STATE CORONER'S COURT
OF NEW SOUTH WALES

Inquest:	Inquest into the death of Mahmoud Houri
Hearing dates:	18 October 2018
Date of findings:	26 October 2018
Place of findings:	NSW State Coroner's Court, Glebe
Findings of:	Magistrate Derek Lee, Deputy State Coroner
Catchwords:	CORONIAL LAW – death in custody, care and treatment, intraabdominal pathology, volvulus, ROBODOC, medical officer review
File number:	2012/192526
Representation:	Mr T O'Donnell, Coronial Advocate Assisting the Coroner Mr J Lawrence, instructed by Legal Aid Commission of NSW, for Mr Houri's family Ms E O'Brien for the Commissioner for Corrective Services NSW Mr P Rooney, instructed by Makinson d'Apice Lawyers, for Justice Health & Forensic Mental Health Network
Findings:	I find that Mahmoud Houri died on 19 June 2012 at Prince of Wales Hospital, Randwick NSW 2031. The cause of Mahmoud's death was multiple organ failure due to the consequences of multiple gunshot wounds to his body. Mahmoud died from natural causes whilst in lawful custody.

Non-publication orders: Pursuant to section 74(1)(b) of the *Coroners Act 2009*, I direct that the following material is not to be published:

1. The names, addresses and other personal information that might identify:

   (a) Any member of Mr Houri's family; and
   (b) Any person who visited Mr Houri whilst in custody (other than legal representatives or visitors acting in a professional capacity).

2. The names, personal information and Master Index Numbers of any persons in the custody of Corrective Services NSW other than Mr Houri.

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1. Introduction

1.1 Mr Mahmoud Houri died at Prince of Wales Hospital on 19 June 2012. At the time Mahmoud was in lawful custody, serving a sentence that had been imposed some years earlier. In May 2012 Mahmoud was transferred to hospital following deterioration in his condition related to gunshot injuries that he had suffered in 2002.

2. Why was an inquest held?

2.1 Under the *Coroners Act 2009* (**the Act**) a Coroner has the responsibility to investigate all reportable deaths. This investigation is conducted primarily so that a Coroner can answer questions that they are required to answer pursuant to the Act, namely: the identity of the person who died, when and where they died, and what was the cause and the manner of that person's death.

2.2 When a person is charged with an alleged criminal offence, or sentenced after being convicted of a criminal offence, they can be detained in lawful custody. By depriving that person of their liberty, the State assumes responsibility for the care of that person. Section 23 of the Act makes an inquest mandatory in cases where a person dies whilst in lawful custody. In such cases the community has an expectation that the death will be properly and independently investigated.

2.3 A coronial investigation and inquest seeks to examine the circumstances surrounding that person's death in order to ensure, via an independent and transparent inquiry, that the State discharges its responsibility appropriately and adequately. This is so even when the death of a person in lawful custody believed to be due to natural causes.

2.4 Inquests have a forward-thinking, preventative focus. At the end of many inquests Coroners often exercise a power, provided for by section 82 of the Act, to make recommendations. These recommendations are made, usually, to government and non-government organisations, in order to seek to address systemic issues that are highlighted and examined during the course of an inquest. Recommendations in relation to any matter connected with a person's death may be made if a Coroner considers them to be necessary or desirable.

3. Mahmoud's life

3.1 Inquests and the coronial process are as much about life as they are about death. A coronial system exists because we, as a community, recognise the fragility of human life and value enormously the preciousness of it. Recognising the impact that a death of a person has, and continues to have, on the family and loved ones of that person can only serve to strengthen the resolve we share as a community to strive to reduce the risk of preventable deaths in the future.

3.2 Understanding the impact that the death of a person has had on their family only comes from knowing something of that person's life and how the loss of that life has affected those who loved that person the most. Therefore it is extremely important to recognise and acknowledge the life of that person in a brief, but hopefully meaningful, way.

3.3 Mahmoud was born in 1984 and grew up in the Sydney suburb of Bankstown. He was the oldest of six siblings and was particularly close to his sister, Fatma. Mahmoud suffered from learning difficulties and, as a result, struggled with his studies at school from a young age. However, Mahmoud enjoyed taking part in sports activities at school and did well at them. He was a keen follower of the Canterbury rugby league team. Mahmoud was also an excellent soccer player and during his later years, according to Fatma, had attracted the interest of some higher grade soccer clubs.

3.4 Although he did not finish high school, Mahmoud always intended to do so. At the time of his incarceration Mahmoud was enrolled in a TAFE course to study marine mechanics. Mahmoud also had aspirations to eventually study in the fields of economics and management.

3.5 Tragically, Mahmoud's life was prematurely cut short at the age of 27. There is no doubt that Mahmoud was, and still is, loved by his parents and siblings, and is greatly missed. Mahmoud's parents and sister, Fatma, attended the inquest and each of the court appearances leading up to it. The grief which Mahmoud's death has brought them was plain to see. It is most upsetting to know that Mahmoud has been taken from them, and from the rest of his family, at such a young age.

4. Mahmoud's previous custodial and medical history

4.1 On 20 December 2003 Mahmoud was involved in an offence surrounding the attempted robbery of a petrol station. Mahmoud was armed with a weapon at the time and during the course of the offence, the console operator of the petrol station was fatally injured. Following a lengthy police investigation, Mahmoud was later arrested on 13 October 2005 and charged with the offence of murder.

4.2 Between the time of the offence in December 2003 and his subsequent arrest in October 2005, Mahmoud was involved in another offence. This occurred on 6 March 2004. During the commission of this offence Mahmoud was shot by a security guard, resulting in serious injuries to his chest. He was later taken to St George Hospital where surgery was performed. This resulted in the removal of Mahmoud's spleen and one of his kidneys. As a result of the gunshot injuries Mahmoud was rendered paraplegic.

4.3 Following his conviction for the December 2003 offence, Mahmoud was sentenced on 14 June 2007. He received a term of imprisonment of 18 years, with a non-parole period of 12 years and 6 months. Taking into account time spent in custody prior to being sentenced, Mahmoud was eligible for release to parole on 12 April 2018.

4.4 After being received in the custody of Corrective Services NSW (**CSNSW**) Mahmoud was initially housed at the Metropolitan Remand and Reception Centre. He was later transferred to correctional centres at Parklea and then Goulburn.

4.5 Between July 2006 and August 2008 Mahmoud attempted self-harm on a number of occasions. He was commenced on antidepressant and antipsychotic medication. On occasion, Mahmoud was transferred to Long Bay Hospital for mental health care and treatment.

4.6 On 21 August 2008 Mahmoud experienced an acute serious medical event resulting in his transfer to hospital. Surgery was performed the following day resulting in the resection of Mahmoud's small bowel. This lead to Mahmoud being commenced on Total Parenteral Nutrition (**TPN**), a method of supplying a person with their nutritional needs intravenously, and thereby bypassing the usual process of eating and digestion. The circumstances surrounding the events of 21 August 2008 are discussed in more detail below.

4.7 Between 2009 and 2012 Mahmoud had multiple admissions to Prince of Wales Hospital for treatment of sepsis and central catheter line changes, pancreatitis, fungal septicaemia, jaundice and hepatitis, blood transfusions and intravenous antibiotics. Mahmoud was particularly susceptible to infections due to his need for TPN, and as a consequence of his injuries associated with his gunshot wound.

5. What happened in May and June 2012?

5.1 On 7 May 2012 Mahmoud was transferred to Prince of Wales Hospital for the final time, for treatment of sepsis. After having been diagnosed with kidney stones in March 2012, Mahmoud underwent lithotripsy (a treatment using sound waves or laser to break up stones in the urinary tract) on 24 May 2012. Following this, Mahmoud was transferred to the Intensive Care Unit as he was found to be hypotensive and in need of inotropic support (medication used to manage heart conditions). Mahmoud later developed renal failure and received dialysis.

5.2 Mahmoud was under the care of Professor Andrew Lloyd, a consultant infectious diseases physician. Professor Lloyd wrote to Mahmoud's solicitors on 23 May 2012 and explained that Mahmoud had several serious medical conditions[1]:

(a) He was a paraplegic with substantive muscle weakness and wasting, and loss of bowel and bladder control;

(b) He had short gut syndrome (problems related to absorption of nutrients due to loss of parts of the small intestine), having essentially lost all of his small bowel and a significant portion of his colon, and was entirely dependent on intravenous feeding (TPN);

(c) He had several episodes of osteomyelitis (bone infection) complicating pressure sores on his heels;

(d) He had a single kidney and recent obstruction with a stone and associated infection in that kidney causing acute renal failure;

(e) He had frequent episodes of septicaemia (blood infection) associated with bacterial or fungal organisms in the bloodstream.

5.3 Ultimately, Professor Lloyd described Mahmoud's prognosis as being "*very poor*" and that any one of the episodes of infection might be fatal.[2] Professor Lloyd described the trend as being one of

[1] Exhibit 1, Tab 24, page 1.
[2] Exhibit 1, Tab 24, page 2.

deterioration and offered the opinion that there was 50% probability that Mahmoud would have a fatal infection in the next two to three years.

5.4 By 7 June 2012 it was noted that Mahmoud had developed a right pleural effusion (an unusual amount of fluid around the lung) and his condition continued to deteriorate. Mahmoud's treating team discussed end-of-life arrangements with him and he was transferred to the high dependency ward on 15 June 2012. Further end-of-life arrangement discussions took place between Mahmoud, his family and the treating team. It was later decided on 19 June 2012 that Mahmoud would be placed on a palliative care pathway and that he was not for resuscitation, intubation or dialysis.

5.5 At about 10:26pm on 19 June 2012, Mahmoud was found to be unresponsive in bed with no signs of life. In accordance with palliative care arrangements, no attempt at resuscitation was made and Mahmoud was pronounced life extinct.

5.6 It should be noted that in August 2016, Professor Lloyd expressed the opinion that he was "*not aware of any specific failures either at Corrective Services or at Prince of Wales Hospital that may have contributed to Mahmoud's prolonged illnesses and ultimate death*".[3]

6. What was the cause and manner of Mahmoud's death?

6.1 Mahmoud was later taken to the Department of Forensic Medicine in Glebe where Professor Johan Duflou performed an autopsy on 22 June 2012 by. Professor Duflou found that there was extensive evidence of prior injury, consistent with multiple gunshot wounds. In particular, Professor Duflou noted that there were large quantities of fluid found around the heart and lungs, and that there were changes consistent with renal failure and liver failure.[4] Professor Duflou ultimately offered the opinion that the cause of Mahmoud's death was multiple organ failure due to the consequences of multiple gunshot wounds to the body.

6.2 In order to understand the connection between the gunshot wounds Mahmoud suffered in 2002 and his death in 2012, an opinion was sought from Dr John Raftos, an emergency medicine physician. Dr Raftos expressed the following opinion:

> "*Mr Houri would not have developed the adhesions that caused the volvulus of his small bowel that led to his short bowel syndrome if he had not been shot and required laparotomy to remove his injured spleen and kidney. Similarly he would not have become paraplegic and had recurrent severe urinary infections if he had not been shot in the spine. Therefore it is reasonable to say that his death was attributable to the consequences of the gunshot wounds to his abdomen and spine*".[5]

6.3 **Conclusion:** Mahmoud died from multiple organ failure due to the consequences of multiple gunshot wounds he suffered in 2002. It is clear that the consequences of Mahmoud's gunshot injuries made him more susceptible to natural disease process. Therefore, Mahmoud died from natural causes.

[3] Exhibit 1, Tab 25.
[4] Exhibit 1, Tab 7, page 3.
[5] Exhibit 1, Tab 26, page 11.

7. What happened on 21 August 2008?

7.1 Prior to the inquest, counsel for Mahmoud's family raised in issue whether there was a causal connection between the surgery performed on Mahmoud in August 2008 and his eventual death in 2012. Further, an issue was raised as to whether Mahmoud was provided with appropriate care and treatment by Justice Health and Forensic Mental Health Network (**Justice Health**) staff on 21 August 2008. It is therefore necessary to more closely examine the events of that day.

7.2 On 21 August 2008 Mahmoud was housed at Goulburn Correctional Centre. According to the progress notes made by staff from Justice Health, Mahmoud activated his cell call alarm (commonly known within the correctional setting as "knocking up") at about 3:35am, complaining of vomiting. A Justice Health nurse went to Mahmoud's cell in response to the knock up.

7.3 On examination Mahmoud was found to be sitting on his bed, restless and hyperventilating. It became apparent that Mahmoud had vomited a small amount of liquid and some noodles into a bowl. Mahmoud's vital signs were taken and he was found to have a blood pressure reading of 138/76, pulse of 104 and his respiratory rate was 32.

7.4 Dr Mark Yee was the on-call medical officer on 21 August 2008. At about 3:35am he received a call for advice regarding Mahmoud's condition. He noted that Mahmoud had symptoms of vomiting but had normal vital signs and no fever. Dr Yee prescribed Maxolon, medication used for the treatment of nausea and vomiting, which was later given to Mahmoud. Following this, Mahmoud was moved to an observation cell and a note was made for him to be reviewed in the morning.

7.5 The Justice Health progress notes records the following entry relating to this interaction with Mahmoud:

> "*Inmate was again knocking up upon our arrival at the unit & stating he would kill himself if not seen. [On examination] inmate sitting on bed, restless & hyperventilating. A small amount of liquid [with] some type of noodle was in a bowl next to him and was the result of his vomiting*".[6]

7.6 RN Gail McLean assessed Mahmoud at 6:00am. She found that Mahmoud was complaining of abdominal pain just below the navel. She saw that Mahmoud had vomited some noodles onto the floor of his cell, but that that there was no blood visible. She palpated Mahmoud's abdomen and noted that he had a full bladder but no guarding. RN McLean gave Mahmoud a catheter to self-catheterise (which he had done many times previously) and gave him some Panadeine for his abdominal pain. RN McLean measured Mahmoud's vital signs, which were all within normal limits, and made arrangements for him to be reviewed in the clinic later that morning.

7.7 Mahmoud later presented to the clinic at about 9:00am. He was complaining of abdominal cramping and pain to his abdomen, along with feeling lethargic and thirsty. RN Michael Harris took Mahmoud's vital signs which were within normal limits. RN Harris then made a call to the Justice Health ROBODOC service. In 2008 this was an on-call system which allowed for a full-time medical officer to be contacted during weekday business hours for medical advice. Phone calls made outside of weekday business hours were managed by an on call roster for doctors.

[6] Exhibit 1, Tab 36.

7.8 The duty medical officer made an order for Buscopan, medication used to treat stomach and bowel cramps. Mahmoud was placed in the clinic for observation and rest. According to the progress notes it appears that Mahmoud was later given Buscopan at 11:00am and at that time it was recorded in the progress notes that he continued to tolerate water.

7.9 At 1:00pm Mahmoud was again reviewed by RN Harris. At that time it was noted that there was a significant deterioration in Mahmoud's condition. It was noted that his pulse was weak and thready. RN Harris contacted Dr Yee who recommended that immediate arrangements be made for Mahmoud to be transferred to hospital for further assessment and treatment.

7.10 At about 2:00pm paramedics arrived and conveyed Mahmoud to Goulburn Base Hospital. It was realised that the seriousness of Mahmoud's condition required him to be treated at a tertiary level hospital. Therefore, arrangements were made to transfer Mahmoud to Canberra Hospital. On arrival there Mahmoud was found to be in hypovolaemic shock with metabolic acidosis. It was suspected, from x-ray results, that Mahmoud had a small bowel obstruction.

7.11 Surgery commenced at about 2:42am on 22 August 2008 during which it was identified that Mahmoud had extensive infarction (tissue death due to inadequate blood supply) of the entire small intestine, as well as of the right half of the colon. The case of the infarction was a full 180 degree rotation volvulus of the root of the mesentery (a fold of membrane that attaches the intestines to the abdominal wall).

7.12 According to the report of the surgeon who performed the operation, "*the extent of intestinal infarction was initially deemed to be a non survivable condition however, after careful discussion with anaesthetist, correctional facilities officer, and phone conversation with patients [sic] mother and father, it was decided to make an attempt at resection to see if the patient would survive*".[7] A laparotomy (surgical incision into the abdominal cavity) was performed, resulting in total small bowel resection with right hemicolectomy (removal of one side of the colon).

7.13 Following surgery Mahmoud was transferred to the intensive care unit where he remained until 23 August 2008 in a stable condition. Mahmoud was later transferred to the general ward. On 30 August 2008 Mahmoud was transferred to Prince of Wales Hospital.

8. Was appropriate care and treatment provided to Mahmoud on 21 August 2008?

8.1 In order to examine the appropriateness of the care and treatment provided to Mahmoud, opinion was sought from two experts. Dr Anthony Greenburg, a general and gastrointestinal surgeon, was briefed by the Coroners Court to provide a number of expert reports. Similarly, Justice Health made arrangements for Dr Christopher Vickers, a consultant gastroenterologist and hepatologist, to also provide a number of reports. Both Dr Greenburg and Dr Vickers gave evidence during the inquest.

8.2 A volvulus occurs when a loop of intestine twists around itself and the mesentery that supports it. This often results in bowel obstruction where the mesentery becomes so twisted that blood supply to the intestine is cut off, resulting in ischaemic bowel.

[7] Exhibit 1, Tab 21.

8.3 Dr Greenburg initially said that it was not clear what the underlying aetiology of Mahmoud's volvulus was. He explained that small bowel volvulus involving the entire small intestine is, fortunately, a rare event. For this to happen, and to have the entire small bowel to have its entire blood supply interrupted, would be regarded as a catastrophic event.[8]

8.4 However, he opined that "*the most likely cause of Mr Houri's acute small bowel infarction (that led to the resection of the entire small bowel) was the result of adhesions*" following Mahmoud's surgery in 2002 for his gunshot wounds.[9] An adhesion is a band of scar tissue that joins two internal body surfaces that are not usually connected. Adhesions develop as the body attempts to repair itself. This normal response can occur after surgery or injury. They can cause a range of problems, including bowel obstruction and blockage. Dr Greenburg further opined in a subsequent report that "*irrespective of the cause the acute small bowel infarction was completely unpredictable and serendipitous and could not have been foreseen*".[10]

8.5 Ultimately, Dr Greenburg expressed the opinion that:

(a) When Mahmoud was complaining about having abdominal pain, the severity of his intraabdominal pathology was not recognised, and Mahmoud was therefore misdiagnosed;[11]

(b) In retrospect, the diagnosis was missed or not recognised by Justice Health staff on 21 August 2008;[12]

(c) Letters written by Mahmoud after 21 August 2008 were consistent with him experiencing a serious intraabdominal event on that day;

(d) Earlier transfer to Goulburn Hospital would have been appropriate; and

(e) The delay in reviewing Mahmoud until 9:00am on 21 August 2008 "*was significant and may have contributed to the ultimate outcome*".[13]

8.6 The two letters referred to by Dr Greenburg were written by Mahmoud on 19 February 2009 and 18 March 2009. In the first letter Mahmoud referred to events "*sometime in August*" 2008. He said that he felt "*very, very ill*" which prompted him to use the cell call alarm. Mahmoud said that whilst he waited to be seen by a Justice Health nurse, he "*started to feel more ill and the pain was worse than getting shot and I requested several times for a medical ambulance to go to the Hospital that's how serious it was and it was only getting more worse as each time passed by*".[14]

8.7 In his second letter, Mahmoud wrote that he "*started to get very serious bad pain in the guts, the pain was unbearable and then [he] started to vomit a lot non-stop again and again. [He] could not stop vomiting and all along the pain in [his] guts was getting more worse [sic] and worse*".[15] Later in his letter, Mahmoud wrote:

[8] Exhibit 1, Tab 27, page 2.
[9] Exhibit 1, Tab 28, page 2.
[10] Exhibit 1, Tab 28, page 2.
[11] Exhibit 1, Tab 43, page 4.
[12] Exhibit 1, Tab 30, page 7.
[13] Exhibit 1, Tab 30, page 6.
[14] Exhibit 1, Tab 30.
[15] Exhibit 1, Tab 32.

"*At around 8:00am I was in such bad shape I had to be put in a wheelchair to the in-house jail medical clinic to see the medical staff. I told them what had happened to me, all the symptoms and how I had fallen ill seriously that night. They said it could be food poisoning or a bad case of gastro bug so I was put in an observation cell for a few more hours until I then got more worse and sick and they finally decided to call an ambulance to go to the hospital after my continuous protesting that I needed urgent hospital [sic]*".[16]

8.8 Dr Vickers expressed the opinion that there was an appropriate duty of care present each time Mahmoud was assessed by Justice Health staff on 21 August 2008 at 3:35am, 6:00am, 9:00am and 1:00pm. In particular Dr Vickers opined that:

(a) Mahmoud's symptoms at 3:35am were consistent with a simple stomach complaint and anxiety, there was no report of abdominal pain, and it was reasonable for him to be moved to an observation cell in case he developed any further symptoms;

(b) There was nothing about the 6:00am review which "*would indicate a serious medical event in evolution*" and Mahmoud's symptoms were still consistent with an acute stomach complaint such as a common gastroenteritis;[17]

(c) At 6:00am a bowel obstruction related to gut volvulus would have produced profuse and bile-stained vomiting, however there was no bile-stained vomitus recorded, only noodles and possible (unwitnessed) blood;[18]

(d) At 9:00am Mahmoud's blood pressure and pulse had actually improved and his "*examination showed no signs of serious concern*";[19]

(e) If Mahmoud actually had an evolving mesenteric volvulus since 3:35am then it would not be possible for his vital signs, blood pressure and pulse, to be normal six hours later.[20] Instead, Mahmoud's vital signs ought to have crashed and he would be *in extremis* (at the point of death);

(f) By 1:00pm a clear and unexpected change had occurred, although the symptoms were still too early and non-specific to have predicted a calamitous event where Mahmoud would need surgery some hours later.[21]

8.9 In conclusion, Dr Vickers found that Justice Health staff "*found no acute surgical signs that warranted an upgrade in care for doctor call-back [or] for transfer to Hospital*".[22]

8.10 In response to the opinions expressed by Dr Greenburg, Dr Vickers opined that the symptoms that Mahmoud was displaying – abdominal pain with cramps, food only non-bilious vomiting, no abdominal tenderness – were common in the general population and not indicative of hospitalisation

[16] Exhibit 1, Tab 32.
[17] Exhibit 1, Tab 40, page 4.
[18] Exhibit 1, Tab 44, page 2.
[19] Exhibit 1, Tab 40, page 5.
[20] Exhibit 1, Tab 44, page 2.
[21] Exhibit 1, Tab 40, pages 5-6.
[22] Exhibit 1, Tab 40, page 9.

or requiring an extensive battery of tests.[23] Dr Vickers opined that it was not reasonable for Dr Greenburg "*to rely heavily on a subjective a posteriori letter from Mr Houri compared to the contemporaneous medical records of the Justice Health staff*".[24]

8.11 Further, Dr Vickers referred to the fact that total mid-gut volvulus is a rare condition and difficult to diagnose. In support of this, Dr Vickers referred to an extract from academic literature which noted that, from a study of patients, in eight out of 11 cases a diagnosis of volvulus could not be made clinically, and only by CT scan.[25] On this basis, Dr Vickers concluded that it was unreasonable for Dr Greenburg to refer to Mahmoud as being "*misdiagnosed*".

8.12 In concurrent evidence given during the inquest, it was evident that Dr Greenburg took a more moderate view than the views expressed in his reports. He indicated that he and Dr Vickers had reached a consensus view and that Justice Health staff had demonstrated an appropriate duty of care to Mahmoud on 21 August 2008.

8.13 The only matter raised by Dr Greenburg was that, in his view, it would have been appropriate for Mahmoud to have been reviewed by a medical practitioner by 9:00am on 21 August 2008. However, in expressing this view, Dr Greenburg acknowledged that he was unfamiliar with the protocols involved in a correctional setting for such a review to take place. Further, Dr Greenburg acknowledged that even if such a review had occurred it was not possible to say whether Mahmoud's intraabdominal pathology would have been detected. Dr Greenburg repeated the view expressed in his report that the volvulus suffered by Mahmoud was a rare event and that it would have been difficult for an expert such as himself to detect, let alone a general practitioner (**GP**) attending as part of a medical officer review.

8.14 Dr Vickers acknowledged that, in his view, it would have been appropriate for Mahmoud to have been reviewed by a medical officer *at some stage* during 21 August 2008. In this regard, Dr Vickers drew an analogy between a person in the community who had experienced discomfort during the night calling a GP practice or medical centre the following morning to make an appointment to see a doctor later that day. Dr Vickers therefore expressed a contrary view to Dr Greenburg in the sense that he did regard that any of Mahmoud's symptoms warranted Mahmoud being reviewed by a medical practitioner at 9:00am on 21 August 2008. In this regard, Dr Vickers repeated the opinion expressed in his reports that Mahmoud's vital signs had actually improved by 9:00am and that his symptoms were consistent with a common stomach complaint.

8.15 **Conclusion:** The expert evidence established that the medical event experienced by Mahmoud on 21 August 2008 was rare and unpredictable. Studies in academic literature indicate that diagnosing the volvulus which Mahmoud suffered is exceedingly difficult, with a diagnosis only being made following CT imaging. Further, both Dr Vickers and Dr Greenburg indicated in evidence that in their combined experience of many years they had not seen another patient present with a condition similar to Mahmoud's. Having regard to these factors it could not reasonably be said that on 21 August 2008 any Justice Heath staff failed or diagnose, or misdiagnosed, the condition that Mahmoud was suffering from.

[23] Exhibit 1, Tab 44, page 3.
[24] Exhibit 1, Tab 44, page 3.
[25] Exhibit 1, Tab 44, page 3.

8.16 The letters written by Mahmoud in 2009 contained some descriptions of symptoms which, according to the contemporaneous progress notes, were not disclosed to the Justice Health staff assessing and treating Mahmoud on 21 August 2008. It is most likely that Mahmoud was providing an accurate account in his letters of what he was physically feeling on 21 August 2008. Whilst these accounts are consistent with a serious intraabdominal event, as Dr Vickers noted these accounts do not appear to have been communicated to Justice Health staff. In particular the progress notes record no complaint of abdominal pain made by Mahmoud at 3:35am. There is no doubt that Mahmoud's letters would have been difficult and distressing for his family to read in retrospect. However, on the information available to Justice Health staff at the relevant time on 21 August 2008 time Mahmoud was provided with appropriate care and treatment.

8.17 This is because the observations made of Mahmoud and the symptoms displayed and communicated by him at 3:35am, 6:00am and 9:00am were not clinically indicative of serious intraabdominal pathology. When there was an obvious deterioration in Mahmoud's condition by 1:00pm on 21 August 2008 there was an appropriate response by recognition of a medical emergency and escalation of Mahmoud's care. Given the improvement in vital signs by 9:00am, there was no clinical evidence to warrant Mahmoud being reviewed by a medical officer at that time.

9. Would earlier medical review prior to 1:00pm on 21 August 2008 have altered the outcome?

9.1 Dr Greenburg also expressed the view that although Mahmoud's "*prognosis was guarded and his situation grave, it is accepted that the earlier patients with severe small bowel ischaemia are diagnosed and operated upon, the more likely their chances of survival*".[26]

9.2 Dr Vickers hypothesised in his reports that even if Mahmoud had been transferred to hospital at 9:00am it would have meant his surgery would have occurred four hours earlier. However, he concluded that at this time "*the intestine would still have been substantially unsalvageable*".[27] Dr Vickers noted that if it was assumed that the onset of vascular occlusion occurred at around 3:35am, at the sign of first symptoms, then total unsalvageable infarction of the gut occurred at 2:42am on 22 August 2008, some 24 hours later. This meant that if Mahmoud had surgery at 10:30pm, some 19 hours later, then the small difference of four hours "*would probably have made little difference given that the entire gut was dead by [2:30am]*".[28]

9.3 In evidence, Dr Vickers referred to the progress notes for 21 August 2008 and noted an entry which appeared to suggest that at 11:00am Mahmoud was able to tolerate water. In Dr Vickers' opinion this meant that the sudden decline in Mahmoud's condition occurred between 11:00am and 1:00pm, not between 9:00am and 1:00pm. This narrowing of time was significant because, in Dr Vickers' view, it meant that the first possible opportunity for Mahmoud to be transferred to hospital was sometime after 11:00am. If this had occurred, then it meant that the ultimate surgery could only have been performed two hours, and not four hours, earlier. This shortening of a possible window of opportunity only reinforced in Dr Vickers' mind that earlier surgery would not have altered the outcome.

[26] Exhibit 1, Tab 43, page 5.
[27] Exhibit 1, Tab 40, page 9.
[28] Exhibit 1, Tab 40, page 9.

9.4 Dr Vickers also noted that Mahmoud was hypotensive at 1:00pm and that, in retrospect, this indicated the commencement of dead gut and endotaxaemia (endotoxins in the blood which may cause hameorrhages, necrosis of the kidneys, and shock). From this Dr Vickers opined that earlier surgery at 10:30pm may have salvaged little. Therefore, there would not have been sufficient viable small bowel length to avoid Mahmoud requiring long-term TPN.[29]

9.5 In evidence Dr Greenburg remained of the general view that a person suffering from an intraabdominal event had better prospects of a good outcome the earlier surgical intervention occurred. However, Dr Greenburg acknowledged that in Mahmoud's case it was pure speculation whether earlier surgery would have allowed for his bowel to have been salvageable. Ultimately, Dr Greenburg expressed doubt that any earlier transfer to hospital would have made any difference to the outcome.

9.6 In this regard it should be noted that Dr Vickers opined that he did not think that the events in May and June 2012 "*bear any direct consequence to the surgery in 2008*".[30] Dr Vickers explained that the cause of Mahmoud's death was renal failure due to chronic, and then acute, urosepsis from recurrent renal stones in his single kidney. This in turn was a consequence of the gunshot wounds suffered by Mahmoud where his kidneys were irreversibly damaged.

9.7 **Conclusion:** Even if Mahmoud had been reviewed by a medical officer at 9:00am on 21 August 2008, and it was recognised that he required urgent transfer to hospital, it is more probable than not that this would not have altered the outcome in any material way. This is because the evidence established that even if Mahmoud's surgery had taken place four hours earlier (around 10:45pm on 21 August 2008 instead of at 2:42am on 22 August 2008) by that time his intestine was unsalvageable. This, in turn, means that there would not have been sufficient viable bowel length remaining for Mahmoud to avoid TPN requirement. It should be noted that in evidence Dr Vickers explained that the surgery at Canberra Hospital was performed not to save Mahmoud's bowel but, rather, to save his life.

9.8 Further, the evidence suggests that Mahmoud's sudden decline occurred between 11:00am and 1:00pm on 21 August 2008. This then means that there was an even narrower timeframe within which surgery could have taken place. Logically, this means that there was even less likelihood for any of Mahmoud's bowel to be salvaged and, therefore, for the outcome to have been altered.

9.9 It should be remembered that regardless of the possible outcomes on 22 August 2008, the evidence established that there was no causal connection between the events of August 2008 and Mahmoud's ultimate death. The expert opinions expressed by Professor Duflou, Dr Raftos and Dr Vickers all establish that Mahmoud's multi-organ failure was a consequence of the gunshot wounds he suffered.

10. Should any recommendations be made?

10.1 In 2010 the Clinical Excellence Commission introduced the *Between the Flags* program. This is a package which provides improved systems in managing deteriorating patients. Mahmoud's

[29] Exhibit 1, Tab 40, page 10.
[30] Exhibit 1, Tab 40, page 8.

respiratory rate was noted to be 32 at 3:35am on 21 August 2008. According to *Between the Flags* policy, this measurement would have been in the red zone and triggered a rapid response.[31]

10.2 It was submitted by counsel for Mahmoud's family that a recommendation should be made mandating that a Justice Health medical officer is to physically attend on an inmate patient and review them. It was further submitted that a doctor, with more training and experience than a nurse, would have been more likely to, in the words of counsel for Mr Houri's family, "*pick up that something was not in order*".

10.3 **Conclusion:** The available evidence does not establish that it is either necessary or desirable for a recommendation to be made pursuant to section 82 of the Act. This is because no clinical evidentiary basis has been demonstrated, either generally or specific to the events of 21 August 2008, for such a recommendation of the type submitted by counsel for Mr Houri's family to be made. It should be remembered that Justice Health nursing staff were in regular contact with on-call medical officers on 21 August 2008 and appropriately sought advice from them, and that Mahmoud's vital signs had actually improved by 9:00am. Further, it should be noted that the suggested recommendation advocated for by counsel for Mr Houri's family was vague and non-specific.

10.4 The evidence established that the medical episode experienced by Mr Houri was rare and exceedingly difficult to diagnose. It further established that even if review by a medical officer (as opposed to nursing staff) had occurred prior to 1:00pm it was not possible to say whether earlier transfer to hospital would have occurred. Indeed, the evidence established that at least up until 11:00am on 21 August 2008 Mahmoud's symptomology was consistent with a common abdominal complaint not warranting hospitalisation.

10.5 Further, the introduction of the *Between the Flags* program since Mahmoud's death has created a safety net by which abnormal clinical findings in a patient's vital signs are escalated for appropriate clinical response. Although there was no direct evidence regarding this, it can be assumed that such a response would involve advice being sought from a medical officer. There is no evidence to suggest that, in such a scenario, a medical officer could not exercise appropriate clinical judgment so that it would be necessary to mandate their physical attendance on an inmate patient.

11. Findings pursuant to section 81 of the *Coroners Act 2009*

11.1 Before turning to the findings that I am required to make, I would like to acknowledge, and express my thanks to Mr Tim O'Donnell, Coronial Advocate, for his assistance both before, and during, the inquest. I also thank Detective Senior Constable Michael Roberts for his role in the police investigation and for compiling the initial brief of evidence.

8.1 The findings I make under section 81(1) of the Act are:

Identity

The person who died was Mahmoud Houri.

[31] Exhibit 1, Tab 41 at [10].

Date of death

Mahmoud died on 19 June 2012.

Place of death

Mahmoud died at Prince of Wales Hospital, Randwick NSW 2031.

Cause of death

The cause of Mahmoud's death was multiple organ failure due to the consequences of multiple gunshot wounds to his body.

Manner of death

Mahmoud died from natural causes whilst in lawful custody.

19.1 On behalf of NSW State Coroner's Court I extend my sincere and respectful condolences to Mahmoud's parents and siblings, and the rest of his family, for their tragic loss.

19.2 I close this inquest.

Magistrate Derek Lee
Deputy State Coroner
26 October 2018
NSW State Coroner's Court, Glebe