CORONER'S COURT
OF NEW SOUTH WALES

Inquest:	Inquest into the death of Mahmoud Allam
Hearing dates:	17 to 19 February 2020
Date of findings:	25 March 2020
Place of findings:	Coroner's Court of New South Wales at Lidcombe
Findings of:	Magistrate Derek Lee, Deputy State Coroner
Catchwords:	CORONIAL LAW – death in custody, Parklea Correctional Centre, methicillin-resistant Staphylococcus aureus, observations, antibiotic therapy, *Therapeutic Guidelines: Antibiotic*
File number:	2016/186812
Representation:	Mr J Edwards, Counsel Assisting, instructed by Mr J Loosley (Crown Solicitor's Office) Ms T Berberian for GEO Group Australia Pty Ltd, instructed by S Cheng (GEO Group Australia Pty Ltd) Mr B Bradley for Justice Health & Forensic Mental Health Network, Dr C Valabjee and Enrolled Nurse L Steel, instructed by S Idowu (Makinson d'Apice Lawyers) Ms H Cooper (Legal Aid Commission of New South Wales) for the family of Mahmoud Allam Ms J De Castro-Lopo (Legal, Department of Communities and Justice) for the Commissioner of Corrective Services New South Wales Ms B Haider (New South Wales Nurses and Midwives' Association) for Registered Nurse R Hayter

Findings:	I find that Mahmoud Allam died on 19 June 2016 at Westmead Hospital, Westmead NSW 2146. The cause of Mahmoud's death was MRSA sepsis. Mahmoud died as a result of natural disease process, whilst in lawful custody. This natural disease process most likely involved development of facial skin infection in an inmate patient with community-acquired methicillin-resistant Staphylococcus aureus colonisation (CA-MRSA), followed by spread of the skin infection, concurrent with spread of CA-MRSA from the facial skin to the right cavernous sinus, and bloodstream invasion by CA-MRSA. Metastatic sites of infection included the lungs and epidural and prevertebral spaces, leading to a number of manifestations, including cavernous sinus thrombosis, encephalitis, epidural abscess, overwhelming sepsis and multi-organ failure.
Recommendations:	See Appendix A
Non-publication orders:	See Appendix B

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1. Introduction

1.1 On 3 June 2016, Mahmoud Allam, a 28-year-old young man, was taken into lawful custody and later transferred to Parklea Correctional Centre on 8 June 2016. Three days later, Mahmoud presented at a clinic within the correctional centre with cold like symptoms. Following repeated presentations over the next several days, Mahmoud was eventually transferred to hospital on the morning of 16 June 2016. Subsequent investigations confirmed the presence of a serious bacterial infection. The rapid progression of Mahmoud's disease was mirrored by the rapid deterioration of his condition. Mahmoud later tragically died on 19 June 2016, eleven days after entering a correctional centre.

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 is 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 investigated in an objective manner. This is because a coronial investigation and an inquest seek to examine the circumstances surrounding that person's death in order to ensure, through an independent and transparent inquiry, that the State appropriately and adequately discharges its responsibility.

2.3 In this context it should be recognised at the outset that the operation of the Act, and the coronial process in general, represents an intrusion by the State into what is usually one of the most traumatic events in the lives of family members who have lost a loved one. At such times, it is reasonably expected that families will want to grieve and attempt to cope with their enormous loss in private. That grieving and loss does not diminish significantly over time. Therefore, it should be acknowledged that the coronial process and an inquest by their very nature unfortunately compels a family to re-live distressing memories several years after the trauma experienced as a result of a death, and to do so in a public forum.

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. Recognition of 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 Mahmoud's life in a brief, but hopefully meaningful, way.

3.3 Mahmoud was born on 24 February 1988 to his parents Nada and Youssef Allam. He was one of six children, with three brothers and two sisters. Mahmoud's family initially lived in Granville before later moving to Auburn. Mahmoud attended Auburn Public School and later Granville High School until Year 10.

3.4 As young boy Mahmoud was very active and loved being outdoors. He was talented in many sports. As a young child, Mahmoud showed great interest and skill in gymnastics. Later, Mahmoud took his sporting talents to the rugby league field, where he played for the Berala Bears and later for the Guildford rugby league team. After receiving numerous sporting awards, Mahmoud's high school teachers suggested that he had the talent to pursue a career in sports.

3.5 After leaving school, and while still maintaining his love for sports, Mahmoud began work as a painter. Mahmoud had a particular interest and skill in painting, and often assisted his family members with different painting tasks. This willingness to assist others typified Mahmoud's generous nature.

3.6 Mahmoud had many friends from many different backgrounds. He was a very sociable person. No doubt others gravitated towards Mahmoud because of his kind-hearted and caring nature. Mahmoud had a strong sense of community, was well known in his local area, and often gave his time freely and unselfishly for the benefit of others.

3.7 Although Mahmoud did not have any children of his own, his family never held any doubts that he would have made a loving and devoted father. Apart from the bonds that Mahmoud had with his parents and siblings, he was also loved by his many nieces and nephews, and he adored them in return.

3.8 Mahmoud's strong sense of family, and the importance of it, only serves to underline what his loss means to those who loved him most. The enormous, tragic and sudden nature of their loss is truly distressing. Mahmoud leaves behind his loving parents and siblings, along with his extended family, all of whom are proud to call Mahmoud their beloved son, brother, and uncle.

4. Background to the events of June 2016[1]

4.1 Mahmoud had his first interaction with the criminal justice system as an adult in 2006. He later served a period in custody before committing an armed robbery offence in 2012. This resulted in a further sentence of imprisonment of five years, with a non-parole period of two years and six months. Mahmoud was subsequently released to parole. However, on 3 June 2016 Mahmoud was arrested pursuant to a revocation of parole warrant as a result of being charged with further offences.

4.2 Following his arrest, Mahmoud was detained in the cells at Penrith Court complex. During a routine custody management assessment process Mahmoud reported no medical conditions, and made no complaints of any illness or pain, apart from sleeping problems and lower back pain.[2] On 5 June 2016, Mahmoud was assessed by a nurse from Justice Health & Forensic Mental Health Network (**Justice Health**) in the cells at Penrith Court complex. It was noted that he had nil significant health issues and was suitable to be transferred to a correctional centre for normal cell placement. Mahmoud was subsequently taken to Amber Laurel Correctional Centre on 7 June 2016.

5. The events of June 2016

Admission to Parklea Correctional Centre

5.1 The following day, 8 June 2016, Mahmoud was admitted to Parklea Correctional Centre. On admission another assessment was performed by a Justice Health nurse as part of an intake screening assessment. Mahmoud again identified that he had been experiencing lower back pain, but denied any recent temperature or fever, or having used illegal or perception drugs in the preceding four weeks. Observations were taken of Mahmoud and they were found to be within normal limits. Mahmoud was prescribed Panadeine (presumably for pain relief in relation to his lower back pain) and also nicotine replacement therapy (**NRT**) patches. He was then cleared for normal cell placement.

11 June 2016

5.2 On the afternoon of 11 June 2016 Mahmoud attended the Area 3 clinic, a treatment room separate from the main clinic at Parklea that was generally used to treat "walk in" patients. Mahmoud saw a Justice Health nurse and reported cold like symptoms including a runny nose, ongoing back pain and reflux. Mahmoud's temperature was taken and he was found to be afebrile. Mahmoud was given Sudafed for his cold like symptoms, Panadeine for his pain, and Rennie for his reflux. No other remarkable findings were identified during this assessment.

12 June 2016

5.3 On the afternoon of the following day, 12 June 2016, Mahmoud again presented to the Area 3 clinic where he was seen by the same Justice Health nurse as the previous day. Mahmoud complained of

[1] This factual background has been drawn from the helpful opening address of Counsel Assisting.
[2] This back pain (together with neck and leg pain) was related to a thoracic vertebrae injury which Mahmoud suffered as a result of a motor vehicle accident on or about 25 March 2016.

a cough and was given medication consisting of a senega and ammonia mixture (used to treat a "wet" cough). In addition, Mahmoud was also given the medication that he had been provided with the previous day.

13 June 2016

5.4 At about 8:57am Mahmoud activated the call alarm button in his cell, a procedure known within the correctional setting as "knocking up". He spoke to a correctional officer and said that he needed to attend the clinic. In the recording of the knock up Mahmoud's voice can described as being hoarse or raw.

5.5 At around 1:00pm (although the precise time is unclear) Mahmoud was later taken to the Area 3 clinic where he was assessed by a different Justice Health nurse than the one who saw Mahmoud on 11 and 12 June 2016. It was noted that Mahmoud was complaining of cold and flu like symptoms. Mahmoud was again given Sudafed and Panadeine, but not any further medication in relation to treatment of his cough.

5.6 After being returned to his cell, Mahmoud knocked up again at 4:20pm and 4:50pm. On each occasion Mahmoud requested cough medicine and complained to the correctional officers that he spoke to that it should have been provided when he had visited the Area 3 clinic earlier that day. Again, in the recording of the call Mahmoud's voice can be described as being hoarse. Despite Mahmoud's requests, it does not appear that any cough medication was initially provided to him. At 7:56pm, Mahmoud knocked up again and repeated his request. The correctional officer who answered the call indicated that she could do nothing more in relation to Mahmoud's request other than to pass it on to relevant Justice Health staff. Mahmoud did not consider this to be a satisfactory response, resulting in a heated exchange between himself and the correctional officer.

5.7 About five minutes after the call ended the same correctional officer used the knock up system to call Mahmoud to advise him that she had spoken to a Justice Health nurse. Mahmoud was informed that he would have to wait until the following day for his cough medicine. Mahmoud was again dissatisfied with this response and reacted in an angry manner.

14 June 2016

5.8 At about 6:42am on 14 June 2016 Mahmoud again knocked up and told the correctional officer that he spoke to that he had not slept and was having trouble breathing. Correctional officers subsequently attended Mahmoud's cell in order to take him to the main clinic. CCTV footage depicts Mahmoud stumbling and catching himself on a railing as he left his cell. As Mahmoud walked down the stairs from his cell he supported himself on the railing, and was assisted by a correctional officer. The footage also shows Mahmoud appearing to clutch his chest area.

5.9 During the trip to the main clinic Mahmoud was unable to continue walking, even with the assistance of the accompanying correctional officers. A wheelchair was obtained and Mahmoud was taken to the main clinic in the wheelchair. On arrival Mahmoud was taken into the clinic for several minutes, but subsequently placed in a secure area known as the "clinic cage" at the clinic

entrance. He remained in this area for approximately 40 minutes, before being taken into the clinic at about 7:20am for an assessment.

5.10 Enrolled Nurse (**EN**) Lynda Steel assessed Mahmoud in the clinic. It was noted that Mahmoud was complaining of chest pain, appeared to be suffering from cold and flu like symptoms, and that he reported that he had been coughing up black phlegm after smoking NRT patches. Importantly, it was noted that Mahmoud had a small blind pimple at the end of his nose. EN Steel took Mahmoud's observations, which were within normal limits, and carried out an electrocardiogram (**ECG**) test which was also normal. EN Steel gave Mahmoud Panadeine for symptomatic relief, and arrangements were made for him to be kept in the clinic for observation for over an hour. Following this period of observation, Mahmoud reported to EN Steel that he was feeling much better and wanted to return to his cell. Arrangements were made for this to occur. CCTV footage of Mahmoud's return to his cell depicts him to be walking normally without assistance.

5.11 Due in part to a lockdown at Parklea from 11:00am onwards, Mahmoud remained in his cell for the remainder of the day (after making several telephone calls before being returned to his cell). Mahmoud's cellmate at the time, Mahmoud Dabboussi, noted that Mahmoud appeared to be displaying cold and flu like symptoms and that he had an "*ingrown pimple in his nose*". Mr Dabboussi also noted that Mahmoud complained that his neck was hurting and that he did not have a pillow.

5.12 During the afternoon and evening Mahmoud made three more knock up calls:

(a) At 2:19pm Mahmoud made a request for cough medicine although it appears that none was actually provided to him.

(b) At 7:26pm Mahmoud requested a pillow after saying that his neck was twisted. Mahmoud also complained of a bad headache, back pain, being unable to walk, and feeling very low. The correctional officer who answered the call asked Mahmoud whether he wanted a nurse or a pillow. Mahmoud did not clearly indicate one way or the other, and the correctional officer indicated that arrangements would be made for roving officer to check up on him. However, it is not known whether this occurred.

(c) At 8:31pm Mahmoud repeated his request for a pillow, repeated that his neck was twisted, said that he was very agitated, and that he had been vomiting phlegm for the previous three hours. The correctional officer who answered the call advised Mahmoud that he did not have access to any pillows.

15 June 2016

5.13 At 5:12am on 15 June 2016 Mahmoud again knocked up, complaining that he was getting an infection in his eye. Mahmoud was advised that correctional officers would attend his cell. However this did not occur for around 30 minutes, during which time Mahmoud made three further knock up calls. During one of these calls, Mahmoud complained of difficulty breathing. Once correctional officers attended Mahmoud cell, he was taken to the main clinic. On this occasion Mahmoud made his way there without assistance.

5.14 Mahmoud arrived at the clinic at about 5:54am. At some point after arriving EN Steel assessed Mahmoud and found that he had swelling and redness to the right tip of his nose that extended to his right eye. EN Steel also noted that it appeared that Mahmoud may have been squeezing the small blind pimple at the end of his nose (which had been noted the previous day), although Mahmoud denied doing so.

5.15 EN Steel formed the view that Mahmoud should be seen by a doctor, and arrangements were made for this to occur. Whilst Mahmoud was waiting, he remained for part of the time in an observation cell, and for part of the time in the clinic cage at the entrance. CCTV footage during this period shows Mahmoud appearing to be very agitated, repeatedly wiping his nose and eye area with toilet paper, repeatedly rubbing some sort of cream or ointment into his neck, and repeatedly getting up from the bed in the observation cell and the bench in the clinic cage.

5.16 Dr Chetan Valabjee, a locum medical officer, saw Mahmoud shortly after 9:00am. By this time Mahmoud had been at the clinic for just over three hours. According to Dr Valabjee's clinical notes, Mahmoud presented with "*right nasal localised cellulitis*" which had started with a carbuncle at the right nasal tip. Dr Valabjee assessed Mahmoud and found that he had no fever or headache, was clearly oriented to time place and person, and that vital sign observations taken were normal. On this basis, Dr Valabjee noted that Mahmoud was systemically well. Dr Valabjee prescribed Telfast (an antihistamine), Panadeine, Voltaren (a non-steroidal anti-inflammatory) and loratadine (an antihistamine) for symptomatic relief, an intramuscular injection of penicillin, and oral flucloxacillin to be administered four times a day. Orders were also made for a nasal cavity swab to determine the nature of the bacteria causing the cellulitis, and for Mahmoud to be kept in an observation cell for the remainder of the day and overnight.

5.17 Mahmoud remained in an observation cell for the remainder of 15 June 2016. CCTV footage (which is only available until 4:20pm on 15 June 2016) shows Mahmoud to be in a similarly agitated state when he first presented to the clinic whilst waiting to be seen by Dr Valabjee. The footage depicts Mahmoud frequently wiping his eye and nose area, frequently rubbing his neck, frequently knocking or banging on the door of the observation cell, and frequently pacing around the observation cell between periods of rather fitful rest on the cell bed.

16 June 2016

5.18 Between about 4:30am and 5:00am on 16 June 2016 Mahmoud knocked up from the observation cell. He was subsequently seen by Registered Nurse (**RN**) Rosslyn Hayter. She noted that Mahmoud was complaining of difficulty breathing, a painful neck because he had been without a pillow, and back pain from a previous accident. RN Hayter performed a visual assessment and noted that Mahmoud was not displaying signs of shortness of breath or obvious respiratory distress. RN Hayter gave Mahmoud Panadeine and Voltaren for symptomatic relief, and cleared him to return to the observation cell. Although Mahmoud complained of being unable to walk back to the cell, he was subsequently able to do so.

5.19 It appears that shortly before 8:00am a decision was made to transfer Mahmoud to Blacktown Hospital. Following his arrival Mahmoud was assessed in the emergency department at around

10:45am. On examination, Mahmoud reported that his upper respiratory tract infection symptoms first appeared on 11 June 2016, and that his lower respiratory tract infection symptoms and pimple on his nose first appeared on 14 June 2016 Mahmoud also reported losing consciousness at some point on 16 June 2016. Arrangements were made for Mahmoud to be administered intravenous flucloxacillin, with investigations to be performed and input sought from the hospital's infectious diseases team.

5.20 A blood test was taken at 11:43am which revealed that Mahmoud's C-reactive protein[3] was markedly elevated, indicating infection or inflammation. A chest x-ray performed shortly after 12:00pm revealed a left hemithoracic pneumothorax[4] and fluid in the lung. Following this, infectious diseases clinicians later assessed Mahmoud and changed the antibiotic prescribed from flucloxacillin to vancomycin to address the possibility of Methicillin-resistant Staphylococcus aureus (**MRSA**). A CT scan of Mahmoud's head was ordered which revealed features suggestive of cavernous sinus thrombosis.[5] Blood culture tests and a wound swab were ordered, which later revealed the growth of MRSA.

17 June 2016

5.21 Mahmoud's condition deteriorated during the remainder of 16 June 2016. Following examination on the morning of 17 June 2016 by neurological clinicians an urgent repeat CT scan was ordered. After it was performed at about 10:39am it revealed right paranasal sinusitis, features suggestive of partial right cavernous sinus thrombosis, a prevertebral collection in the neck, multiple bilateral pulmonary and subpleural nodules and a left pneumothorax.

5.22 Arrangements were made to transfer Mahmoud to Westmead Hospital where he arrived in the emergency department at shortly before 12:00pm. On examination, Mahmoud reported that he had picked a pimple on the right side of his nose two days ago "*which resulted in spreading infection to write periorbital region*". Mahmoud also reported having "*snorted some cocaine*" two weeks earlier. Mahmoud repeated these reports when he was examined by infectious diseases clinicians later that afternoon.

5.23 On assessment, Mahmoud was found to have swelling and inflammation over his right eye, cheek and nose. It was also noted that swelling of the tongue and deterioration of voice quality suggested imminent airway obstruction. Mahmoud was considered to be suffering from MRSA bacteraemia. Controlled elective intubation took place and Mahmoud was subsequently admitted to the intensive care unit for infusion of intravenous antibiotics, including vancomycin. And intercostal catheter was inserted in response to the left pneumothorax. Mahmoud was noted to be febrile and tachycardic but otherwise in a stable condition over the course of the night.

18 June 2016

5.24 On review on the morning of 18 June 2016 Mahmoud was noted to be haemodynamically stable, but with a deterioration in his oxygenation overnight and patches of consolidation forming in all

[3] A protein in the blood whose concentrations rise in response to inflammation.
[4] When air leaks into the space between the lung and the chest wall, known as a "collapsed lung".
[5] The formation of a life threatening blood clot within the cavernous sinus (hollow spaces located under the brain, behind each eye socket) which can develop when an infection in the face or skull spreads to the cavernous sinuses.

four lung quadrants. Although positive airway pressure provided some improvement in respiratory function, there was a subsequent rapid deterioration in Mahmoud's cardiovascular function. Further investigations revealed an extension of the cavernous sinus thrombosis, involving the ophthalmic vein.

19 June 2016

5.25 On review on the morning of 19 June 2016, it was noted that Mahmoud had developed another right-sided pneumothorax which required another intercostal catheter to be inserted. Given Johns worsening condition extracorporeal membrane oxygenation[6] was initiated. However, Mahmoud's condition continued to deteriorate rapidly, and he became haemodynamically unstable and required ongoing fluid resuscitation. Mahmoud also suffered episodes of rapid atrial fibrillation and developed multi-organ system failure, including renal failure and worsening lactic acidosis.

5.26 Despite maximal life support therapy being provided, Mahmoud failed to respond to these intensive measures and so, following consultation between his family and treating clinicians, a decision was made to not initiate cardiopulmonary resuscitation. Following this poor prognosis, Mahmoud's family returned to his bedside and he progressed to asystole a short time later. Mahmoud was subsequently sadly pronounced deceased at 7:04pm on 19 June 2016.

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

6.1 Mahmoud was subsequently taken to the Department of Forensic Medicine where a postmortem examination was performed by Dr Kendall Bailey, forensic pathologist, on 21 June 2016. The autopsy identified "*marked reddening and swelling of the right side of the face and multiple lesions on the right side of the nose*".[7] Diffuse pneumonia with multiple abscess formation was identified in both lungs. Microscopic examination confirmed florid widespread pneumonia with fibrin deposition and diffuse alveolar damage. Subsequent neuropathological examination of the brain revealed inflammation of the meninges, the underlying cerebral cortex and within the ventricles. Signs of hypoxic ischaemic injury were also noted. In her subsequent autopsy report dated 9 February 2017, Dr Bailey opined that the cause of Mahmoud's death was MRSA sepsis.

7. What issues did the inquest examine?

7.1 Prior to the commencement of the inquest a list of issues was circulated amongst the sufficiently interested parties, identifying the scope of the inquest and the matters to be considered. That list identified the following issues:

(a) The circumstances and clinical features of Mahmoud's presentation to the clinic at Parklea between 11 and 16 June 2016;

(b) Whether the care and treatment provided by nursing and medical staff at Parklea to Mahmoud between 11 and 16 June 2016 was timely and appropriate, including, but not limited, to:

[6] An advanced life support measure that replaces the function of the heart and lungs in instances of severe and life-threatening illnesses.
[7] Exhibit 1, Tab 3, page 10.

(i) the adequacy of assessments and investigations undertaken; and

(ii) the adequacy of steps taken with respect to diagnosis, management, monitoring and treatment of Mahmoud's facial skin and soft tissue infection;

(c) the circumstances surrounding Mahmoud's transfer from Parklea Correctional Centre to Blacktown Hospital, including steps taken by correctional staff to notify Mahmoud's family of his hospital admission;

(d) The existence and adequacy of policies, procedures and protocols in place at Parklea in June 2016 for the recognition and management of community-acquired methicillin-resistant Staphylococcus aureus (**CA-MRSA**) infections in custodial populations; and

7.2 In order to assist with consideration of some of these issues, opinion was sought from the following experts as part of the coronial investigation:

(a) Associate Professor David Andresen, a consultant infectious diseases physician and microbiologist; and

(b) Associate Professor Bernard Hudson, a consultant infectious diseases physician and microbiologist.

7.3 Both experts provided reports which were included in the brief of evidence. Further, both experts also gave evidence concurrently during the inquest.

7.4 One aspect of the expert evidence should be noted at this point. At the commencement of the inquest, and prior to the tender of the brief of evidence, Counsel for Justice Health raised an objection in relation to the tender of the expert reports of Associate Professor Hudson and Associate Professor Andresen. The objection was made on the basis that the opinions expressed in the reports were from two senior infectious diseases physicians in relation to the standard of care exercised by primary healthcare practitioners, namely Justice Health nursing staff and a locum medical officer. Both expert reports were subsequently admitted into evidence with an indication that appropriate consideration would be given to the different and higher level of expertise of the two experts, relative to that of the primary healthcare clinicians involved in Mahmoud's care and management. That degree of consideration has remained unchanged.

7.5 The objection taken in relation to the expert reports has similarly been a recurrent theme in the written submissions made on behalf of Justice Health. That is, Counsel for Justice Health has repeatedly submitted that the Court has not received any expert peer opinion in relation to the management of Mahmoud's care by Justice Health clinicians. On this basis, it is submitted, the Court ought to be reluctant to criticise the conduct of any Justice Health staff in the absence of any such peer opinion.

7.6 When consideration is given to these submissions the following is noted:

(a) Although objection was taken to the tender of the expert reports from Associate Professor Andresen and Associate Professor Hudson, no similar objection was taken to any aspect their oral evidence.

(b) The submissions made by Counsel for Justice Health in relation to the limitations which must be placed on the expert evidence are, understood correctly, directed only towards the opinions expressed by Associate Professor Hudson, in both his report and in oral evidence. The submissions do not appear to regard that similar limitations should apply to any opinion expressed by Associate Professor Andresen, particularly in circumstances where that opinion is not critical of any aspect of management provided by Justice Health clinical staff.

(c) It is accepted that both in his report and in oral evidence Associate Professor Andresen at times expressed reluctance in offering an opinion in relation to the reasonableness of care provided by primary healthcare practitioners, given his higher level of expertise and training.

(d) The relevance of any opinion expressed by an expert in relation to the professional conduct of another person is not limited by whether that expert is a peer of that person. Rather, the issue is whether the expert has the relevant training, study or experience in order to be able to express any such opinion. In the present matter, no issue was taken in relation to the training, study or experience of either Associate Professor Andresen or Associate Professor Hudson, except to the extent that it was submitted, Associate Professor Hudson maintained in his evidence that he was a peer of a primary healthcare clinician. However, the correct position is that Associate Professor Hudson did not maintain that he was such a peer. Rather, Associate Professor Hudson indicated that by virtue of his training, study, and experience (which relevantly included experience as both a general practitioner and experience of a correctional environment in a professional context) he had the relevant expertise to express the opinions that he did.

(e) In giving their oral evidence both experts were specifically requested to take into account, in assessing the adequacy and appropriateness of Mahmoud's management, that the relevant clinicians were primary health care practitioners (namely an enrolled nurse, a registered nurse and a general practitioner).

(f) Finally, it was made clear by both experts, and it is accepted, that the standard of care applicable to any assessment of the adequacy and appropriateness of Mahmoud's management is that of a primary healthcare clinician, and not that of a specialist infectious diseases physician.

7.7 Having regard to each of the above matters, appropriate consideration can be given (and has been given) to the expert opinions expressed by both Associate Professor Andresen and Associate Professor Hudson.

8. Methicillin-resistant Staphylococcus aureus

8.1 Staphylococcus aureus is a "highly successful opportunistic pathogen".[8] It is a frequent coloniser of the skin and mucosa of humans and animals and can produce a wide variety of diseases. These diseases can include relatively benign skin infections, as well as life threatening conditions including pneumonia, sepsis, endocarditis, and deep-seated abscesses.

8.2 In humans Staphylococcus aureus has a preference for the anterior nares (nostrils), especially in adults and is shed onto healthy skin. Nasal carriage of Staphylococcus aureus has become a way of persistence and the spread of multi-resistance staphylococci especially MRSA. Staphylococcus aureus is responsible for an array of infections, including skin and soft tissue infections, lower respiratory tract infections, bloodstream infections and other infections, including those of the urinary tract, brain and abdominal cavity.

8.3 Some strains of Staphylococcus aureus have developed resistance to antibiotics and are known as MRSA. MRSA are resistant to methicillin (an antibiotic of the penicillin class) and other closely related antibiotics such as, relevantly, flucloxacillin. MRSA is present in both healthcare environments and within the community, with the latter known as community-acquired methicillin-resistant Staphylococcus aureus (**CA-MRSA**).

8.4 In terms of treatment, "*established, overwhelming infection with CA-MRSA is difficult to reverse, even in young, healthy persons. The earlier that appropriate antibiotic therapy is applied in CA-MRSA infection, the more likely cure can be obtained with such treatment. Early recognition is facilitated by recognising early those patients who possess risk factors for CA-MRSA carriage and skin and soft tissue infections*".[9] It is also noted that "*the systemic features of CA-MRSA infection, once present, can be difficult to recognise, especially in a feeble patients. Early use of blood tests and blood cultures facilitate early diagnosis and can be lifesaving*".[10]

8.5 In both the written expert reports and in oral evidence there was some debate about whether there is evidence to support a conclusion that individuals in a correctional setting are at greater risk of CA-MRSA than those within the general community. Associate Professor Hudson expressed the view that "*in the last two decades, it has been recognised that residents of correctional facilities are at greater risk of CA-MRSA colonisation and infection than the general population*".[11] Further, Associate Professor Hudson explained that experiences in the United States have led to the development of guidelines for the prevention and management of CA-MRSA in correctional facilities. Associate Professor Hudson expressed the opinion that similar extensive guidelines must be developed for Australian correctional facilities with a national, rather than a state, body being the preferable vehicle through which this might occur.

8.6 Associate Professor Andresen considered that "*socio-economic risk factors for MRSA such as ethnicity and social disadvantage almost certainly explain a substantial proportion of the elevated rates in North American custodial settings*".[12] On this basis, Associate Professor Andresen

[8] Exhibit 1, page 899.
[9] Exhibit 1, page 876.
[10] Exhibit 1, page 878.
[11] Exhibit 1, page 878.
[12] Exhibit 1, page 932.

expressed the view that "*incarceration has never been demonstrated to predict MRSA in adult Australian populations*", in contrast to North America.[13] Whilst of the view that caution should be exercised in extrapolating North American data, Associate Professor Andresen noted that as indigenous Australians are overrepresented in custodial populations and are also at an increased for MRSA (with one of the two most common community clones being very common in indigenous Australian populations) "*higher rates of MRSA in custodial populations would be at expected simply on the basis of the racial profile of Australian correctional inmates*".[14] Notwithstanding, Associate Professor Andresen expressed strong support for well conducted, local epidemiological studies to inform the development of relevant guidelines in the future.

9. Was Mahmoud appropriately cared for and treated at Parklea between 11 and 16 June 2016?

9.1 It is convenient to consider the first and second issues together, given that the clinical features of Mahmoud's presentation are directly relevant to the care and treatment that was provided to him. Further it is also convenient to consider the period between 11 and 16 June 2016 in two distinct stages.

11 to 13 June 2016

9.2 In his report Associate Professor Hudson noted that Mahmoud presented initially with coryzal symptoms on 11 June 2016, then with cold and flu like symptoms on 12 and 13 June 2016. On each occasion Mahmoud was provided with symptomatic relief for an apparent respiratory tract infection. In evidence, Associate Professor Hudson considered that Mahmoud's presentation on 11 and 12 June 2016 was consistent with an upper respiratory tract infection, and that it was reasonable to manage his presentation without further investigation. On this basis, Associate Professor Hudson considered the management of Mahmoud's condition to be appropriate.

9.3 However, by 13 June 2016 Associate Professor Hudson considered that whilst MRSA was not indicated, Mahmoud should have been referred to a medical practitioner and pre-emptive investigation in the form of blood tests should have been performed. This is because Associate Professor Hudson noted that it was the third occasion in which Mahmoud had presented, with increasing symptomatology. In this regard Associate Professor Hudson expressed the view that a person presenting for the third time in an outpatient setting with increasing symptomatology, such as that displayed by Mahmoud, would invite consideration of the possibility that something more clinically serious was present than merely an upper respiratory tract infection. This consideration, in turn, should have resulted in referral to a medical practitioner and blood tests being performed. Therefore, Associate Professor Hudson considered that Mahmoud's management on 13 June 2016 was inadequate.

9.4 In evidence Associate Professor Andresen indicated that he felt uncomfortable applying the standard of care relevant to his practice to a different setting, namely the correctional environment in which Mahmoud was managed. However Associate Professor Andresen noted that by 13 June 2016 there was still nothing of concern regarding Mahmoud's presentation to warrant

[13] Exhibit 1, page 932.
[14] Exhibit 1, page 932. Associate Professor Andresen went on to note that it is unknown whether Aboriginal Australians who are incarcerated, and incarcerated individuals of other ethnicities, are at higher MRSA risk than individuals of the same ethnicity within the community.

consideration of MRSA. Further, Associate Professor Andresen expressed the view that even if blood tests had been ordered, their results may not have led to any change in Mahmoud's management. This is because whilst the blood tests may have revealed raised inflammatory markers, Mahmoud otherwise looked well. In this regard, Associate Professor Andresen explained that it was unclear to him how blood tests performed on 13 June 2016 "*would be helpful*".

9.5 Counsel for Justice Health submitted that a distinction ought to be drawn between three presentations by a patient to a clinic in a community setting as opposed to a correctional setting. This is because in a community setting a patient is not required to present in order to receive routine medications. In evidence Associate Professor Andresen acknowledged this difference, and that a third presentation in a correctional setting may not necessarily be a "*red flag*" as it might be in a community setting. This prompted Associate Professor Andresen to express his discomfort in "*sitting in judgement*" of the care provided to Mahmoud.

9.6 Associate Professor Hudson similarly acknowledged the differences between a correctional and community setting. However, whilst Associate Professor Hudson appeared to acknowledge that the reason for Mahmoud's third presentation was to receive medication, he also explained that it was an opportunity to see whether or not Mahmoud's clinical condition had improved, worsened, or remained the same. To this extent, Associate Professor Hudson considered that Mahmoud's presentation had two components: prescription of medication and an opportunity for review.

9.7 **Conclusions:** Notwithstanding the underlying reason for Mahmoud's presentation on 13 June 2016, the evidence from Associate Professor Hudson establishes that it represented an opportunity to review Mahmoud's condition. In Associate Professor Hudson's opinion seizing this opportunity should have led to Mahmoud being referred to a medical practitioner for further assessment and blood tests being performed.

9.8 Whilst this opportunity can be regarded as one that was missed, it could not be said that it represented inadequacy regarding Mahmoud's management. This is for two reasons. Firstly, the expert evidence was divided as to the clinical utility of any blood test results that might have been performed. Secondly, Associate Professor Hudson's consideration of Mahmoud's increasing symptomatology giving rise to the need to consider a more serious clinical condition was qualified on the basis of a patient presenting in an outpatient setting.

14 June 2016

9.9 EN Steel said in evidence that in reviewing Mahmoud on 14 June 2016 she performed a "*head to toe assessment*" during which she noted that Mahmoud complained of chest pain and phlegm, but made no complaints of shortness of breath or difficulty breathing, difficulty walking (even though he arrived in the treatment room in a wheelchair, which EN Steel explained was not an uncommon occurrence for inmate patients attending the clinic), neck or back pain, loss of consciousness, or difficulty sleeping. EN Steel said that she formed the impression that Mahmoud had flu like symptoms. She arranged for an ECG to be performed in relation to the complaint of chest pain in order to rule out any cardiac issues.

9.10 EN Steel also said that Mahmoud volunteered information that he had been smoking NRT patches and in response she informed him that this was dangerous and poisonous. In particular, EN Steel said that she had particular regard to Mahmoud's heart rate and did not consider it to be elevated, and that his blood pressure and temperature (taking into account that it might have been affected by Panadeine) were also within acceptable clinical ranges.

9.11 EN Steel said that she had received training in relation to MRSA whilst previously having worked in a hospital setting. She had no specific recollection of similar training being provided by Justice Health, but expressed some confidence that it would have formed part of an in-service program. EN Steel said that she did not give specific consideration to MRSA, and that she did not regard Mahmoud's presentation as warranting such consideration. This was despite her awareness that MRSA can manifest as skin infections in the form of pimples.

9.12 EN Steel explained that there was no medical officer available on 14 June 2016, but agreed that if she considered that further assessment of Mahmoud was required she could have raised the issue with either the on-call GP, or a registered nurse. However, EN Steel said that she did not consider that Mahmoud's presentation warranted further assessment, even by a registered nurse.

9.13 Associate Professor Hudson noted that the "*clinical features of productive cough, difficulty breathing and generally feeling unwell indicate that, more likely than not, CA-MRSA pneumonia was already present on the morning of 14 June 2016*".[15] In evidence, Associate Professor Hudson expressed the view that by the time of Mahmoud's fourth presentation he should have been referred to a medical practitioner and that it was inappropriate for a nurse to be the only healthcare professional to be seeing him. This was particularly so given that Mahmoud had presented with a new symptom, namely chest pain, and a persistent cough.

9.14 Further, Associate Professor Hudson considered that further investigation was warranted and that if the pimple had developed into a pustular lesion, then it would have been appropriate to perform a swab and further investigation. Associate Professor Andresen agreed that it would have been appropriate to perform a swab if a pustular lesion had been present, although this was unclear given the lack of a comprehensive description. Associate Professor Hudson also considered that given Mahmoud's presentation occurred in a correctional setting it would have been appropriate by 14 June 2016 to consider the possibility of MRSA.

9.15 Both Associate Professor Hudson and Associate Professor Andresen agreed that Mahmoud's respiratory rate was borderline elevated, that his vital signs would be difficult to interpret in someone who was agitated, and that his heart rate (which was regarded as being below the upper limit of normal) did not necessarily imply physiological arrangement (particularly in the case of a patient displaying agitation). Having regard to these vital sign measurements both Associate Professor Hudson and Associate Professor Andresen agreed that it would have been appropriate to have repeated the observations following a period of rest.

9.16 Both Associate Professor Hudson and Associate Professor Andresen agreed that Mahmoud's vital signs indicated that he was "*between the flags*" in the context of being asked to define whether a

[15] Exhibit 2, page 891.

patient was systemically well or unwell. Associate Professor Hudson indicated that a patient being "*between the flags*" was one objective clinical marker but that it was also important to identify other clinical markers such as a patient's overall presentation and symptomatology. Associate Professor Andresen similarly agreed that an "*astute clinician*" may have made something more of these other clinical markers, notwithstanding that a patient might be "*between the flags*".

9.17 More specifically, Associate Professor Hudson considered that a patient presenting with flu like symptoms indicates that they are systemically unwell. Associate Professor Andresen explained that the definition of a patient being systemically unwell was a subjective one. He said that it was important for a clinician to examine how a patient appeared when sitting in front of them, and in this regard described such an examination as almost a clinician's "*gut feeling*". Ultimately, Associate Professor Andresen deferred addressing whether he considered Mahmoud's presentation on 14 June 2016 could be described as being systemically unwell as he had not personally had the opportunity to examine him.

9.18 Both experts agreed that chest auscultation on 14 June 2016 was warranted, with Associate Professor Andresen indicating that a "*careful listen*" could assist in determining whether or not a chest x-ray was indicated. In evidence RN Steel said that she could not recall whether she used a stethoscope to auscultate Mahmoud's chest, even though it was her usual practice to do so when performing a full assessment of a patient. EN Steel also acknowledged that no chest auscultation was documented even though she "*most likely*" would have done so if this had occurred. In response to questions by counsel for Justice Health, EN Steel indicated that it was her usual practice to record any significant findings in the clinical progress notes, and that even if the chest auscultation was normal this would still be documented.

9.19 **Conclusions:** On the basis of Mahmoud's vital signs there was no clinical evidence which indicated that his management should have been escalated or that further investigative tests should have been performed. Whilst the expert evidence established that Mahmoud's respiratory rate was borderline elevated, the evidence also established that Mahmoud's vital signs would have been difficult to interpret due to his level of agitation.

9.20 Further, the expert evidence also established that a clinician's assessment of the patient in front of them was an important factor in considering the need for escalation and/or further investigation. In this regard, it is difficult to be critical of the management provided by EN Steel in the absence of a clinical finding which clearly demonstrated that escalation and/or further investigation on 14 June 2016 was warranted.

9.21 In evidence Associate Professor Hudson expressed the view that a nursing assessment of the kind performed by EN Steel on 14 June 2016 is protocol-driven, and that he would expect there to have been a protocol in place to indicate that a fourth presentation by a patient "*should ring alarm bells*". However, Counsel for Justice Health correctly notes that there is no evidence of any procedure, policy, or standard that would have supported Mahmoud's referral to a medical practitioner based upon his presentation on 14 June 2016. Having regard to these factors, it could not be said that the care provided by EN Steel on 14 June 2016 was either inadequate or inappropriate.

9.22 Although EN Steel said that it was her usual practice to perform a chest auscultation as part of her assessment of a patient, the absence of any documentation in this regard (which was also part of EN Steel's usual practice) indicates that it is most likely that a chest auscultation was not performed. Given that the expert evidence established that this was warranted, it can be concluded that the absence of a chest auscultation represented a gap in Mahmoud's clinical care. However, it is not possible to reach any conclusion about whether a chest auscultation might have altered the course of clinical treatment.

9.23 One final matter requires comment. As noted above both Associate Professor Andresen and Associate Professor Hudson considered that repeat observations following a period of rest may have provided greater clarity in relation to Mahmoud's vital signs, in particular his respiratory rate and heart rate. EN Steel said that she placed Mahmoud under observation in order to ensure that his condition was not worsening and ensure that her treatment was sufficient. Although she could not recall how frequently she checked up on Mahmoud, EN Steel said that he raised no new complaints and that she did not observe any new symptoms.

9.24 However, there is no evidence that EN Steel repeated observations of Mahmoud's vital signs after he had been placed under observation. This represented a missed opportunity to obtain a greater degree of clinical clarity. However it is again not possible to make any determination about whether repeat observations might have revealed any findings of possible clinical significance, or whether such findings indicate the need for escalation and/or further investigation.

9.25 The inquest received relatively little evidence regarding the nature and extent of any training provided by Justice Health to clinical staff in relation to the detection, management and prevention of CA-MRSA. However, the sudden and unexpected nature of Mahmoud's death, and the rapid progression of his disease, provides an opportunity to ensure that appropriate training programs are in place for Justice Health clinicians who may be confronted with similar presentations in similar circumstances.

9.26 In this regard it has already been noted that there was some debate in the evidence of Associate Professor Hudson and Associate Professor Andresen as to whether CA-MRSA is more prevalent in correctional centres compared to other settings within the community. Associate Professor Andresen expressed the view that the question is an open one and whilst there is biological plausibility and some data from overseas correctional centres, it would be a mistake to extrapolate that data in the absence of sufficient understanding of the differences between correctional centres in different jurisdictions. However, notwithstanding, Associate Professor Andresen expressed the view that the risk of CA-MRSA in Australia in correctional centres is likely to reflect underlying socio-economic factors (such as poverty, ethnicity, household crowding) of inmate populations. Associate Professor Andresen considered that whether these factors are compounded by a correctional setting is a matter for further research.

9.27 However, even Associate Professor Andresen acknowledged that given the presence of these factors in study populations higher rates of MRSA are to be expected.[16] Indeed, this is specifically recognised by the NSW Health Factsheet, *Staphylococcus aureus in the community – Information for clincians* (**the NSW Health Factsheet**). It relevantly provides that "*crowding and frequent skin to skin contact can increase the risk of infection so outbreaks tend to occur in schools, dormitories, military barracks, correctional facilities, and childcare centres*".[17] Having regard to these matters, the following recommendations are desirable.

9.28 **Recommendation 1:** I recommend that Justice Health review its training programs and material for clinical staff to ensure that adequate and appropriate measures are in place for the detection, management, and prevention of community-acquired methicillin-resistant Staphylococcus aureus (CA-MRSA), including by considering whether: (a) existing training programs and material recognise that CA-MRSA is likely to be more prevalent in correctional centres than in other settings within the community; and (b) the circumstances of Mahmoud Allam's death (with appropriate anonymization, and conditional upon consent being provided by Mahmoud's family and following appropriate consultation with them) should be used as a case study as part of any training programs delivered to clinical staff.

9.29 **Recommendation 2:** I recommend that Justice Health give consideration to whether it is necessary or desirable to develop a specific policy or guidelines concerning the prevention, detection and management of community-acquired methicillin-resistant Staphylococcus aureus.

9.30 In relation to Recommendation 2 it was submitted on behalf of Justice Health that whilst Justice Health is involved in the early identification and treatment of MRSA, the prevention of it is not within the purview of Justice Health. This is because, it is submitted, prevention of MRSA is centred around issues of personal hygiene, sanitation of clothing including of services, all of which are operational matters controlled by a correctional centre's operator. However, it is difficult to accept that a primary health care provider has no part to play in relation to the prevention of disease which might affect those persons who may ultimately be provided with care. Indeed, it is significant to note that RN Hayter considered that (whilst having its own inherent challenges) education regarding personal hygiene is provided to inmates on their admission to a correctional centre and throughout the course of their period in custody.

9.31 In evidence Associate Professor Hudson considered that the collection of data and analysis in a prospective and retrospective manner is indicated. Associate Professor Hudson agreed with this view, and further emphasised that education could be embarked upon whilst the process of information gathering is undertaken. Both experts agreed were supportive of appropriate training measures being put in place and awareness being raised, even in the absence of local data being available. Therefore it is desirable to make the following recommendation. In doing so, it is acknowledged that no evidence has been received regarding the feasibility of, and the limitations associated with, conducting the type of data collection and analysis contemplated.

[16] Exhibit 1, page 932.
[17] Exhibit 2, page 1/5.

9.32 **Recommendation 3:** I recommend that Justice Health give consideration to whether it is possible (having regard to relevant limitations) to conduct or commission research by (a) analysing historical patient data (already held by Justice Health); and (b) collecting future patient data (including appropriate social, economic and demographic data), in order to assist in determining the prevalence of community-acquired methicillin-resistant Staphylococcus aureus in correctional centres in New South Wales.

15 June 2016

9.33 EN Steel said that when she first approached Mahmoud on 15 June 2016 she could see that his swelling had "*obviously changed*" from the previous day. EN Steel described the swelling at the tip of his nose to be more prominent, and said that she saw Mahmoud rubbing his face. EN Steel also observed redness under Mahmoud's eye, but said she was unsure whether this was due to infection or Mahmoud rubbing his face. EN Steel said that she could not recall seeing a pustular lesion but would have made a note of it if she had, and that at the time Mahmoud made no complaints of coughing, loss of consciousness, or vomiting. EN Steel also said that she formed the view that Mahmoud needed to be seen by a doctor, and told him that a GP would be available shortly and that he would have to be patient.

9.34 Dr Valabjee had not seen Mahmoud prior to 15 June 2016. Before his assessment he had been told by nursing staff that Mahmoud had a localised face infection which required review by a medical practitioner. Dr Valabjee said that it would have been his usual practice to review the clinical progress notes for a patient prior to an assessment, but had no specific recollection of whether he did so in Mahmoud's case. Overall, Dr Valabjee's assessment of Mahmoud took about 20 minutes (from 9:05am to 9:25am). At its conclusion, Dr Valabjee documented that Mahmoud was systemically well. In evidence, Dr Valabjee said that he would not have written this lightly.

9.35 Dr Valabjee also indicated that the documentation of Mahmoud being systemically well was a summation, and that he would have asked Mahmoud a number of questions such as whether he had been experiencing any breathing issues, nausea, headache, or bowel and bladder symptoms. Dr Valabjee said he did not have a specific recollection of asking Mahmoud these questions but said that he was "*reasonably confident*" that he had asked them as they are the type of questions that he had religiously asked 99 percent of patients whilst previously working in a rural health care setting. Dr Valabjee agreed that it was important to determine whether Mahmoud was systemically well or not, because a different course of treatment would be called for if he was not systemically well.

9.36 As at June 2016 Justice Health did not have any policy which specifically addressed CA-MRSA or skin and soft tissue infections in custodial populations. Instead, Justice Health adopted the *Therapeutic Guidelines: Antibiotic* (**the Antibiotic Guidelines**) published periodically by the Therapeutic Guidelines Limited. The Antibiotic Guidelines relevantly provide that:

(a) oral antibiotic therapy "*is adequate for cellulitis and erysipelas*[18] *not associated with systemic features of infection*";

(b) initial intravenous therapy is usually required when two or more systemic features of infection are present, such as raised temperature, increased heart rate or respiratory rate, and increased white cell count;

(c) antibiotic choice for cellulitis and erysipelas without systemic features is dependent on whether the infection is likely to be caused by Streptococcus pyogenes[19] or Staphylococcus aureus (including CA-MRSA);

(d) for patients with cellulitis and erysipelas without systemic features, and where Staphylococcus aureus is suspected based on clinical presentation, flucloxacillin (orally, six hourly for five days) is to be used; and

(e) for patients with cellulitis or erysipelas associated with two or more systemic symptoms (but not associated with hypotension, septic shock or rapid progression of systemic features), and where Staphylococcus aureus is suspected based on clinical presentation, who are at increased risk of CA-MRSA, vancomycin intravenously is to be used.

9.37 Dr Valabjee was asked whether the clinical progress notes regarding Mahmoud's presentations on 11, 12, and 13 June 2016 would have been relevant to his determination of whether Mahmoud was systemically well. Dr Valabjee explained that he would have had an independent discussion with Mahmoud and taken a history from him. Dr Valabjee said that if Mahmoud did not disclose anything specific in the course of this historical review then he could only base his assessment on his discussion with Mahmoud. Overall, Dr Valabjee said in evidence that he stood by his assessment.

9.38 Dr Valabjee said that the area of redness that he observed was confined to the nasal cleft area and did not extend to Mahmoud's eye, otherwise he would have drawn it in the diagram that he made in the clinical progress notes. Dr Valabjee also said that at the time of his examination the cellulitis did not appear pustular in nature, and was simply red and localised.

9.39 Dr Valabjee said that he prescribed penicillin to treat streptococcus, and that he prescribed flucloxacillin to treat a suspected staphylococcus infection. He agreed that he ordered a swab of the nose to be taken to be sure that appropriate antibiotic cover was being directed to the organisms on Mahmoud's face, and to check the sensitivity of the medication in dealing with the pathogen.

9.40 Dr Valabjee said that he did not appreciate any significant medical limping when CCTV footage was played to him. He also said that he did not observe any puffiness to Mahmoud's face or any neck stiffness as he turned his head. Dr Valabjee was asked why blood tests were not ordered. He explained that the infection was localised to Mahmoud's face, and that a blood test may or may

[18] Another type of skin infection which affects the upper layer of the skin, compared to cellulitis which is an infection in the lower layers of the skin.
[19] A gram-positive bacteria that causes several diseases including scarlet fever, acute rheumatic fever and necrotising fasciitis.

not have added much in terms of Mahmoud's immediate management. Therefore, Dr Valabjee considered that treatment for the infection and a swab was the first line of management. As Mahmoud did not have a temperature, his observations were within limits, and he was systemically well, Dr Valabjee did not consider that opting for pathology was appropriate as a first line of management.

9.41 Dr Valabjee was asked whether he considered the possibility of MRSA at the time that he assessed Mahmoud. Dr Valabjee said that the reason he ordered the swab was to determine what organism he was dealing with. He said that he was weighing up differential diagnoses in his mind at the time and that he tried to remain open as to what investigation to conduct. Dr Valabjee was also asked whether he considered that MRSA might be more prevalent in a correctional setting. He said that literature from the United States had demonstrated that it might be more prevalent, but that he had not seen or had any experience of this being replicated in Australia. He said that based on his previous experience with Justice Health and as a locum medical officer, MRSA did not appear to be a rampant problem in settings where he had worked.

9.42 However, Dr Valabjee sought to emphasise that this did not mean that he did not try to ensure that it was not present in his examination of Mahmoud. Dr Valabjee said that he had no specific recollection of reading a NSW Health Fact Sheet dated 30 June 2012 which stated that crowding can increase the risk of an outbreak occurring in a correctional facility, but said that he would have attempted to keep up-to-date with all relevant information. Dr Valabjee was also asked if he considered whether Mahmoud should have been transferred to hospital. Dr Valabjee said that based on his review he considered that Mahmoud was stable enough to be managed in a medical observation cell with a planned review the following morning. Dr Valabjee said that he did not see Mahmoud again following his review, and did not check on his condition before he left the clinic at 4:00pm later that day. Dr Valabjee also said that he did not ask nursing staff for an update on Mahmoud's condition, but explained that the nursing staff would have flagged any concern with him.

9.43 Dr Valabjee said that he had an expectation that observations could be performed four times per day or once per shift, whatever was convenient for nursing staff. He agreed that his expectation regarding the level and frequency of observations was not documented. He further agreed that it would have been better, with the benefit of hindsight, for him to have documented his expectations regarding observations to be performed for Mahmoud overnight.

9.44 Associate Professor Hudson considered that Mahmoud's presentation on 15 June 2016 warranted consideration of MRSA. Associate Professor Hudson noted that Mahmoud had a skin infection, was in a correctional facility, had passed through another correctional facility prior to arriving at Parklea, and that Mahmoud's facial cellulitis was in what he described as being in a "*danger area*" or the "*danger zone*", involving the nose and upper lip. On this basis, Associate Professor Hudson considered that Mahmoud should have been referred for intravenous therapy, and that an intramuscular injection of penicillin together with an oral dose of flucloxacillin was inadequate. Associate Professor Andresen considered that it may have been reasonable for Mahmoud to have been sent for intravenous therapy at this point in the clinical course. However he did not think that it was reasonable to be critical of the decision to treat Mahmoud with oral therapy and close observations. Associate Professor Andresen considered that this was one of several reasonable

courses of action available, and ultimately thought it was a matter for clinical judgement to be made at the bedside.

9.45 Associate Professor Andresen agreed that whilst Mahmoud had a bacterial infection, he looked systemically well. Associate Professor Hudson considered that it would be difficult to conclude that Mahmoud was not systemically well given that Dr Valabjee had made the assessment at the time with the patient in front of him. On this basis, Associate Professor Hudson indicated that Dr Valabjee's assessment would have to be accepted. Notwithstanding, Associate Professor Hudson considered that the mere fact of Mahmoud presenting with facial cellulitis in the "danger zone" warranted referral of itself, irrespective of whether he was systemically well or unwell. However, Associate Professor Andresen sought to emphasise that the issue was not so clear-cut, and that in certain cases of facial cellulitis oral therapy and close observations would be appropriate treatment. In such instances, Associate Professor Andresen considered that referral would be appropriate if the condition was progressing rapidly, in circumstances where daily assessment was required.

9.46 **Conclusions:** In evidence Associate Professor Hudson sought to emphasise the differences between flu and flu-like symptoms, with the latter implying aches and pains, temperature and general unwellness. On this basis he opined that a patient presenting with such symptoms would be regarded as being systemically unwell. Therefore, having regard to the overall context of Mahmoud's presentation, Associate Professor Hudson considered it to be obvious that Mahmoud was systemically unwell.

9.47 However, such an assessment should not detract from the fact that both Associate Professor Andresen and Associate Professor Hudson acknowledged that a conclusion as to whether or not a patient is systemically unwell is "*impressionistic*". That is, it would be difficult to second-guess, with the benefit of hindsight, an assessment made by a clinician at the time with a patient in front of them. This is particularly so in circumstances where the evidence demonstrates that Dr Valabjee's assessment of Mahmoud on 15 June 2016 took about 20 minutes. Further, there is no basis upon which to conclude that Dr Valabjee did not appropriately illicit information from Mahmoud in order to properly reach a conclusion that he was systemically well. Therefore, the clinical conclusion reached by Dr Valabjee was one that was open to him. Similarly, Dr Valabjee's treatment plan of oral flucloxacillin therapy was also open to him, and consistent with the recommended choice of antibiotic therapy pursuant to the Antibiotic Guidelines. This is despite the fact that Mahmoud's facial cellulitis was located in the "danger zone". The Antibiotic Guidelines do not provide for intravenous antibiotic therapy in such instances (as opposed to oral antibiotic therapy).

9.48 In evidence, Associate Professor Hudson noted that the Antibiotic Guidelines (most recently published in 2019 do not refer to the "danger zone" or whether residence in a correctional centre is a risk factor for CA-MRSA. Both Associate Professor Hudson and Associate Professor Andresen considered that a national guideline would be highly desirable, whilst acknowledging a difficulty with the question of timeliness because the relevant expert group that contributes to the Antibiotic Guidelines only meets quadrennially. It is therefore desirable to make the following recommendations.

9.49 **Recommendation 4:** I recommend to the Chief Executive Officer, Therapeutic Guidelines Limited that consideration be given to referring the following issues to the antibiotic expert group that prepares the next edition of the *Therapeutic Guidelines: Antibiotic*: (a) whether there is a proper epidemiological basis for developing a particular treatment guideline or recommendation for choice of antibiotic therapy in relation to cellulitis in the so-called "danger area" or "danger zone" of the face (the area from the corners of the mouth to the bridge of the nose, including the nose and maxilla); and (b) whether there is a proper epidemiological basis for identifying residence in a correctional centre as a risk factor for patients with purulent cellulitis or in whom Staphylococcus aureus is suspected based on clinical presentation (with reference to Box 2.3.1 of the *Therapeutic Guidelines: Antibiotic* (2019)).

9.50 **Recommendation 5:** I recommend to the Chief Executive Officer, Therapeutic Guidelines Limited that consideration be given to whether there is an appropriate way to address the issues referred to in *Recommendation 4* prior to the publication of the next edition of the *Therapeutic Guidelines: Antibiotic,* such as by the establishment of a special or ad hoc working group, or otherwise.

9.51 One further aspect of Dr Valabjee's management of Mahmoud requires consideration. The solicitor for Mahmoud's family submitted that by 15 June 2016 Mahmoud's right eye was inflamed, consistent with EN Steel's observations during the morning of that day that Mahmoud's appearance had obviously changed from the previous day. It is submitted that this was indicative of a more widespread cellulitis than was appreciated by Dr Valabjee which in turn warranted referral to a hospital. In support of this submission, attention is directed to CCTV footage (and in particular, still images) of Mahmoud on the morning of 15 June 2016.

9.52 The evidence of EN Steel and Dr Valabjee is directly in conflict on this issue. On the one hand Dr Valabjee maintained that Mahmoud's facial cellulitis did not extend to his eye area, whilst on the other hand EN Steel said that it did. Both versions are supported by contemporaneous notes made by both EN Steel and Dr Valabjee.

9.53 **Conclusions:** Due to the limited quality of the CCTV footage it is difficult to embark upon an examination of the kind which the solicitor for Mahmoud's family invites. Indeed, it is not possible to reach a positive conclusion about the extent of Mahmoud's facial cellulitis as depicted in the footage, given the quality of the footage (with blurriness and shadow present). Therefore, reliance must be placed on the evidence given by both Dr Valabjee and EN Steel, and their documented accounts, given that they both had an opportunity to observe Mahmoud directly. Whilst there is no basis to consider either account unreliable, it is most likely that Dr Valabjee's observation is correct given EN Steel's acknowledgement that the redness which she reported observing might have been due to Mahmoud rubbing his eye, rather than being representative of an extension of his facial cellulitis.

9.54 Following his assessment Dr Valabjee requested that Mahmoud be placed in a medical observation cell, for review the following day in the clinic. According to the Justice Health *Observation Bed Policy* Dr Valabjee was required to advise nursing staff of "*the required level observation*" and the "*regularity of clinical measurements*". Furthermore, in accordance with the Justice Health *Clinical*

Handover Policy Dr Valabjee was also required to ensure that "*any information handed over [was] documented in the patient's health record*".

9.55 In evidence Dr Valabjee acknowledged that he did not document his expectation to nursing staff regarding the level and frequency of observations that were to be made of Mahmoud. Dr Valabjee explained that in his mind a patient being placed in a medical observation cell "*encapsulated*" observation of that patient's vital signs. Dr Valabjee also said that as a general "*rule of thumb*" observations of a patient were generally performed four times per day or once per nursing shift.

9.56 In this regard, Dr Valabjee seemed to deflect some responsibility in communicating his expectations of nursing staff regarding observations by seeking to explain that if a nursing staff member had been present during his consultation they would be aware of his expectation, and that if a nursing staff member was not so aware that they would seek clarification from him. In evidence Dr Valabjee acknowledged that, with the benefit of hindsight, it would have been better practice to have documented his expectations regarding observations to be taken of Mahmoud overnight.

9.57 **Conclusions:** Counsel for Justice Health submitted that there was no reason for Dr Valabjee to doubt that observations of Mahmoud (that is, once per shift) would not have been performed in accordance with relevant Justice Health policy. However, the issue is not one with respect to whether Dr Valabjee had any reason to doubt such practice, but whether he appropriately communicated his treatment plan to nursing staff. On this basis, given the concession made in evidence by Dr Valabjee himself, it would have been better practice for such expectations regarding observations to have been documented in the clinical progress notes.

9.58 During the course of the inquest Justice Health put into issue an aspect of Mahmoud's care whilst at Blacktown Hospital, namely when his antibiotic therapy was changed from flucloxacillin to vancomycin. From the documentary evidence there is no dispute that Mahmoud was first administered vancomycin at around 5:00pm on 16 June 2016. Certainly, an addendum to Mahmoud's Patient Health Record notes that by 5:08pm vancomycin was being administered intravenously "ATOR" (at time of report).[20]

9.59 Counsel for Justice Health submitted that instructions for this change in therapy did not occur until around 4:12pm when Mahmoud was reviewed by clinicians form the infectious diseases team (Dr Dotel, Dr Harmer and Dr Sawaqed, along with two medical students) at Blacktown Hospital. However, it is submitted that preceding this review, Mahmoud had actually been reviewed by an infectious diseases registrar (Dr Jason Harmer) at 1:13pm. At that time, flucloxacillin remained as the antibiotic therapy. Therefore, it is submitted that the reasonableness of Dr Valabjee's assessment of Mahmoud on 15 June 2016 is affirmed by the management that Mahmoud subsequently received at Blacktown Hospital. In other words, when Mahmoud was initially reviewed by a clinician from the infectious diseases team, it was considered that flucloxacillin remained the appropriate antibiotic therapy, and that recognition of the need to change this therapy did not occur until some three hours later.

[20] Exhibit 1, page 565.

9.60 As has already been noted above, it is accepted that the antibiotic component of Dr Valabjee's management of Mahmoud was in conformity with the Antibiotic Guidelines and therefore reasonable. Therefore, it would appear to be unnecessary to identify precisely when Mahmoud's antibiotic therapy was changed at Blacktown Hospital. Part of the difficulty involved with undertaking such a task is that Mahmoud's Patient Health Record from Blacktown Hospital when provided in response to the coronial investigation was not assembled in chronological order, and does not contain timestamps in relation to progress note entries indicating when consultations occurred. As a result, as Associate Professor Andresen acknowledged in evidence, interpretation of the relevant records in effect now amounts to "*guesswork*". That said, given the (perhaps undue) attention that this issue received during the course of the inquest, consideration has been given to establishing when instructions were given for Mahmoud's antibiotic therapy to be changed.

9.61 According to Consultation and Case Conference Documents from Mahmoud's Patient Health Record from Blacktown Hospital, a "*Progress Note – Medical*" was made at 1:13pm and again at 4:12pm. Located within the same Patient Health Record are two "*Progress Note – Medical*" entries, one authored by Dr Sawaqed (**Dr Sawaqed's progress note**) with the other authored by Dr Harmer (**Dr Harmer's progress note**), neither of which bears a timestamp. Dr Harmer's progress note indicates that Mahmoud was "*awaiting CT orbits, which is scheduled for 4pm*".[21] The progress note goes on to record, "*I have handed over to the ED MO assigned to this case…who will chase the report if in the ED, or handover to the ward JMO to chase if moved to wards…If the R orbit is involved, we'll need to discuss with max fax at WMH, and change antibiotics*". Justice Health submitted that Dr Harmer's progress note relates to the consultation as 1:13pm, and therefore indicates that Mahmoud's antibiotic therapy remained unchanged at this time.

9.62 It is acknowledged that Dr Harmer's progress note appears to be consistent with an initial consult being performed by a registrar from the infectious diseases team at 1:13pm ahead of a further consultation involving other, and more senior, clinicians from infectious diseases team at 4:12pm. Dr Sawaqed's progress note indicates that a CT head with contrast was ordered in order to rule out orbital cellulitis and intracranial extension. This suggests that the scheduled "*CT orbits*" referred to in Dr Harmer's progress note had not taken place by 4:12pm, the time of the second consult.

9.63 However, there is other evidence which suggests that Dr Sawaqed's progress note relates to the 1:13pm consult:

(a) As at June 2016 Dr Nigel Wolfe was a staff specialist neurologist and head of the Department of Neurology at Blacktown Hospital. As the on-call neurologist for 16 June 2016 Dr Wolfe was contacted at around 9:30pm and asked to accept shared care (with the infectious diseases team) of Mahmoud. In his statement dated 11 December 2016, Dr Wolfe noted that on his review of the available medical records, Mahmoud was seen by infectious diseases team at 1:13pm. Although it is acknowledged that Dr Wolfe did not become involved in Mahmoud's management until after the two infectious diseases consults, and that his statement as to the timing of the consults represents an interpretation of the Patient Health Record, he had the advantage of providing contemporaneous care to Mahmoud and making his statement with reasonable contemporaneity to June 2016.

[21] Exhibit 1, page 597.

(b) Dr Sawaqed's progress note indicates that the plan formulated for Mahmoud was for vancomycin to be administered intravenously, together with blood cultures to be taken and a wound swab to be performed. Pathology records indicate that the wound swab was performed and blood cultures taken at 2:05pm and 2:08pm respectively on 16 June 2016.

(c) The Hospital Escort Journal completed by correctional officers who escorted Mahmoud to Blacktown Hospital records that at 1:20pm "*Doctors [sic] team visited [Mahmoud]*".[22]

(d) Finally, in evidence Associate Professor Andresen acknowledged that "*there are delays*" within hospital environments and therefore it was quite possible for some time to pass between when the order was given for Mahmoud's antibiotic therapy to be changed, and for it to be eventually charted. When asked whether he had an expectation that a change in antibiotic therapy would be performed quickly, associate Professor Andresen indicated that his expectation was that this would occur "*within a couple of hours*".

9.64 **Conclusions:** Accepting the limitations described above in relation to interpretation of Mahmoud's Patient Health Record, it is most likely that the order for Mahmoud's antibiotic therapy to be changed occurred during an infectious diseases team consult at Blacktown Hospital at 1:13pm. Whilst the issue is not without doubt, the contemporaneous records identified above support this conclusion.

Observations and medication administration on 15 and 16 June 2016

9.65 An issue also arises in relation to whether Justice Health nursing staff took vital sign observations of Mahmoud between the conclusion of Dr Valabjee's examination at around 9:25am on 15 June 2016 and when Mahmoud was assessed by RN Hayter at around 4:00am on 16 June 2016. This period of time covers three nursing shifts:

(a) the balance of the morning shift from about, relevantly, 9:25am to 3:00pm;

(b) the afternoon shift from about 1:00pm to 9:30pm; and

(c) the night shift from about 9:30pm to 7:30am the following day.

9.66 CCTV footage from each of these periods does not show any vital sign observations of Mahmoud being performed by any Justice Health staff member. However, it should be emphasised that there is no CCTV footage for much of the afternoon and night shift, between 4:20pm on 15 June 2016 and 5:00am the following day. That said, there are also no documented vital signs observations for any of the three shifts. Mahmoud's Standard Adult General Observation (**SAGO**) chart was unable to be located by Justice Health, in circumstances where it would ordinarily be expected to form part of his clinical records.

[22] Exhibit 1, page 435.

9.67 Although the inquest did not receive evidence from nursing staff rostered during the afternoon shift, evidence was given by RN Hayter who was the only staff member rostered on during the night shift. RN Hayter said that she had no personal interaction with Mahmoud between 9:30pm on 15 June 2016 and 4:00am the following day. RN Hayter said that she had no recollection of looking through the window to Mahmoud's cell in order to perform any type of observations. RN Hayter explained that the only observations that she made of Mahmoud were visual observations, namely periodically watching him on CCTV footage whilst she performed other duties.

9.68 When these visual observations were made, RN Hayter said that she noticed nothing alarming that would have caused her to request correctional officers to open Mahmoud's cell (so that further assessment could be conducted). RN Hayter said that it appeared to her that Mahmoud was walking and talking normally, did not appear to have any difficulty breathing, and was not showing any clinical signs indicative of an imminent medical emergency. When it was suggested that such observations would have been difficult to make from merely watching CCTV footage, RN Hayter sought to explain that if Mahmoud had been experiencing difficulty breathing he would have been sitting down and not walking normally, and he would not have been talking normally by virtue of needing to use auxiliary muscles "*to get air in*".

9.69 According to Mahmoud's medication chart he was scheduled to be administered flucloxacillin at 12:00am on 15 June 2016. According to the same chart, Mahmoud had earlier been administered flucloxacillin at 8:00am, 12:00pm and 6:00pm. Each of these notations was signed by the nurse administering medication. However, the 12:00am entry for flucloxacillin on Mahmoud's medication chart bears no such signature. In evidence RN Hayter said that she had no recollection of whether she administered flucloxacillin to Mahmoud at 12:00am or not. However she indicated that it would have been her general practice to sign a patient's medication chart when medication is administered. That being so, RN Hayter frankly conceded that the absence of her signature probably indicated that flucloxacillin was not given to Mahmoud, explaining this omission to be a matter of "*human error*".

9.70 In her evidence RN Hayter said that she recalled Mahmoud to be banging on the door of his cell and calling out at intervals over a long period. RN Hayter had no specific recollection of what Mahmoud was calling out but said in evidence that she knew that Mahmoud wanted to leave the clinic and return to his cell. Further, RN Hayter said that Mahmoud made no request to be seen by a doctor. RN Hayter's recollection of Mahmoud's behaviour during the evening shift is consistent with the available CCTV footage. This footage depicts many occasions in which Mahmoud attempted to attract the attention of clinic staff, attempts which were apparently not responded to. Mahmoud's motivation in attempting to attract the attention of clinic staff members and engage with them is not known.

9.71 In evidence RN Hayter said that she spent about 30 minutes with Mahmoud on the morning of 16 June 2016. On behalf of Mahmoud's family it is submitted that this should not be accepted given that will it was a particularly busy morning, and RN Hayter's assessment was attended by three correctional officers in the cell because Mahmoud was being verbally abusive. Against this, it is submitted that RN Hayter explained in evidence that she had had a "myriad of discussions" with Mahmoud and that she had completed a detailed progress note. Further it is submitted that the presence of three correctional officers meant that RN Hayter's assessment was not quick or

rushed, despite her acknowledgement later in evidence that Mahmoud's demeanour made it more difficult to provide a level of care to Mahmoud which was required.

9.72 **Conclusions:** Counsel for Justice Health acknowledges that RN Hayter should have, at the very least, taken vital sign observations and administered flucloxacillin as directed by Dr Valabjee. On behalf of RN Hayter it is submitted that although not perfect, the care provided by RN Hayter was appropriate given the clinical picture and her level of knowledge at the time. This submission is difficult to reconcile against RN Hayter's own acknowledgement that she had no personal interaction with Mahmoud, and her concession that it was likely she did not administer flucloxacillin to Mahmoud at 12:00am. It should also be noted that RN Hayter's understanding of Mahmoud's clinical picture cannot and should not detract from the requirements of Justice Health policy to perform vital sign observations during each nursing shift

9.73 Ultimately it is not possible nor, more importantly, necessary to reach any conclusion about the length of time that RN Hayter spent with Mahmoud on the morning of 16 June 2016. This is because in evidence RN Hayter acknowledged that she did not take Mahmoud's vital signs and that, in hindsight, she "*probably should have*" and that doing so may have made a difference to her assessment (even though she explained that Mahmoud's presentation was not in any way indicative of respiratory distress). However, it should be noted that in evidence RN Hayter also explained that she could not recall whether she had seen Mahmoud the previous day (15 June 2016, because he had a blanket over his face and so she may not have seen his face adequately) and therefore did not have a baseline from which to make an assessment of any worsening of Mahmoud's facial cellulitis.

9.74 Overall, the nature of observations performed of Mahmoud between 15 and 16 June 2016 was not adequate or appropriate in the circumstances. Even in the absence of portions of CCTV footage and documentary records such as a SAGO chart, it is most likely that vital sign observations were not performed and that flucloxacillin was not administered at 12:00am. Further, it appears to be at least somewhat surprising that Mahmoud's repeated attempts to attract the attention of persons within the clinic were not responded to. However, in this regard it is acknowledged that it is not possible to identify Mahmoud's motivation in doing so, and whether these attempts necessitated a response of some kind, especially a clinical one (as opposed to an administrative one which was within the responsibility of correctional officers). Finally, it should also be acknowledged that there is no evidence to suggest that even if Mahmoud had been administered flucloxacillin at 12:00am that this would have altered his clinical course, given that it is not an MRSA-active antibiotic.

9.75 Having regard to the demonstrated departure from established Justice Health policies by Dr Valabjee, RN Hayter and EN Steel it is necessary to make the following recommendation.

9.76 **Recommendation 6:** I recommend that Justice Health review its training programs for clinical staff to ensure that they appropriately emphasise the importance of: (a) properly documenting all aspects of a patient's treatment plan in the patient's health record; (b) properly documenting the level/type and frequency of observation in the patient's health record in relation to patients who are to be placed in a clinical observation bed (or otherwise observed for a period in the clinic); and (c) giving timely and appropriate consideration to whether the medical care and treatment required by a patient can be practically and realistically delivered in a correctional centre setting, bearing in mind considerations such as staffing levels, security protocols and other similar matters.

10. Mahmoud's transfer to hospital and notification provided to his family

10.1 Section 7.3.7.3 of the CSNSW Operations Procedures Manual (**OPM**) deals with notifying the emergency contact person for an inmate in circumstances where an inmate is hospitalised. It provides: "*if an inmate is admitted to hospital as an inpatient (i.e. they will be remaining overnight in the hospital) with little or no warning, then the GM (or the GM's authorised officer) must ensure the inmates emergency contact person is notified*". It goes on to provide: "*when an inmate is admitted as an inpatient with no advance warning…the GM (or authorised officer) is to ensure that the inmates emergency contact person is notified of the situation, as soon as possible and on the same day it is confirmed that the inmate will be admitted as an inpatient*".[23] With this background in mind, the evidence established that Mahmoud's family were not notified of his transfer to hospital until the evening of 17 June 2016, by which time Mahmoud had already been transferred from Blacktown Hospital to Westmead Hospital.

10.2 Section 6.4.3.7 of the OPM provides for the use of telephones by inmates during hospital escort. It provides that "*inmates will be allowed one telephone call on admission to hospital. An escorting officer will make the call for the inmate…Thereafter, a bedside phone will be installed for the inmate to receive incoming calls. An escorting officer will answer all calls…*".[24]

10.3 As the operator of Parklea Correctional Centre, GEO Group (**GEO**) was required to have relevant policies in place that were not inconsistent with the OPM. Section 5.22 of the GEO Group *Parklea Correctional Centre Operating Manual – Escorts (Policy No. PCC/OP019)* (**the GEO Escorts Policy**) deals with the use of telephones by inmates during hospital escort. Specifically section 5.22.1 provides that "*inmates will be allowed one telephone call on admission (inmates have been allocated a bed in a ward and not waiting in emergency) to hospital*". Further section 5.22.2 provides: "*thereafter, a bedside phone will be installed for the inmate to receive incoming calls*". The evidence established that GEO did not facilitate Mahmoud making a call to his family until the evening of 17 June 2016.

10.4 The detrimental effect of Mahmoud's family not being notified of his transfer to hospital until 17 June 2016, and Mahmoud not being able to make a phone call to them until the same day, should not be understated. Mahmoud's youngest sister, Rayan, explained that when Mahmoud was eventually able to make a call and spoke to his mother he enquired why his family had not visited

[23] Exhibit 1, page 413.28.
[24] Exhibit 1, page 413.17.

him. Further, Rayan explained, "*Not only was Mahmoud suffering, he was suffering alone. We should have been given the respect to be by his side*".[25]

10.5 The following is evident from the above policy documents:

(a) Pursuant to Section 7 of the OPM, Mahmoud's family were to be notified once he was admitted to hospital, with admission being defined as remaining overnight at hospital;

(b) Pursuant to both Section 6 of the OPM and GEO Escorts Policy, Mahmoud was allowed one telephone call on admission, with admission not defined within Section 6 of the OPM.

10.6 On behalf of GEO it is submitted that regard must be had to the fundamental purpose underlying the relevant policies. That is, section 5.18 of the GEO Escorts Policy deals with security and general conduct on medical escorts. Specifically 5.18.1 provides that "*the primary responsibility of the escorting officers is to provide adequate security and supervision at a level appropriate to the circumstances pertaining to the patient*".[26] Therefore, it is submitted, the primary reason that an inmate's family are not immediately notified when that inmate is transferred from a correctional centre to a hospital is for security reasons. There are, in essence, two considerations relevant to these issues of security: the need to mitigate the possibility of any security risk associated with an inmate's transfer (when an inmate is beyond the confines of a correctional centre), and the need to mitigate the possibility of any security risk if an inmate is only temporarily absent from a correctional centre (such as attending an emergency department and then being returned to a correctional centre without being omitted).

10.7 In Mahmoud's case it is submitted that having regard to an investigation report completed by the Corrective Services New South Wales (**CSNSW**) investigator (which did not identify any breaches of CSNSW policies by GEO Group staff) it was decided that 12:30pm on 16 June 2016 that Mahmoud was to be transferred from Blacktown Hospital to the intensive care unit at Westmead Hospital. It is further submitted that this was followed by a period of uncertainty, due in large part to bed availability, resulting in Mahmoud's transfer being delayed and him not being admitted to Westmead Hospital until 2:30pm on 17 June 2016.

10.8 Although not explicitly stated, the submissions made on behalf of GEO Group have been understood to be that non-compliance with the relevant policies relating to notifying Mahmoud's family of his transfer to hospital and allowing Mahmoud to call his family were due to the uncertainty associated with his transfer to Westmead Hospital and not being admitted there until 2:30pm on 17 June 2016.

10.9 In this context the following should be noted:

(a) The Blacktown Hospital records[27], together with the statement of Dr Wolfe[28], explicitly established that Mahmoud was admitted at Blacktown Hospital under the care of the infectious diseases team.

[25] Exhibit 1, Tab 8 at [21].
[26] Exhibit 1, page 460.9.
[27] Exhibit 1, page 573.

(b) The GEO Hospital Escort Journal records that Mahmoud was advised by doctors at 1:30pm on 16 June 2016 that he "*will stay over the weekend in [Blacktown Hospital]*".[29] This reference to an overnight stay would appear to meet the definition of "admission" set out in Section 7.3.7.3 of the CSNSW Operations Procedures Manual.

(c) Although there appears to have been some initial uncertainty regarding bed availability, Mahmoud was allocated a ward bed by no later than 8:30am on 17 June 2016.[30] Although Section 5.22 of the GEO Escorts Policy stipulates that admission is taken to mean when an inmate is allocated a ward bed and not waiting in an emergency department, Section 6.4.3.7 of the OPM contains no such stipulation. As GEO was required to have policies in place that were not inconsistent with respective CSNSW policies, Section 6.4.3.7 should be regarded as the prevailing policy.

10.10 **Conclusions:** Having regard to each of the above matters it is evident that Mahmoud had been admitted to Blacktown Hospital by at least 1:30pm on 16 June 2016. This in turn means that the relevant provisions of the OPM and GEO Escorts Policy were not complied with. For avoidance of doubt, it should be noted that Section 7.3.7.3 of the CSNSW Operations Procedures Manual requires notification as soon as possible and on the same day as admission. Even taking into account the matters submitted on behalf of GEO and the need to fulfil security requirements, it could not be said that the notification to Mahmoud's family was given as soon as possible.

10.11 One final matter should be noted. It was submitted on behalf of GEO Group that even if notification had been given to Mahmoud's family it is not known whether permission to visit him would have been allowed. Although there is no direct evidence as to this issue, it can be inferred that certain considerations will ordinarily apply in relation to the issue of whether an inmate is able to receive a visit from family members. That said, the issue here is one of notification rather than visitation. Again in the absence of direct evidence, it may be inferred that the purpose of providing such notification as soon as possible is so that an inmate's family members can be informed in a timely manner of an acute medical event which requires an inmate's hospitalisation and, in turn, take necessary steps to respond to such an event.

11. Acknowledgments

11.1 Before turning to the findings that I am required to make, I would like to acknowledge, and express my gratitude to Mr Joe Edwards, Counsel Assisting, and his instructing solicitor, Mr James Loosley of the NSW Crown Solicitor's Office. Their assistance during both the preparation for inquest, and the inquest itself, has been invaluable and of the highest standard. I also thank them for the sensitivity and empathy that they have shown in this matter.

11.2 I also thank Detective Sergeant Andrew Tesoriero for his role as the officer in charge of the investigation, and for compiling the initial brief of evidence.

[28] Exhibit 1, Tab 46 at [12].
[29] Exhibit 1, page 435.
[30] Exhibit 1, page 440.

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

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

Identity
The person who died was Mahmoud Allam.

Date of death
Mahmoud died on 19 June 2016.

Place of death
Mahmoud died at Westmead Hospital, Westmead NSW 2146.

Cause of death
The cause of Mahmoud's death was MRSA sepsis.

Manner of death
Mahmoud died as a result of natural disease process, whilst in lawful custody. This natural disease process most likely involved development of facial skin infection in an inmate patient with community-acquired methicillin-resistant Staphylococcus aureus colonisation (CA-MRSA), followed by spread of the skin infection, concurrent with spread of CA-MRSA from the facial skin to the right cavernous sinus, and bloodstream invasion by CA-MRSA. Metastatic sites of infection included the lungs and epidural and prevertebral spaces, leading to a number of manifestations, including cavernous sinus thrombosis, encephalitis, epidural abscess, overwhelming sepsis and multi-organ failure.

13. Epilogue

13.1 At the time of his death Mahmoud, by virtue of his incarceration, had already separated from the many members of his loving family. To know that this physical separation has now become permanent in such distressing and unforeseeable circumstances is truly heart-rending. There is no doubt, however, that Mahmoud will always remain as the beloved son, brother, and uncle to those closest and most dear to him.

13.2 On behalf of the Coroner's Court of New South Wales, I offer my deepest sympathies, and most sincere and respectful condolences, to Mahmoud's family for their most painful and overwhelming loss.

13.3 I close this inquest.

Magistrate Derek Lee
Deputy State Coroner
25 March 2020
Coroner's Court of NSW

14. Appendix A

Inquest into the death of Mahmoud Allam

Recommendations made pursuant to section 82 *Coroners Act 2009*

To the Chief Executive, Justice Heath & Forensic Mental Health Network:

1. I recommend that Justice Health & Forensic Mental Health Network (**Justice Health**) review its training programs and material for clinical staff to ensure that adequate and appropriate measures are in place for the detection, management, and prevention of community-acquired methicillin-resistant Staphylococcus aureus (**CA-MRSA**), including by considering whether:

   (a) existing training programs and material recognise that CA-MRSA is likely to be more prevalent in correctional centres than in other settings within the community; and

   (b) the circumstances of Mahmoud Allam's death (with appropriate anonymization, and conditional upon consent being provided by Mahmoud's family and following appropriate consultation with them) should be used as a case study as part of any training programs delivered to clinical staff.

2. I recommend that Justice Health give consideration to whether it is necessary or desirable to develop a specific policy or guidelines concerning the prevention, detection and management of community-acquired methicillin-resistant Staphylococcus aureus.

3. I recommend that Justice Health give consideration to whether it is possible (having regard to relevant limitations) to conduct or commission research by:

   (a) analysing historical patient data (already held by Justice Health); and

   (b) collecting future patient data (including appropriate social, economic and demographic data), in order to assist in determining the prevalence of community-acquired methicillin-resistant Staphylococcus aureus in correctional centres in New South Wales.

4. I recommend that Justice Health review its training programs for clinical staff to ensure that they appropriately emphasise the importance of:

   (a) properly documenting all aspects of a patient's treatment plan in the patient's health record;

   (b) properly documenting the level/type and frequency of observation in the patient's health record in relation to patients who are to be placed in a clinical observation bed (or otherwise observed for a period in the clinic); and

   (c) giving timely and appropriate consideration to whether the medical care and treatment required by a patient can be practically and realistically delivered in a correctional centre setting, bearing in mind considerations such as staffing levels, security protocols and other similar matters.

To the Chief Executive Officer, Therapeutic Guidelines Limited:

1. I recommend that consideration be given to referring the following issues to the antibiotic expert group that prepares the next edition of the *Therapeutic Guidelines: Antibiotic*:

   (a) whether there is a proper epidemiological basis for developing a particular treatment guideline or recommendation for choice of antibiotic therapy in relation to cellulitis in the so-called "danger area" or "danger zone" of the face (the area from the corners of the mouth to the bridge of the nose, including the nose and maxilla); and

   (b) whether there is a proper epidemiological basis for identifying residence in a correctional centre as a risk factor for patients with purulent cellulitis or in whom Staphylococcus aureus is suspected based on clinical presentation (with reference to Box 2.3.1 of the *Therapeutic Guidelines: Antibiotic* (2019)).

2. I recommend that consideration be given to whether there is an appropriate way to address the issues referred to in Recommendation 2 above, prior to the publication of the next edition of the *Therapeutic Guidelines: Antibiotic*, such as by the establishment of a special or ad hoc working group, or otherwise.

Magistrate Derek Lee
Deputy State Coroner
25 March 2020
Coroner's Court of NSW

15. Appendix B

Pursuant to section 75(2) of the *Coroners Act 2009* publication of any matter (including the publication of any photograph or other pictorial representation) which identifies any of the following persons is prohibited:

Document	Tab in Brief (Exhibit 1)
Warrant information form – residential address and telephone number of Mahmoud Allam's mother Telephone number of Mahmoud Allam's father	Tab 11, p. 138 Tab 11, pp. 142 and 162
Intake Screening Questionnaire – telephone number of partner	Tab 12, p. 151
Inmate Profile Document for inmate Mahmoud Allam – residential addresses of family members	Tab 13, pp. 182–183; Tab 45 pp. 542–543
OTS phone call log – telephone numbers of individuals	Tab 19, pp. 210-392
CCTV Footage (entirety of footage)	Tab 38 (USB)
CSNSW OPM (applied at date of death) 6: Escorts – entirety of document CSNSW OPM: 7.3: Miscellaneous Health Issues – entirety of document	Tab 22A Tab 22B
Parklea Correctional Centre Operating Manual: Escorts (Policy No. OP019)	Tab 33A

Magistrate Derek Lee
Deputy State Coroner
25 March 2020
Coroner's Court of NSW