients undergoing a CT scan of the chest, abdomen and pelvis, as Mr Burg did, to drink 250-500 mL of water prior to the scan so that any abnormalities in the proximal small bowel and around the pancreas can be more easily detected.[43]

64 Dr Rezaian said that he approached his review of the February 2018 scan by assessing the spleen, adrenal glands and then pancreas. He then reviewed the lung tissue and detected the nodule he reported on and then looked for metastases.[44]

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[37] T598
[38] Exhibit C35 at [15]
[39] T625
[40] T347
[41] T594
[42] T627
[43] T608
[44] T301

65 Dr Rezaian also said that there were several factors that may have contributed to his failure to detect the signs of new cancer. He accepted that he may have been focusing on assessing for signs of the recurrence of bladder cancer. He also explained a radiologists' phenomenon known as 'satisfaction of search'. He explained that this meant when he found a nodule on the lung, he may have considered his search for pathology complete, rather than continuing to search the remaining images.[45] He explained that the lung nodule was potentially a concerning finding for a patient with a history of bladder cancer.[46]

66 Dr Rezaian said that if the stomach had been prepared, so that it was more distended, then the wall would have been thinner and any thickening easier to detect.[47] He said that a lack of proper preparation could lead to false positives that might lead to unnecessary investigations.[48]

67 Dr Rezaian said that he now approaches his work without any preconceptions about what he is looking for. He said that as a result he has become quite good at picking up incidental findings.[49]

68 In assessing these issues, it must also be observed that there is no policy or protocol requiring a radiologist to report on the stomach when the stomach (or part of it) is within the scanned volume. Given the evidence of the radiologists about their approach to their work, I consider that if there was such a formal requirement, Mr Burg's new cancer would have been detected in either the 2017 or 2018 scan, but more likely in both.

69 It was plain to me that both Dr Chong and Dr Rezaian have sincerely and conscientiously considered their own roles in the circumstances leading to Mr Burg's death and that they carry the weight of that. While I have found that they failed to detect visible signs of new cancer, I wish to make it plain that I do not consider those failings to have occurred because of any reckless or cavalier attitude to their work. In fact, I was impressed by each witness's expertise and the level of care each appeared to bring to this highly specialised and important work.

Dr Maddern's reticence about highlighting the apparently missed signs

70 Dr Maddern qualified as a medical practitioner in 1984 and became a fellow of the Royal Australian and New Zealand College of Radiologists in 1991. He was in private practice from 1993 and also held public appointments until his retirement in late 2024. He worked part-time as a senior visiting medical specialist at The Queen Elizabeth Hospital from 2003 until 2022.

71 As I have set out earlier, Dr Maddern included in his report on the 6 July 2018 CT scan:

> The stomach wall appears irregular possibly thickened. Clinical correlation would be appropriate. If there is further concern colonoscopy would be appropriate. [50]

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[45] T163
[46] Exhibit C31 at [16]
[47] T309
[48] T341
[49] T340 and T343
[50] C10; I note that, as the referring clinician would have understood, 'colonoscopy' was an error and 'endoscopy' was meant

72 As previously mentioned, Dr Maddern conceded that he knew at the time of reviewing the images that he had detected a possible gastric cancer.[51] He also agreed that he knew at the time that this abnormality was present in the February 2018 scan, which he reviewed, and he was surprised that there was no reference to it in Dr Rezaian's report.[52] However, he did not report upon his observation that the lesion was present in February 2018, nor did he include any description as to the progression of the lesion over that period. If he had done so, this would have added emphasis to the need for prompt attention to the issue.

73 Dr Maddern admitted that he was hesitant to include in his report that Dr Rezaian had missed identifying the gastric abnormality in February 2018.[53]

74 Having regard to all of the evidence, I was not able to understand and I reject Dr Maddern's position and explanation that to include this information would not have added to the clinical picture and that mention of the 'irregular possibly thickened' appearance was enough of a 'red flag' to ensure follow-up and further investigation by the referring clinician.[54]

75 Dr Maddern said that he used the words 'possibly thickened' due to the varying thickness of the stomach as a structure with variable distention,[55] in circumstances where he could not be 100% sure that it was thickened.[56] Although not specifically abandoned, this explanation fell away when Dr Maddern later agreed that there was no uncertainty in his mind that the stomach wall was thickened.[57] He eventually acknowledged that the word 'possibly' should not have been used.[58] Dr Pozza agreed.[59]

76 Another issue with the report is Dr Maddern's assertion that clinical correlation would be appropriate and [endoscopy] conducted if there was *further* concern. On its face, this suggests or is capable of being understood to mean that, for him at least, a requisite level of concern had not yet been reached, which did not properly represent Dr Maddern's state of mind. Dr Maddern accepted in his evidence that early stomach cancer can often be asymptomatic.[60] For that reason, clinical correlation was unlikely to dispel any further concern and was not required.

77 Another difficulty I have with Dr Maddern's position is that I accept the evidence of Dr Pozza that between February and July 2018 the appearance changed to show 'broader contact with the pancreas (approximately 37 mm), as well as evidence of direct tumour infiltration',[61] which is a particularly momentous occurrence. Dr Rezaian was referred to Dr Pozza's opinion and agreed, with the benefit of seeing the July 2018 scan, that the

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[51] T270
[52] T271
[53] T270
[54] Exhibit C29 at [46] and T275
[55] T263
[56] T264
[57] T282
[58] T283
[59] T136,139
[60] T270
[61] Exhibit C30

February 2018 scan was suspicious for pancreatic invasion.[62] Dr Dandie explained that this had a particular significance on Mr Burg's prognosis.[63]

78 Dr Pozza's evidence about what the July 2018 scan showed (compared with the February 2018 scan) was that 'it's spreading across the lower wall and it's thickened and abnormal. It's changed its nature in appearance. It's ulcerated now'.[64]

79 I reject the submissions made to me that Dr Maddern's report adequately dealt with what was such a significant finding and that Dr Maddern's report was 'not incomplete' because of its unclear description of the stomach wall and reference to clinical correlation. I reject the submission that it is not possible for a radiologist to understate the significance of any clinical finding as it is incumbent on the requesting clinician to investigate, even if ineffective language was used. A radiologist's report is more than mere guidance; it is a specialist opinion on diagnostic imaging. It must clearly and with unambiguous language ensure that the true situation, as assessed by the radiologist, is understood by the reader. Dr Maddern conceded, in effect, that although he wished for Mr Burg to get the investigation he needed, he also wished to achieve that without drawing to attention an earlier failing of a specialist radiologist colleague, although Dr Rezaian was not personally known to him.[65] Dr Maddern ought to have put that consideration to one side. It is no satisfactory answer to Dr Maddern's choice of language, which was imprecise, inaccurate and prone to mislead, that Dr Patterson could or should have been more diligent. The submissions made to me quoted expert opinions that clinicians would act on an understanding that the stomach wall was thickened but the submissions did not properly grapple with the fact that Dr Maddern's report recorded only a *possibly* thickened wall, where the expert opinions (including Dr Maddern's own opinion) were in no doubt. Earlier reference to irregularity cannot simply be taken to override the language used by Dr Maddern. It is this very language that was prone to mislead and result in a lack of true appreciation of the situation, of which Dr Patterson's evidence left no room for doubt.

80 It is particularly unfortunate that, the true state of Mr Burg's health finally having been uncovered by Dr Maddern, this was not unambiguously communicated in the report. This would have left no room for uncertainty that further investigation or other carefully considered action was required immediately.

81 I find that Dr Maddern identified Mr Burg's stomach abnormality and appreciated that it was possibly gastric cancer. Further, that his report did not clearly communicate that finding and gravely understated the appearance of the lesion and its significance.

Mr Burg's consultation with Dr Patterson and the influence of Dr Maddern's report

82 Dr Patterson is a retired medical practitioner, having practised since 1985, and as a consultant medical oncologist in private and public practice from 1995, in which year he became a fellow of the Royal Australian College of Physicians. Public practice included a part-time appointment at The Queen Elizabeth Hospital.

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[62] T323
[63] Exhibit C20a at [5]
[64] T111
[65] T272

83 Dr Patterson stated it was his invariable practice to read the entire radiology report prior to reviewing a patient[66] and for this reason he believed, without any independent recollection, that he did so before meeting Mr Burg. He understood that the purpose of his consultation with Mr Burg on 12 July 2018 was to review the findings of the 6 July 2018 CT scan in relation to the lung nodule identified by Dr Rezaian and long-standing liver lesion. He made a note in the medical record that the recent scan showed resolution of the previously noted lung nodule and that the liver lesion was stable.

84 Dr Patterson said that he did not attach clinical significance to the words 'irregular, possibly thickened'[67] and that he was able to say that because he took no action. He said that the language used did not necessarily raise red flags for him and that reports of the stomach being possibly thickened over the years have been very, very common and, in the absence of clinical correlation, may not be followed up.[68] He said that the finding being absent from the conclusion section of the report also made him feel as though it was not a finding which the radiologist believed to be of clinical significance.[69] He said that, in accordance with the suggestion in the report, he asked Mr. Burg if he had symptoms and as he did not, there was no need for an endoscopy.[70]

85 By the end of his evidence Dr Patterson considered it most likely that he read the report but 'didn't read it very well' in the sense that he 'brushed over' the words about the stomach.[71] He was candid in that regard. I regarded Dr Patterson as an honest witness, who readily made concessions against his interest and sincerely regretted his own failure to recognise the need for Mr Burg to undergo further investigations. On the balance of probabilities, I find that Dr Patterson did read the entire report but, for reasons I have discussed, failed to appreciate the significance of what was reported. I note that this is contrary to the assumption made in the internal review, without interviewing Dr Patterson, that he did not read the body of the report.

86 I am satisfied and I find that Dr Maddern's approach of not stating or highlighting the true state of affairs as he had assessed it to be made a direct contribution to the issue being perceived by Dr Patterson to be of less clinical significance than it was. Without intending to diminish my conclusions as to Dr Patterson's failure, it is understandable how that occurred.

87 Dr Price, who participated in the internal review, gave evidence that if he had received Dr Maddern's report, he would have reviewed the scan images himself to determine whether there was any thickening and that he would have conducted a clinical assessment to identify any symptomology.[72] Dr Patterson agreed that it may have been helpful if he had conducted a clinical assessment of Mr Burg.[73] He said that if the language used in the report was clearer than 'possibly', he would have contacted Dr Maddern to enquire further.[74] After being shown the imaging during his evidence, Dr Patterson said that he

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[66] T183
[67] T187
[68] T188 See also Dr Price at p271. Dr Chong agreed that radiologists tend to err on the side of caution when reporting on stomach wall thickening where there is a degree of uncertainty, transcript, p618.
[69] T192
[70] T192
[71] T 200
[72] T395
[73] T196
[74] T193

would have managed Mr Burg differently if he had viewed those images directly himself.[75] Dr Patterson also said that if the report had made it clear to him that the 'possible' thickening was also present on the 2018 scan, it would have 'made a huge difference' to his approach.[76]

88 I find that Dr Patterson ought to have more carefully read Dr Maddern's report and on what was presented to him, he ought to have conducted further assessment as to what needed to be done. As I have made clear, that is not to observe that Dr Maddern's report was sufficient, only that Dr Patterson should reasonably have done more than he did. I note that Dr Patterson specifically made no criticism of Dr Maddern. Dr Maddern, on the other hand, specifically submitted that the entire scope of criticism should be focused on Dr Patterson.

89 I pause to observe that, as found by Dr Patterson, Mr Burg was not experiencing any stomach symptoms at the time of this appointment (which is common)[77] and so, while I find that after reading Dr Maddern's report Dr Patterson ought to have explored whether there were clinical symptoms, I consider that a full clinical examination would not have altered the course of events.

Individual error or systemic issue?

90 The inquest explored whether Dr Maddern's was an individual error or reflective of a systemic issue. The Royal Australian and New Zealand College of Radiologists publishes guidelines setting out what should be included in a radiological report. Where any lesion is detected, the size and extent of it should be reported.[78] The extent in Mr Burg's case was particularly important as evidence of likely invasion of the pancreas was observable. The guidelines suggest that an opinion as to the most likely diagnosis should be included. Once again, here, if Dr Maddern had indicated a likely, or even possible, diagnosis of stomach cancer, I have no doubt that would have altered the course of events. In fact, I consider it probable, having regard to Dr Patterson's evidence, that the very fact Dr Maddern left out these key features of a standard report may have contributed to Dr Patterson's false level of comfort about the scan. The guidelines also specifically require all imaging observations to be summarised in the conclusion.[79]

91 I find that Dr Maddern's report did not comply with the College of Radiologists' report guidelines. I have considered whether this was a consequence of not wishing to draw attention to his opinion as to what the scan showed and the failure (of Dr Rezaian) to detect it in the earlier scan. Dr Maddern was given the opportunity to comment on this suggested finding during submissions and accepted that his report was not compliant with the requirement to repeat key findings in its conclusion,[80] although he had expressly refuted in his affidavit the suggestion that anything more than the answer to the clinical question posed was required to be included in the conclusion.[81]

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[75] T194
[76] T202
[77] T190
[78] Exhibit C34 at 6
[79] Exhibit C34 at [2.8]
[80] Written submissions on behalf of Dr Maddern at [79]
[81] Exhibit C29 at [57]

92 I was presented with no evidence which caused me to have concern that there is any widespread issue in relation to the application of the guidelines.

93 It was also pointed out to me that there are formal procedures established by SA Medical Imaging which are to be followed following significant or unexpected findings. These act as a safeguard against a lack of further action and missed diagnoses. I am satisfied that Dr Maddern did not, but should have, followed these procedures.

94 In particular, the procedures require a radiologist to contact the requesting clinician immediately upon making any 'significant and or unexpected' findings.[82] This description clearly fits Mr Burg's results. If followed, Dr Maddern would have been required to speak to Dr Patterson personally. The consequences of that, had he done so, are plain and would have represented a genuine opportunity to afford Mr Burg earlier treatment.

95 Dr Maddern gave evidence that he was not aware of the SA Medical Imaging procedures and that he instead followed his own protocol to call the requesting clinician only if treatment was required within hours, but otherwise leaving the requesting clinician to simply read his report.[83] However, the Court received evidence that Dr Maddern had been sent the procedures in 2017.[84] I also highlight that Dr Pozza was sent a memorandum four days prior to Mr Burg's scan which dealt with unexpected urgent findings and he arranged for this to be sent to all medical staff including Dr Maddern,[85] specifically reminding them of the need to notify requesting clinicians of unexpected findings.

96 After agreeing that when he reviewed the July 2018 scan he was confident that what he was seeing was quite possibly a gastric cancer that needed urgent treatment, Dr Maddern maintained that the reason he did not telephone the referring clinician was that he did not think that the referring clinician would not act, upon reading his report.[86]

97 In the end, I do not need to determine if Dr Maddern was genuinely not aware of the procedure, as I am certain of an overriding factor. If Dr Maddern was aware of the procedure, I am satisfied that he would not have acted on it. I am satisfied, on the balance of probabilities, and taking into account *Briginshaw* considerations which here require a high degree of persuasive evidence, that Dr Maddern had decided not to draw attention to the failure to highlight the presence of apparently related abnormality in the earlier scan and instead placed confidence in the oncology unit to find the issue themselves after he strongly alluded to it, thereby having Mr Burg diagnosed and treated without attention being focused on the unrecognised abnormality in the earlier scan. This conclusion emerged in light of the overall evidence, combined with Dr Maddern failing, in my opinion, to explain with any cogency why he described what he knew to be a thickened stomach wall, as 'possibly thickened'. I do not consider that Dr Maddern did this in order to harm Mr Burg or with any ill will, but I am satisfied that he did not place the potentially serious consequences to Mr Burg at the top of his considerations.

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[82] This is consistent with this Court's earlier recommendation in the *Inquest into the death of Edward John Mayell* (7 April 2017)
[83] T277
[84] Exhibit C27
[85] T126
[86] T275

98 I heard evidence about varying practices, in particular in relation to the level of significance a finding needs to be before a call to the requesting clinician is made.[87] I also heard evidence that a call to the requesting clinician is more a professional courtesy rather than a mandatory obligation of procedure.[88] I consider that Dr Maddern's unique approach was not consistent with a desirable principle of building redundancy into the radiology reporting system to mitigate the consequences of predictable errors.

99 There was no evidence which established a systemic refusal to engage with the procedures. In fact, the evidence satisfied me that there is a generally good level of familiarity with the procedures and a generally good level of compliance. In that light, I consider Dr Maddern's approach and his decision-making process in Mr Burg's case to be a singular one and not suggestive of a wider issue.

100 Notwithstanding that the procedure did not appear to guide Dr Maddern, if he knew of it, the evidence did highlight a lack of clarity in relation to whether a call to the requesting clinician is mandated where there is any *unexpected* finding, which some witnesses thought was unnecessary,[89] or whether there needed to be some significance associated with the unexpected finding. I note that the clinical standards require such a policy to exist, to address 'urgent and significant unexpected findings'.[90] That phrase appears more consistent with the issue that such a policy ought to address and I consider that the SA Medical Imaging procedure should be made clearer.

101 Associate Professor Agzarian gave evidence that in drafting the SA Medical Imaging procedure, he deliberately left out the concept of 'urgency' because he wanted to ensure that anything unexpected resulted in a phone call to the requesting clinician.[91] Associate Professor Agzarian's commitment to patient safety is commendable but if this approach is perceived to be overzealous it might arguably unintentionally lead to a reduction in compliance. This will need to be carefully considered and while SA Medical Imaging may not wish to introduce the concept of urgency, the full consequences of leaving it out need to be carefully considered and at the very least a higher level of clarity is needed in the procedure. I will make a recommendation about that. I received considered submissions on behalf of SA Medical Imaging agreeing that the procedure could be updated to better define the inclusion criteria along the lines of 'findings that have the potential to alter the clinical management of the patient' (both time critical and non-time critical) and the exclusion criteria along the lines of 'findings that do not alter the clinical management of the patient'. I do not wish to limit or dictate the wording, which should be determined after careful consideration.

102 Another topic upon which I will make a recommendation is an associated difficulty raised by the clinicians who gave evidence. This is, that radiologists can have difficulty in actually contacting the requesting clinician.[92] I consider that forms can be amended to rectify this issue and that such a reform is not in any way onerous.

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[87] For example, T397
[88] T160
[89] For example, T319
[90] Exhibit C34
[91] T289 and T492
[92] T127 and T396

Could Mr Burg have been treated?

103 Stomach cancer is one of the more aggressive forms of cancer. The average survival time for a person with stage 4 metastatic stomach cancer who undertakes treatment is around 12-14 months.[93]

104 Dr Dandie gave evidence that if the signs had been detected following either the 2017 or 2018 scan, an endoscopy would have resulted.[94] An endoscopy is a procedure in which an endoscope is passed down the oesophagus into the stomach providing a view of the oesophageal and gastric mucosa as well as the small bowel and duodenum.[95] Dr Dandie was certain an endoscopy would have confirmed the presence of the cancer.[96]

105 Following identification of the cancer by endoscopy, gastric cancer is treated with surgery, however that can only be undertaken if the cancer is localised within the stomach and completely resectable.[97] If surgery is to be performed, chemotherapy is administered for two to three months in advance to increase the chances of success. Chemotherapy is then repeated after resection.[98]

106 Patients with resectable gastric cancer who are treated with the usual chemotherapy and surgery protocol have a five-year survival rate of 40-50%.[99] Those who do survive for five years are considered to have been cured, although recurrence of cancer can always occur.[100] The result is that, with early identification, Mr Burg's condition was more likely to have been treatable and, if successful, he likely had a close to 50% chance of surviving a further five years. It is important to observe that even if fewer years than that could be achieved, they would have been meaningful years for Mr Burg and his family and so what is under consideration is of genuine consequence. Of course, it was also possible that early treatment could have seen him fall within the 40-50% of cases where he would be considered cured.

107 Dr Pozza gave evidence that Mr Burg's cancer was quite confined to the stomach wall in the 2017 scan.[101] His opinion was that if the cancer was identified in that scan, Mr Burg was likely a suitable candidate for surgery and therefore had a good chance of being 'cured'. While expressing hesitation, Dr Dandie did agree that Mr Burg could potentially have had successful treatment following the 2017 scan.[102] I accept this position reached by Dr Pozza and partially supported by Dr Dandie.

108 The issue was more complex to assess when considering the February 2018 scan, by which time Mr Burg's cancer had been allowed to develop unchecked for a year. Dr Dandie accepted that Mr Burg could still have had a reasonable chance of being cured if treated at this stage, but he only considered it as equally probable with unsuccessful

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[93] T379
[94] T31
[95] T189
[96] T31
[97] T30
[98] T380
[99] T380
[100] T380
[101] T360
[102] T52

treatment.[103] During the inquest, Dr Pozza was recalled to clarify further his opinion about the specific timing of the invasion of the pancreas.[104]

109 Dr Pozza's final opinion was that in the February 2018 scan, the fat plane, which is visible in the February 2017 scan as separating the stomach from the pancreas, could no longer be seen. The result is that by February 2018 the stomach and pancreas were abutting each other for about 27.7 mm.[105] Dr Pozza said that he could not be certain of the significance of that change as microscopic examination would have been required to assess the nature of the adjoining cells and whether cancer cells were by then present in the pancreas. Dr Rezaian agreed with Dr Pozza's analysis and also said that the scan displayed conditions suspicious for pancreatic invasion, but not definitively.[106] The fact that this nuance was identified only after evidence was given and a further critical review was directed speaks to the level of complexity of diagnoses of this level of precision using imaging.

110 Following Dr Pozza's refined evidence, Dr Dandie revised his opinion, as any expert witness would be expected to do following receipt of further information. It was quite proper for Dr Dandie to do so. Dr Dandie said that in February 2018 Mr Burg was actually only a borderline candidate for surgery.

111 It can now be seen that the circumstances shown in the February 2018 scan are not inconsistent with pancreatic invasion already having occurred.

112 The issue is even more complex when considered from the perspective of Dr Maddern's report. That is because, as I have observed, by the time of that scan in July 2018 the cancer had likely invaded the pancreas. As I have explained, the suitability for surgical treatment is particularly affected by the localisation of the cancer. Dr Dandie's evidence was that chemotherapy commenced after Dr Maddern's report would have had a small chance of improving the situation enough to fit Mr Burg within the bounds of what is possible for surgery.[107] However, he said that overall, by this time, Mr Burg's cancer was more likely incurable.[108]

Preventability

113 A question for the Court to determine is whether Mr Burg's death from the cause I have found could have been prevented around the time of any of the failings I have identified. As to this question, statistics about the low survival rate five years post-diagnosis are not particularly apt. When assessing the public purpose of an inquest, there is good reason to place less weight on low long-term survival rates when assessing preventability. That is, if there are opportunities to prevent a person's death at the time it occurred, and give them any significant additional lifespan, then those opportunities ought to be embraced.

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[103] T52
[104] T357
[105] Exhibit C30
[106] T333 and Exhibit C30
[107] Exhibit C20a at [5.6]
[108] Exhibit C20a at 3

114 In light of all of the evidence I received during the inquest, I am satisfied of the following on the balance of probabilities:

a. If Mr Burg's stomach cancer was identified in the February 2017 scan, he would have been able to undergo treatment which probably would have prevented his death. Even if he was not free of cancer within five years, it is likely his life would have been significantly prolonged.

b. If Mr Burg's stomach cancer was identified in the February 2018 scan, I am unable to conclude that treatment would have been available that would have prevented his death.

c. If Dr Maddern had either clearly conveyed in his report and conclusions as to the July 2018 scan, that there was thickening of the stomach wall which was possibly cancer, or if he had contacted the referring clinician, or both, it would not have prevented Mr Burg's death.

d. If Dr Patterson had viewed the source images personally, or conducted an in-depth clinical assessment of Mr Burg, it would not have prevented his death.

2020 letter and results-tracking system

115 I received into evidence a letter dated 20 May 2020 from SA Medical Imaging Directors John Kolovos and Associate Professor Mark Agzarian addressed to the Acting Chief Medical Officer, Dr Michael Cusack.[109] In this letter, the authors formally requested that SA Health escalate the implementation of a results-tracking system for medical imaging. The authors cautioned that SA Medical Imaging had been involved in the investigation of a number of serious patient incidents over the prior two years, and that these incidents have the common theme of missed cancer diagnosis.

116 They wrote that in several cases the root cause of the incident was a failure by the referring clinician to follow-up on medical imaging results, leading to a lack of awareness of a significant early finding of cancer. They wrote that a results-tracking system would significantly reduce patient harm by reminding referring clinicians to follow-up results on a test-by-test basis, and more importantly, would escalate those results that have not been followed up within a predetermined time to the referring clinician, and if necessary their clinical manager.

117 While work commenced on a results-tracking system in late 2017, it appears to have stalled in mid-2019. In August 2023, staff of the Coroners Court wrote to Dr Cusack requesting advice as to whether the proposed results-tracking system had been implemented. Dr Cusack responded that it had not, but that the implementation of results-tracking had been escalated and remained the focus of substantial work. He advised that the implementation of an electronic medical-record-based results-tracking system would become available in November 2023. He said that the intention was that there would be a pilot of the new system at The Queen Elizabeth Hospital in 2024. However, the Court was then advised in May 2024 that there were delays with the deployment of this system. During the inquest, the Court was advised that a new piece

[109] Exhibit C6a

of software was to be trialled in April 2025 and that a specific solution for flagging abnormal results or unexpected findings is also under development.

Artificial intelligence

118 The Court heard evidence about technology that might be able to provide a safeguard against missed diagnoses. Associate Professor Agzarian explained that artificial intelligence has been shown to be effective when used in conjunction with human radiologists and that its most effective role is akin to a 'spell check' which draws attention to potential areas of concern.[110] Dr Rezaian said that such technology is already in use in the private sector.[111]

Recommendations

119 I am required to consider whether there are any recommendations that I consider are appropriate to make that might prevent a recurrence of the same or similar circumstances, or which might improve public health and safety. I am satisfied that it is appropriate to make a number of recommendations in this matter.

120 I make the following recommendations directed to the Royal Australian and New Zealand College of Radiologists:

One To develop a template or other method or methods of guidance in the reporting of computed tomography, plain x-ray and magnetic resonance imaging investigations, to ensure that all anatomical structures within the scanned volume which are appropriate to review, are critically reviewed and reported upon, whether or not they are within the area of concern identified by the requesting clinician.

Two That consideration be given to the merits of a protocol for preparing the stomach by water filling prior to CT scans which may capture the stomach, to increase the likelihood of detecting incidental gastric pathology.

Three That a bulletin be published raising awareness among all radiologists that stomach cancer can be detected incidentally on any CT scans that include the stomach within the scanned volume and this is the most likely means of detecting stomach cancer at a treatable stage.

121 I make the following recommendations directed to South Australia Medical Imaging and the Minister for Health and Wellbeing:

Four To more clearly define the circumstances where a call must be made to the requesting clinician within the Notification of Significant and/or Unexpected Findings procedure.

Five To introduce a statewide requirement for radiology hard-copy and electronic request forms to include working-hours and (for use in urgent or emergency circumstances only) after-hours contact details for the requesting clinician.

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[110] T509-T511
[111] Exhibit C31 at [32]

Six To consider implementing artificial intelligence assistance in the interpretation of imaging to support expert radiologist interpretation.

122 I make the following recommendation directed to the Minister for Health and Wellbeing:

Seven That SA Health introduce a statewide policy requiring internal review processes to engage with clinicians involved, in a sensitive and non-accusatory way, to the extent of ascertaining their versions of events, so that the review proceeds upon a proper understanding of what happened.

Condolences

123 There was a particularly tragic component to Mr Burg's death in that he was subject to ongoing monitoring for a known risk of cancer and he was discharged from this ongoing monitoring for the first time in ten years at a time when cancer was present and developing. He would have felt a great sense of relief from the news that he was no longer required to be monitored, a relief which was later dashed when he was given devastating news not only that he in fact had cancer, but that it had advanced to a degree that it could not be treated. It was especially tragic that there were two separate opportunities to identify his condition that were missed. Compounding this failure, when the true state of affairs was detected, it was not reported with the clarity that such a significant finding deserves.

124 Mr Burg's death in these circumstances would have had a lasting impact on his family and compounded their grief. I extend my condolences to them for their loss.

Keywords: *CT scan; Stomach Cancer; Incidental Findings; Medical Imaging*