LOCAL COURT of NEW SOUTH WALES

Coronial Jurisdiction

Inquest:	**Inquest into the death of Michelle McIlquham**
Hearing dates:	8-11 October 2012
Date of findings:	November 2012
Place of findings:	State Coroner's Court, Glebe
Coroner:	Deputy State Coroner H.C.B. Dillon
Findings:	I find that Michelle McIlquham died on 19 May 2009 at the Bankstown Hospital, New South Wales due to undiagnosed acute streptococcus pneumonia meningitis (with left-sided otitis media as the antecedent cause).
Recommendations:	I recommend that the Minister for Health and the South West Sydney Local Health District (or whichever is more appropriate) ***consider implementing*** the following practices, clinical policies and guidelines or revisions to current policies or guidelines: (a) That there be a nursing assessment of any "specific high-risk patient" (as defined in the Bankstown Hospital protocol "Emergency Department Supervision" BNK_GL2010_001) triaged categories 1, 2 and 3 before he or she is physically discharged from the Emergency Department if that has not taken place within 30 minutes of his or her last review and the patient remains within the physical confines of

the department.

(b) That there be a nursing assessment of any patient who requires physical assistance to be transferred from their bed to their mode of transport on discharge unless it is clear that the need for physical assistance was assessed by a doctor at the time of the clinical decision to discharge. Alternatively, I recommend that NSW Health or the Local Health District (as the case may be) consider amending its standard emergency department discharge protocols to include a warning on the discharge documentation that if a patient requires physical assistance to leave the Emergency Department he or she ought not be discharged unless it is clear that the need for physical assistance was assessed by a doctor at the time of the clinical decision to discharge.

(c) That a guideline that all patients with a presenting complaint of seizure, but who do not have a previous history of seizures, should be assessed by a senior doctor in the Emergency Department, and if a senior doctor is unable within 30 minutes to assess the patient, a full blood count and any other tests that ought be included in a standard battery of tests for such a patient should be ordered.

(d) That all patients presenting with a GCS score of less than 15 should have their GCS assessed on admission and prior to discharge.

(e) That all patients who on presentation were triaged categories in 1, 2 or 3 with developmental disability should be assessed by a senior doctor before discharge.

(f) That there should be an annual education of all clinical staff in the Emergency Department in relation to detection of signs of risk factors, signs and symptoms of sepsis in patients presenting to an emergency department. AND further that the clinical education should include information on tests or investigations that can be performed to identify sepsis in patients and subsequent management with rapid intravenous antibiotics, fluids and source control.

(g) That a junior medical officer's differential diagnosis should be documented in the patient's clinical record in the Emergency Department. At Bankstown Hospital, the appropriate place and time for this may be when the Presentation Plan is

formulated.

(h) That Section 1 (entitled "Emergency Department Patient Assessment and Review") of the Bankstown Hospital Emergency Department Supervision Guideline be reviewed in accordance with these findings.

(i) That the Local Health District consider including in the in-house training given to Emergency Department staff (medical and nursing) a regular session on mental and physical preparation for a shift and self-care during a shift.

(j) That, in an appropriate forum or manner, the Local Health District emphasise to Nursing Unit Managers and to senior doctors supervising Emergency Departments that the efficiency of their staff will be improved by attention being paid to self-care, especially rehydration, during shifts.

(k) That the Local Health District consider developing a poster or notice that can be placed in Emergency Departments warning staff of the effects of fatigue and urging staff to rehydrate regularly and eat light meals during the shift.

File number: 1337/09

Representation:

Dr K. Stern SC (Counsel Assisting) instructed by Mr M. Granziera (Crown Solicitor's Office)

Mr M. Fordham SC instructed by Curwoods Lawyers (Sydney South West Local Health District)

Ms M. Campbell instructed by Brydens Lawyers (Mrs M. McIlquham)

Mr E. Pike instructed by Avant (Dr J. Tsang)

Mr S. Barnes instructed by TressCox (Dr N. Usmani)

Ms P Robertson Nurses Association (RNs Archer, Aston, Bonus and Kakaris)

REASONS FOR DECISION

Introduction

1. Michelle McIlquham died at the Bankstown Hospital at 11.58am on 19 May 2009 at 28 years of age due to bacterial meningitis which developed from a middle ear infection she had suffered for a few days. She also suffered from mild intellectual delay, a lung cyst and coeliac's disease, but these did not contribute to her death.

2. Her family's account is that she was an intelligent and independent person who could communicate well, although she was sometimes difficult to understand because she talked fast. She attended a post-school training programme where she learned life skills. Staff at the school found her communicative and easy to deal with. It was very evident at the inquest that she was much-loved and much-missed by her family.

3. Mrs Maureen McIlquham, Michelle's mother, described her love of singing and her pleasure in assisting other people. Michelle was outgoing and friendly and was surrounded by others who enjoyed her company. She was an accomplished horse-rider and was able to perform tricks such as picking up objects on the ground from the saddle. She read and danced and participated in sport and loved animals.

4. Her death was sudden and unexpected and was a terrible blow to her family who had been looking forward happily to her brother John's wedding at the time. It followed an illness of approximately three days duration. She was found unconscious and not breathing at her home at around 11 am on 19 May 2009, and was rushed to hospital by ambulance. Attempts at resuscitation were unsuccessful.

5. She died within seven hours of being discharged from Bankstown Hospital Emergency Department where she had been taken the night before by ambulance following a deterioration of her condition at home.

The cause of Michelle's death

6. The NSW Health Form A Report of Death to the Coroner completed on 19 May 2009 by Dr Stephen Meaney at the Bankstown Hospital identifies, each marked with a

question mark, four possible causes of death. These were *"cardiac arrhythmia, myocardial infarct, massive intracerebral haemorrhage secondary to AVM or encephalitis".* These handwritten notes do not include any reference to infection spreading to the brain.

7. The police P79A Report of Death to the Coroner puts the cause of death as "unknown". In his account to Sergeant Hadfield, the investigating police officer, the only infection Dr Meaney identified as a possible cause of death was encephalitis[1], not meningitis. [2] Dr Meaney apparently told Sen Con Hadfield that one possibility was that the encephalitis could have come from an ear infection that spread to the brain. It appears that meningitis was not mentioned at this discussion.

8. Sen Con's Hadfield's account is that when he spoke with nursing staff at the Bankstown Hospital during the afternoon of 19 May 2009 they were unsure what had caused Ms McIlquham's death. He also recorded that Dr Meaney told him that Michelle was *"like a baby and would not have been able to communicate with her family properly. It would have been very difficult for anyone to understand what exactly was bothering her as she was unable to speak"*. It is not clear whether this was intended to describe Ms McIlquham generally, or during her attendance at the Bankstown Hospital the previous night. If it was intended to describe her general capacity to communicate, it is at odds with the accounts of those who knew her well.

9. The interim Post Mortem report of Dr Matthew Orde dated 21 May 2009 concludes that the direct cause of death was meningitis. Dr Orde comments: *"It is possible that the meningitis stemmed from a middle ear infection (to be confirmed). Statements should be obtained from treating drs (when she first presented). It is likely that expert opinion(s) will be needed to comment on the standard of care".*

10. Dr Orde's post mortem report dated 6 December 2010 concluded that the direct cause of death was acute streptococcus pneumonia meningitis with left-sided otitis

[1] Encephalitis is irritation and swelling (inflammation) of the brain, most often due to infections. Encephalitis is a rare condition. It occurs more often in the first year of life and decreases with age. The very young and the elderly are more likely to have a severe case. Encephalitis is most often caused by a viral infection. (See PubMedHealth http://www.ncbi.nlm.nih.gov/pubmedhealth/PMH0002388/).

[2] Meningitis is a bacterial infection of the membranes covering the brain and spinal cord (meninges).

media (or middle ear infection) as the antecedent cause. At the post mortem he identified florid left-sided acute otitis media with extension of inflammation into the adjacent bone. He also identified findings in the brain consistent with purulent meningitis. A left side middle ear swab grew streptococcus pneumonia. A subarachnoid cerebral swab grew streptococcus pneumonia. And a blood culture grew alpha haemolytic streptococcus.

The issues

11. A coroner's primary role is to investigate and make findings as to the identity of the deceased person, the date and place of the death, and the manner and cause of death. He or she may also make such recommendations considered necessary or desirable in relation to any matter connected with the death being investigated.

12. This inquest is concerned primarily with the manner or circumstances of Ms McIlquham's death. A number of issues of serious concern were raised by the evidence:

- The McIlquham family believe that Ms McIlquham was treated differently and less respectfully than a person who did not suffer from developmental or intellectual disability. Are they correct and, if so, why did this happen?

- Was adequate attention paid or appropriate weight given by medical and nursing staff to the possibility that her difficulties in communicating were not merely behavioural and related to untreated pain from her middle ear infection but in fact signs of a serious illness? If not, why not? A related issue is whether adequate attention or weight was given to the concerns expressed by her mother that her condition was abnormal and that she was seriously unwell.

- Did medical staff at Bankstown Hospital Emergency Department give appropriate and reasonable consideration to the reports that Ms McIlquham had presented at hospital due to suffering a first seizure episode? If not, why not?

- Were there shortcomings or failings in the way in which Ms McIlquham was diagnosed and in the checking or supervision of that diagnosis by a more senior

clinician in the Emergency Department? If so, why, and what lessons may drawn from this experience?

- Did staff at the Bankstown Hospital Emergency Department fail to recognise signs of Ms McIlquham's deterioration in condition between the time she was examined by a doctor at about 0300 hours on 19 May and the time she actually left the department? If so, why?

- No formal observations having been taken since 0105 hours, was it appropriate for staff in the Bankstown Hospital Emergency Department to discharge Ms McIlquham at around 0415 hours in light of her presentation at that time?

- What has been done by the Local Health District in response to Ms McIlquham's death to reduce risk to other patients in similar circumstances or conditions?

- Finally, are there further safeguards or measures that can implemented to reduce the risk of similar events recurring?

13. An issue of considerable concern raised by this case is the manner in which those with mental impairment or developmental difficulties are assessed and diagnosed within the NSW hospital system. In this case, there appears to have been an assumption that Ms McIlquham's presentation arose from her developmental disability rather than from her presenting illness. The diagnosis of "temper tantrum" recorded prior to Ms McIlquham's discharge from the Emergency Department at the Bankstown Hospital is also a matter of significant concern that must be addressed.

14. Dr Brett Oliver, SWSLHD Director Medical Services, has provided a letter dated 12 October 2012 addressing changes that have been made at the Bankstown Hospital since Ms McIlquham's death. Attached were a number of relevant policy documents. I will consider these policies and the extent to which they address the circumstances of Ms McIlquham's death at a later point in these findings.

What happened?

15. The short history of Ms McIlquham's final and fatal illness begins with her first becoming noticeably unwell on 16 May 2009 when she complained to her family

that she had pain in her left ear and was vomiting. Over the next two days she continued to complain of the earache. She also continued to vomit and suffered headache. She lost her appetite and only took fluids.

16. At about 2pm on 18 May, Ms McIlquham received a home visit from her family GP, Dr Joseph Tsang. Dr Tsang had treated her since she was six years old and knew her well. He was able to communicate with her without great difficulty but she tended not to volunteer symptoms. He therefore also spoke to Mrs McIlquham about her. At the time of his examination, he found that she was afebrile, alert but suffering earache and headache. She did not appear to be particularly unwell or distressed at the time. She had had a previous history of otitis media and had responded well in the past to antibiotic treatment. He prescribed oral erythromycin to treat her middle ear infection.

17. Despite being commenced on the antibiotics, Ms McIlquham suffered a seizure at about 8.30pm the same day. She was seen by her sister Sue and her father Michael to be jerking and convulsing and producing spittle. Her mother was called but only saw her in her post-ictal state[3]. Mrs McIlquham described Michelle as "staring straight ahead" and looking as though she was "out of it". Similar descriptions were given by Sue and Michael McIlquham. Mr McIlquham called an ambulance as soon as he saw Ms McIlquham having the seizure. The ambulance officers noted the history given by the family and recorded her vital signs. In particular, they noted that she had had no previous history of seizures, that she was mildly febrile and that she was "normally non-verbal when unwell". They also noted that she complained of headache. On their arrival at about 9pm they assessed her Glasgow Coma Scale score, a rough measure of mental status, as being 10/15. It rose to 14/15 over the next 25 minutes. In a later statement to police, Ambulance Officer Paul Roberts said that he had been concerned about the possible cause of the seizure which was not typical for a mild ear infection.

18. She was taken to Bankstown Hospital Emergency Department where she was triaged at 2142 hours as a Category 3 patient, that is, a patient who appears to be

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[3] The altered state of consciousness following a seizure while the victim's brain recovers or "resets" itself. This usually lasts 5-30 minutes depending on the severity of the seizure.

suffering a "potentially life-threatening condition" and who, according to the NSW Health triage guidelines, "need to have treatment within 30 minutes".[4]

19. The triage nurse, Registered Nurse Yasmine Archer, recorded the following presenting information: the patient was "post ictal. [Patient] has been unwell with fever, [with] frontal headache, on [antibiotics] for ear infection, tonight had witnessed tonic clonic seizure, found to be post ictal by [ambulance]. On arrival [patient] alert, vocalising, unsettled, ambulant, [pupils equal and reactive to light], nil photophobia or neck stiffness – [history] of intellectual disability, nil [history] of seizures". Her temperature was 37.7°C.

20. At 2150 hours, the progress notes made by a nurse record complaints of ear infection, headache and agitation. On physical assessment Ms McIlquham was found to be agitated, had flushed skin and was hot to touch. She appeared lethargic. Her last Panadol had been given to her at about 1800 hours. Although this was approximately four hours before her admission, this may be significant because paracetamol can mask signs of infection. She was given Nurofen at 2155 for headache by RN Ayten Karakis.

21. At 2310 the notes record that her pain was not relieved and that she was still agitated. Panadeine Forte was ordered by Dr Nasheeth Usmani and given by RN Karakis. When combined with the triage history and categorisation, the fact that Ms McIlquham required very strong pain relief only a little more than hour after being given Nurofen might have raised a red flag. In retrospect, this appears to have been a lost opportunity to assess the true seriousness of Ms McIlquham's condition.

22. Two further such opportunities were probably lost at about the same time. RN Kim Aston, a highly experienced nurse who was Nursing Unit Manager on duty that night, gave evidence that at about 2300 hours she had been told by Dr Mohammed Abdile that Ms McIlquham was "very sick and needed to be seen". She said that she had told this to Dr Pragie Govender, one of two senior doctors in charge of the

[4] A category 1 patient requires immediate treatment for an "immediately life-threatening condition". They must be seen within 2 minutes of arrival. Patients in category 2 must be seen within 10 minutes because they are suffering from conditions that are probably "imminently life-threatening". See NSW Health website: http://www.health.nsw.gov.au/hospitals/going_to_hospital/triage.asp accessed 14 Oct 2012.

Emergency Department that night, and Dr Susan Tyler-Freer in Dr Abdile's presence.

23. RN Aston also gave evidence that at about 2315 hours she had approached Dr Tyler-Freer, and Dr Govender to see whether a CT brain scan should be ordered as the radiography department was due to close at midnight. She says that she was told by Dr Govender that Ms McIlquham had to be seen by a doctor first and had to wait her turn.

24. Dr Govender had no recollection of this and did not think it had happened. He suggested that RN Aston may have confused him for another doctor of Indian ethnicity who was working in the department that night. In my opinion, RN Aston's evidence is to be preferred on this point for a number of reasons. First, she not only had an apparently clear recollection of the conversation (which is not surprising given the tragic outcome) but, secondly, she immediately escalated Ms McIlquham's priority on the queue, listing her as the next patient to be seen by a doctor. Thirdly, it seems unlikely that a very experienced Nursing Unit Manager who had worked in the department for a long time would confuse the medical staff, especially the senior doctors working on the shift. Neither were newcomers to the department. Dr Govender had been at Bankstown Hospital since 2005 and she since 2007. Fourthly, Dr Tyler-Freer corroborated RN Aston's evidence in some respects in her letter to the Health Care Complaints Commission dated 27 January 2010 when she said that although she had no specific recollection of her conversations with RN Aston on the evening, she recalled that RN Aston had been "very concerned" about Ms McIlquham and had spoken to both her and the Career Medical Officer in charge about expediting Ms McIlquham's medical review. Fifthly, this was a very busy night at the Emergency Department with a number of ambulances having unloaded and others waiting to be unloaded. Dr Govender, being one of the two senior doctors working in the department that night, was apparently heavily engaged in dealing with category 1 and 2 patients at about this time. He made no contemporaneous notes about any conversations he had had with anyone about Ms McIlquham. It is not surprising that, three years after these events, his recollection is very poor. Finally, RN Aston presented as a witness who had thought deeply about the events of that sad evening and was prepared to make honest concessions about mistakes and lost

opportunities. She had seen and been directly involved with Ms McIlquham whereas Dr Govender had not.

25. This is not to suggest that Dr Govender was a dishonest witness. Probably because he was so busy that night, and no doubt on many other nights in the last three years, he simply has a very poor memory now of the details of what happened regarding Ms McIlquham on the night of 18-19 May 2009. I therefore cannot place reliance on his evidence where it diverges from the clinical record or the evidence of other witnesses with better memories or more direct contact with Ms McIlquham that night.

26. Ideally, RN Aston would have recorded summaries of these conversations in the progress notes both as a potential prompt to others in the department that night to assess Ms McIlquham urgently and as an aide memoire. In fairness, however, I note that she sought to bring Ms McIlquham's case to the attention of the doctors both directly by speaking to them and indirectly by escalating her priority on the waiting list.

27. The observation chart records observations at 2150, 2345 and 0105 hours but nothing thereafter. RN Rachelle Bonus, who took the 0105 observations, said that Ms McIlquham was unable to communicate. She attributed this to her developmental disability.

28. Regardless of Ms McIlquham's inability to communicate and the reasons for it, she was evidently in real pain. RN Bonus's notes record that she seemed irritable and uncomfortable. RN Bonus gave evidence that Ms McIlquham appeared to be in discomfort and had been moaning. So that she could be kept under better observation, at the initiative of RN Aston she was moved to a bed close to the nurses' station shortly after 0100 hours.

29. Despite having been treated with strong analgaesia, she remained in so much pain and was so agitated that nurses found it very difficult to take routine observations of her vital signs, especially blood pressure. This may have resulted in another lost opportunity to assess the nature of Ms McIlquham's illness. RN Aston is a clinical

nurse specialist and is authorised and trained to take blood samples.[5] Partly because Ms McIlquham was so agitated and resistant to the observations, RN Aston thought it best if a doctor took blood for pathology tests rather than taking the risk of making an unsuccessful attempt herself, hurting and distressing Ms McIlquham in the process and possibly damaging her veins. Routine blood tests would very probably have indicated that she was suffering from a potentially serious bacterial infection.

30. Ms McIlquham was eventually seen shortly before 0300 hours on 19 May by Dr Tyler-Freer. The doctor's notes state that Michelle had been found by her mother sitting on the floor, screaming with spittle on her lips, holding her ears and rocking back and forth. She was keeping her eyes tightly shut. Dr Tyler-Freer then recorded *"Nil jerking, nil head/eye rolling, nil loss of posture, nil voiding. No post-ictal state."* She also recorded that Mrs McIlquham had told her that Michelle *"'was not herself meaning her current state of being irritable and obstructive. (Pt is usually compliant.)"*

31. On examination Dr Tyler-Freer noted that Ms McIlquham was lying in bed, keeping her eyes closed, rolling around and making deliberate "crying sound" vocalisations without tears or "apparent distress". It is not clear what Dr Tyler-Freer meant by the observation that Ms McIlquham was not in "apparent distress" because she was clearly agitated and moaning and, as Dr Tyler-Freer soon discovered, had a middle ear infection, a condition known to be painful. Dr Tyler-Freer noted that Ms McIlquham quietened when distracted. She was able to purposely direct movement of all limbs and had good co-ordination of hands with eyes closed. Ms McIlquham's eyes were opened forcibly and examined. Her pupils were equal and reactive to light. Her tracking was good and nil photophobia was observed.

32. Dr Tyler-Freer observed that Ms McIlquham's left ear had pus behind the drum but saw no light reflex, no perforation and no otitis extrema[6]. Given the findings of pus behind the eardrum indicating middle ear infection, the history recorded in the ambulance and triage notes, as well as that given by Mrs McIlquham, the drug chart which showed that McIlquham had been given a considerable amount of apparently ineffective pain relief, the progress notes recording her irritability and agitation, and

[5] Most nurses are not permitted to do so except as directed by medical staff or by standing orders made by, for example, senior clinicians in a hospital department.
[6] An infection of the external auditory canal.

Dr Abdile's and RN Aston's concerns earlier during the night, the diagnosis recorded by Dr Tyler-Freer of *"tantrum [secondary to] pain/frustration"* was, as she frankly conceded in her evidence, very wide of the mark and inadequate.

33. No differential diagnoses were recorded, no pathology tests were ordered and no radiography was ordered. Nor did Dr Tyler-Freer consider admitting Ms McIlquham or keeping her longer for observation. Why she took this approach I will come to in the following section of this decision.

34. Dr Tyler-Freer did, however, present the case (although not the patient) to Dr Govender as he was the senior doctor supervising her that night. It is common ground that Dr Tyler-Freer presented Dr Govender with a confident diagnosis of otitis media and a plan to discharge the patient with analgaesia, antibiotics and GP follow-up if needed. In her oral evidence she was very candid about the confidence with which she had put this to Dr Govender. He accepted the diagnosis and agreed with the plan. Dr Tyler-Freer did not ask him to review the patient. There is some inconsistency between the evidence of Dr Govender and that of Dr Tyler-Freer on the questions of whether she asked whether she should order blood tests and whether he intended to examine Ms McIlquham but they are difficult to resolve. In any case, no blood tests were ordered and Dr Govender did not physically review Ms McIlquham before her discharge. Another opportunity to challenge the original diagnosis and to recognise Ms McIlquham as a very sick patient was therefore lost.

35. After seeing Ms McIlquham, Dr Tyler-Freer wrote a discharge letter shortly before 0300 hours. In summary, the letter stated that *"the impression is of a tantrum brought on by unrelieved pain and distress from otitis media."* This was a reference to the event at home that had resulted in Ms McIlquham being brought to hospital. It is not clear from the discharge letter that Dr Tyler-Freer understood that Ms McIlquham had been brought in by ambulance because she wrote that "Michelle was brought to ED by her mother after hearing reports of Michelle 'having a fit' from other daughter." Whether this would have made any difference is uncertain because Dr Tyler-Freer relied primarily on the history she took from Mrs McIlquham (who was very distressed and had not witnessed the event in question) , the progress notes and her own examination of the patient. What is clear, however, is that she interpreted the history very differently from the way the triage nurse and

ambulance officers had, concluding that Ms McIlquham had never shown any signs of having had a seizure.

36. To her credit, at the inquest, Dr Tyler-Freer candidly admitted she had misinterpreted the signs and symptoms of seizure as well as those of Ms McIlquham's serious infectious illness and conceded that Ms McIlquham had had a seizure at home.

37. Nevertheless, in the early hours of 19 May 2009, she was confident of her diagnosis of Ms McIlquham's condition. In her statement of 31 July 2012 she asserted that Mrs McIlquham had expressed herself to be "happy" to take her daughter home and could cope with her.

38. Mrs McIlquham's evidence contradicted that of Dr Tyler-Freer. She stated that she had remained very concerned about Michelle's condition throughout her time in the department and had sought to make the point to nurses and Dr Tyler-Freer that something was seriously wrong with her.

39. In her oral evidence, Dr Tyler-Freer candidly resiled from her original statement. She conceded that Mrs McIlquham had never said that she was "happy" to take Michelle home. She admitted that she had merely assumed it to be the case. Indeed, in her evidence at the inquest she recalled that Mrs McIlquham had appeared very tired and unhappy and said that she had thought that both Michelle and Mrs McIlquham would be better off at home where they could rest properly.

40. But Dr Tyler-Freer's confident diagnosis, especially after its approval by Dr Govender, and the prescribing of further analgaesia, had the flow-on consequence of effectively negating any reconsideration of Ms McIlquham's condition or the signs of deterioration she displayed between being seen by Dr Tyler-Freer shortly before 0300 and Michelle and her mother leaving by taxi at about 0415 hours. RN Aston gave evidence that she had asked Dr Tyler-Freer why Ms McIlquham was being discharged rather than being kept in for observation and was told that Michelle had not had a convulsion but that her issue was behavioural.

41. By this time, Ms McIlquham had been in the Emergency Department for approximately seven hours. She had been treated with Nurofen and Panadeine

Forte during that time. She had also been recently prescribed Painstop and Phenergan. Panadeine Forte and Phenergan both have sedative effects. Lethargy is one of the signs of serious illness and Ms McIlquham was very lethargic by this time. She was reluctant to move. She had to be assisted out of bed and to be placed in a wheelchair to leave the department for the taxi-rank. Lethargy is, however, an ambiguous sign and in this case it was interpreted as a sign of exhaustion and sedative-induced drowsiness. In fairness to RN Aston who assisted Ms McIlquham to the taxi, those factors may in fact have contributed to Ms McIlquham's obvious lethargy.

42. But the Panadeine Forte had been administered some hours before she left the hospital and Mrs McIlquham's evidence is that Michelle spat out the Phenergan. Despite the administration of powerful analgaesia, Ms McIlquham's "behavioural issues" had not resolved during her stay in hospital as might have been expected if her problem was principally frustration caused by pain. In retrospect, it now seems obvious that a last opportunity to recognise Ms McIlquham as a very sick patient was overlooked when she was wheeled to the taxi.

43. Ms McIlquham was driven home by Mr Anthony Moussa. He described Ms McIlquham as being virtually helpless when she was placed in the car, with Mrs McIlquham and RN Aston struggling to put her in. She moaned and made jerky motions on the way home and could not get out at the end of the trip. He let Mrs McIlquham lift her out and did not help because, he said, "I didn't want to harm the patient in any way. She just looked so fragile."

44. At home, Ms McIlquham continued to complain of pain and her sister Sue thought she was "a bit sensitive to light". Sue continued to check regularly on Ms McIlquham from the time she got home at about 4.30am for the rest of the morning. She appeared to sleeping. At about 11am, however, Sue found Ms McIlquham blue and not breathing. An ambulance was called. The paramedics found her in cardiac arrest and applied emergency treatment before she was rushed back to the Emergency Department at Bankstown Hospital. It was, however, too late and she was pronounced dead at 11.58 that morning.

What went wrong?

45. Diagnostic errors are, unfortunately, very common in medicine. Two American experts on patient safety have written:

> *Diagnostic errors… are the leading type of medical error resulting in malpractice claims and are high on the list of patient-reported failures in health care. From a safety and reliability perspective, the diagnostic process is predictably error-prone. It relies heavily on human memory, lacks systematic feedback systems, is highly idiosyncratic with widespread practice variations, and is plagued with difficulties in sorting out the signal of rare serious diagnosis from the noise of common conditions.* [7]

46. Diagnostic errors and adverse patient outcomes may occur for a number of reasons.[8] In this case, Dr Tyler-Freer herself and Associate Professor John Raftos, who provided independent expert evidence, both attributed Dr Tyler-Freer's misdiagnosis to a cognitive error or mistake known as "premature closure". Put simply, this means that once Dr Tyler-Freer had taken a history from Mrs McIlquham and examined the patient she came to a conclusion that the real issues were middle-ear infection and a psychological response by Ms McIlquham to unremitting pain and, once she had done so, did not budge from that conclusion. In simple terms, she had jumped to conclusions.

47. One of the reasons Dr Tyler-Freer gave for her mistaken conclusion was that she had had personal family experience of people with developmental disability or delay. She said that she had applied her familiarity with some of the behaviours of her own relatives in her thinking about Ms McIlquham's signs and symptoms.

48. It appears that in taking the history from Mrs McIlquham, Dr Tyler-Freer's primary focus was on elucidating the nature and cause of the episode at home which had led to an ambulance being called, and was described by the ambulance officers as *"?seizure"*. Obviously the question whether Ms McIlquham had had a seizure was an important one for Dr Tyler-Freer to investigate. Why, however, she came to the confident conclusion that Ms McIlquham had not had a seizure, especially as she noted that Mrs McIlquham was not present at the time of the incident, is unclear.

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[7] Gordon Schiff and Lucian Leape "How can we make diagnosis safer?" *Academic Medicine* Vol 87, No 2 / February 2012 pp 135-138 at 135.

[8] For example, there may be process errors, such as a patient's pathology specimens being mixed up with those of another patient; there may be delays in diagnosis or missed diagnosis due to process errors, such as positive pathology results being overlooked; there may be no classic signs or symptoms of a serious illness or the signs and symptoms may be ambiguous; and investigations themselves may cause harm to the patient. (See Schiff & Leape at p. 136).

She had no history from Sue McIlquham (who was at home) but Mrs McIlquham told her that Sue had seen Michelle "having a fit". Dr Tyler-Freer obviously dismissed Mrs McIlquham's account but did not test it by speaking to Sue McIlquham as she conceded she should have. A simple phone call to the McIlquham house may have resulted in a very different and more accurate diagnosis.

49. Even on the evidence she had, Dr Tyler-Freer's index of suspicion, as she again conceded, ought to have been much higher. Despite the fact that Mrs McIlquham's account of the seizure was a second-hand and somewhat ambiguous description, taken together with the facts that the family had been so concerned that they had called an ambulance, and that the ambulance notes recorded that Ms McIlquham had been found in a post-ictal state and had had a GCS of 10/15 on arrival, the possibility of seizure, and therefore severe disturbance of the brain, could not have been excluded confidently without further investigation.

50. Other factors ought also to have raised her index of suspicion. Although Dr Tyler-Freer recorded that Mrs McIlquham described Michelle as "not being herself" she did not attribute this to an altered mental state but saw it as part of the picture of a developmentally delayed person's reaction to severe earache. As noted above, however, by the time Dr Tyler-Freer had seen Ms McIlquham she had been treated with strong analgaesia without any significant or obvious effect in reducing her distress for any lengthy period. This ought to have worked as a direct challenge to Dr Tyler-Freer's working diagnosis.

51. The "Swiss Cheese" model of accident causation is a model used in risk analysis and risk management of complex human systems. It likens complex human systems to multiple slices of Swiss cheese, stacked together, side by side. It was originally propounded by British psychologist Professor James Reason in 1990, and has since gained widespread acceptance and use in healthcare, in the aviation safety industry, and in emergency service organizations. It is sometimes called the "cumulative act" effect.[9]

52. The holes in the cheese slices represent individual weaknesses in individual parts of the system, and are continually varying in size and position in all slices. The system

9 See, for example, James Reason "Human error: models and management" *British Medical Journal* (2000); 320: 768

as a whole produces failures when all of the holes in each of the slices align, permitting (in Reason's words) "a trajectory of accident opportunity", so that a hazard passes through all of the holes in all of the defences, leading to a failure. (See Figs 1 and 2 below.)

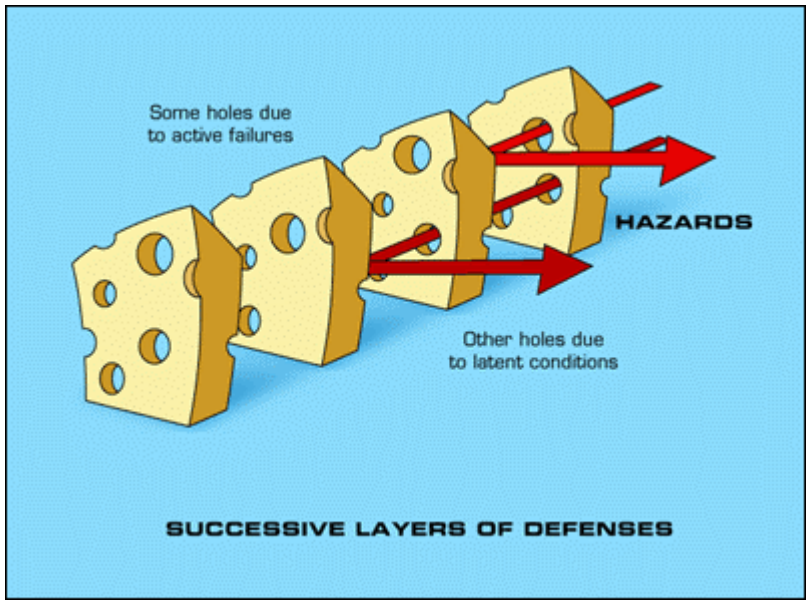

Fig 1. The defence layers work: holes do not line up

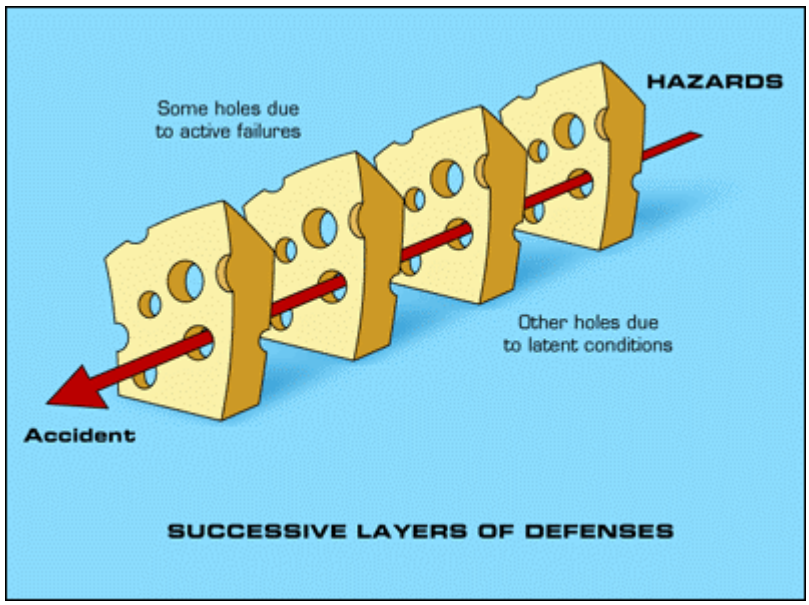

Fig 2. The holes line up: trajectory of accident opportunity[10]

In my view, the model is useful in explaining why the fact that Ms McIlquham was very sick was not diagnosed in the Emergency Department during the evening of 18

[10] http://patientsafetyed.duhs.duke.edu/module_e/swiss_cheese.html

and 19 May. A number of layers of defence were built into the system intended to ensure that seriously sick patients were recognised as such.

53. The first layer of defence is the general training of the medical staff. As Dr Brett Oliver, the Director of Medical Services for the Local Health District, told the court, doctors are trained from medical school to think in terms of differential diagnoses and to exclude the most serious potential illnesses or conditions before arriving at their ultimate diagnoses. In short, they are taught to keep an open mind despite their own initial impressions. Where the signs and symptoms could indicate a number of diagnoses, they are trained to challenge their own thinking with differential diagnoses. A certain degree of intellectual modesty is helpful to do this properly but fatigue, stress, inexperience and other human factors may and sometimes do adversely affect a person's capacity to make accurate judgments.

54. On the other hand, they are also trained, and experience teaches them, to recognise patterns of signs and symptoms. In most cases, that approach is reasonably accurate and focuses the clinician on the main problem(s) quickly. In this case, Ms McIlquham had had a history of middle ear infections and chest infections. Middle ear infections are quite common and are well-known to be painful. In such cases, a mental short cut or heuristic known as "availability" may come into play. This is the tendency to judge the likelihood of an event by the ease with which relevant examples come to mind. Ms McIlquham's past history, coupled with the presence of pus behind her eardrum and Dr Tyler-Freer's general training and experience, quickly brought a diagnosis of otitis media to her mind. And that impression was, of course, correct insofar as it went. Everything she thought she saw in this clinical picture tended to confirm this impression.

55. Unfortunately, she excluded from consideration some factors that did not fit the picture she thought she was seeing, such as the possibility that Ms McIlquham had suffered a seizure earlier that night. She went on to make the mistake that has been described as "anchoring"[11] – she did not consider the multiple possibilities the signs and symptoms suggested, but firmly attached or "anchored" herself to the working diagnosis of "otitis media" and a behavioural reaction to the pain it caused.

[11] See Groopman, Jerome *How Doctors Think* Scribe, Melbourne (2010) pp 64-65; Kahneman *Thinking Fast and Slow* Penguin, London (2011) pp 425-430 and passim.

56. Although it was not formally considered as an issue during the inquest, Ms McIlquham's death also possibly raises the question of fatigue and its effect on clinical judgment and decision-making. By the time she was seen by Dr Tyler-Freer, and by the time her case was presented to Dr Govender, both doctors had been on duty for several hours in a very busy department. An American emergency specialist, Associate Professor Arjun Chanmugan, has commented:

> *One of the most singular aspects of this specialty is the density of decision-making that must take place during a shift… In many cases, the way emergency physicians make decisions early in a shift is somewhat different than those made at the end of a shift… The ability of one individual to succeed in high-density decision-making is finite…*[12]

57. He also commented that towards the end of a shift, there is a greater tendency among emergency physicians to use intellectual shortcuts and that, therefore, there is a greater need for conscious effort to be directed towards thoroughness.

58. The second main line of defence against misdiagnosis in a situation like Ms McIlquham's is for doctors to pay attention to those who know the patient best. If a parent says that a child is sick, this should be a red flag for any doctor whether or not that doctor knows the patient. Nurses who spend a lot more time than doctors observing patients in Emergency Departments and wards are more likely to observe significant but sometimes subtle changes in a patient indicating deterioration. If nurses (or, as in this case, another doctor) says that a patient is very sick, an examining doctor ought be very cautious in disregarding the warning or impressions. In hindsight, it is clear that medical staff gave insufficient attention and weight to Mrs McIlquham's concerns and those raised during the evening, especially by Dr Abdile and RN Aston.

59. A third layer of defence ought be the clinical record starting with the ambulance triage notes. (If the patient had a previous history of admissions that would also be potentially relevant.) It would be impossible in a busy clinical environment for doctors and nurses to record every conversation or every observation of a patient but significant conversations or observations ought be. Observations and notes record slices of time. If a patient is deteriorating and a good record has been kept of

[12] "Understand decision-making fatigue and how it influences your clinical judgment" in Mattu, A, et al (eds) *Avoiding Common Errors in the Emergency Department* Wolters Kluwer, Philadelphia 2010 pp 175-176.

the patient's progress, it is likely that the downward trajectory will show up in the notes and call attention to the patient. On the other hand, if notes are not made regularly or when significant observations are made, patients may decline unnoticed until it is too late.

60. In this case, regular observations of Ms McIlquham's vital signs were not taken after about 0100 hours on 19 May and no notes were made of the observations of Dr Abdille that Ms McIlquham was "very sick" nor of the fact that she was not apparently responding to analgaesia. Nor were GCS scores taken or mental state assessments made on a regular basis despite the fact that she had been brought in by ambulance having suffered a possible seizure.

61. A fourth layer of defence in this situation should be the standard investigations that should follow a patient being brought into an Emergency Department. Dr Oliver was not prepared to concede that blood tests or CT scans should automatically be ordered in a case like this soon after the patient's arrival. On the other hand, he was firmly of the opinion that Ms McIlquham should have been physically assessed by a senior doctor whose responsibility it would have been to order the appropriate investigations. The senior clinician's assessment would have constituted a fifth layer of defence. Dr Oliver agreed, however, that, in a case like Ms McIlquham's, senior clinicians would almost always have included blood tests and a head scan. He remained insistent that it should be for the clinician to make those decisions.

62. In this case, however, a senior doctor did not examine Ms McIlquham soon after her arrival at the Emergency Department as would ideally have happened, nor at any later stage during the night. Nor were standard investigations ordered at an early stage to assist the clinicians in diagnosing the patient's true condition. Two lines of potential defence against misdiagnosis were therefore penetrated simultaneously.

63. A sixth defensive line in Emergency Departments is the supervision of less experienced or skilled clinicians by doctors with greater skill and experience. Human beings learn from experience to recognise patterns. Simply because they have seen fewer cases, junior doctors are less likely than their more experienced colleagues to recognise the subtle signs of serious illness. For the same reason, their mental menus of differential diagnoses are likely to be considerably slimmer than those available to more experienced senior clinicians. Dr Govender, as Dr Tyler-

Freer's supervisor, should have been more challenging of her assessment and should have tested her diagnosis more thoroughly. Ideally, given that Ms McIlquham had been triaged as a Category 3 patient – suffering a potentially life-threatening illness – he would have physically examined Ms McIlquham himself with an open mind and applied his own differential diagnosis. This may not have affected the outcome but a chance was lost when he did not do so.

64. Finally, the in-house protocols, guidelines, checklists and specific Emergency Department training of nursing and medical staff should operate as a final safety net or line of defence against serious clinical error. All hospitals have protocols as guidance for nursing and medical staff in dealing with various contingencies and issues that arise. Checklists and forms are also constantly being developed and amended to help improve practice. They generally operate as aides memoire to ensure that vital steps are not omitted and that steps are taken in an appropriate or correct sequence. In-house training is also provided in most hospitals but especially in teaching hospitals such as Bankstown Hospital.

65. It is well-known, however, that in any complex organisation, voluminous guidelines and protocols tend to sit unread in large folders or on organisational intranet servers, rarely referenced unless something goes wrong. Dr Tyler-Freer, for example, was aware of the existence of the Bankstown Hospital's meningitis protocol but was unfamiliar with its content. It is unrealistic to think that doctors working long hours in very busy Emergency Departments will often have time to make close studies of large, complex documents during their shifts. There is, however, a place for checklists or short guidelines that act aides memoire, especially for less experienced practitioners, to prompt memory and thinking about certain types of problems or to ensure that patients are investigated correctly and that their treatment is carried out in the correct sequence (if that is critical).

66. While signs and symptoms and other clues or indicators of serious illness may be ambiguous or unspecific, they will almost always be detectable during a patient's presentation to an emergency department. The key is ensuring that the signs are looked for and, critically, that signs of deterioration of the patient are picked up.

67. Such "red flags" might include (as in this case):

- A patient being sent to hospital by another healthcare professional or being brought in by ambulance.
- A patient presenting at hospital having been seen recently by another doctor (GP or hospital) in relation to the same condition.
- Repeated questions or protests by patients, parents or carers that the patient is sick or "not normal" or patients (or carers) being "difficult", ie advocating for greater attention to be paid to signs or symptoms.
- Severe and unrelieved pain (especially if the patient has recently received analgaesia.
- Signs of infection (fever, lethargy, a history of suspected seizure, otitis media, sinusitis, etc)
- A patient has difficulties in walking without assistance.
- A patient has low or no urine output over an extended period.
- A patient falls within a high-risk category, such as being developmentally disabled.[13]

What should have happened?

68. Two independent experts provided reports concerning the care and treatment Ms McIlquham received. To a large extent, their evidence demonstrates what should have happened when Ms McIlquham presented at Bankstown Hospital.

69. Professor Lindsay Murray, a consultant emergency physician and clinical toxicologist, in a report dated 10 April 2012, stated that:

- Bacterial meningitis should have been included as part of the differential diagnosis for Michelle's presentation to hospital on 18 May 2009. It is potentially lethal if not treated promptly. It would have directed investigations to confirm or exclude the diagnosis and IV antibiotics would have been administered if there were any delays in diagnosis.

[13] See generally Gordian Fulde "The seriously ill patient: tips and traps" in Fulde, GWO (ed) *Emergency Medicine* (5th ed) Elsevier, Sydney 2009 350-357 at 351.

- The history of otitis media leant weight to this possibility. Acute bacterial meningitis is a recognised complication of otitis media.

- Given the presence of headache, fever and mental obtundation[14], bacterial meningitis could not be excluded purely on history and examination.

- Signs may have been obstructed by the existing antibiotic treatment, and by her developmental delay that may have made it difficult to identify an altered mental state.[15] However, given Mrs McIlquham's account that Michelle was very different from normal, he thought it would have been "brave" indeed to attribute her signs and symptoms to otitis media without further investigation.

- Lumbar puncture should ideally have been performed, but would have been technically difficult without sedation.

- If a lumbar puncture was delayed or not taken, blood for blood culture should have been taken and IV antibiotics administered immediately afterwards.

- Irrespective of diagnosis, Professor Murray was concerned that Ms McIlquham was discharged at 4 am whilst in distress and whilst staff were having difficulty in controlling her behaviour. It was even more concerning if she was threatened with security.

70. Dr Tyler-Freer's evidence was that she did, in fact, consider meningitis but found no classic signs. This raised her confidence in her diagnosis of otitis media and behavioural issues to do with the related pain of a middle ear infection.

71. The difficulty with this approach is that not all sufferers of bacterial meningitis exhibit the classic signs associated with the disease (stiff neck, photophobia, petechial rash, Kernig's Sign, Brudzinski's Sign). A NSW Health Clinical Update, tendered in the inquest, warns medical practitioners that "less than half [the patients] with meningitis have the classic triad of fever, stiff neck/headache, and altered mental status, although all will have at least one of these." In discussing the possibility of the serious complications of sinusitis (from which, incidentally, Ms

[14] A reduction in mental alertness; mental dullness.
[15] Analgaesia, such as paracetamol but especially Panadeine Forte can also significantly mask symptoms.

McIlquham suffered periodically), the Clinical Update also warns the complications "will be overlooked if a dismissive approach is taken".[16]

72. Dr Tyler-Freer also gave evidence that she had not intended to use security to eject Ms McIlquham from the hospital but that her reference was to using the security officers to assist Mrs McIlquham with Michelle. She later apologised to the McIlquham family for the misunderstanding that arose concerning the use of security guards.

73. In his report of 8 June 2012, Associate Prof John Raftos expressed the opinions that:

- Ms McIlquham would probably have survived if her otitis media and the complications had been appropriately diagnosed and treated at the Emergency Department at Bankstown Hospital on 18-19 May 2009.

- The differential diagnoses considered on her arrival should have included meningitis – viral, bacterial or fungal – and this was one of the more likely differential diagnoses. Standard Emergency Department investigations would have included CT brain scan, white cell and neutrophil count, c-reactive protein test (CRP), erythrocyte sedimentation rate test (ESR) and blood culture. Standard Emergency Department care would have also included consideration for lumbar puncture. Hourly neurological observations should have been performed for at least 4 hours.

- The diagnoses of Dr Tyler-Freer as set out in the notes and discharge summary were inappropriate and incorrect.

- It is never appropriate to discharge a patient from the Emergency Department in a wheelchair.

- Ms McIlquham should not have been discharged without determining the cause of her seizure and headache. The only appropriate medical course of action would have been to perform further investigations.

- An instruction should have been given to Mrs McIlquham to bring Michelle back to hospital if her headache persisted or her level of consciousness deteriorated.

[16] "Clinical update No 284" 23 August 2012 – see www.heti.nsw.gov.au/clinicalupdates

- Observations should have been performed hourly in the Emergency Department.

- Doctors treating patient with intellectual disability should have a lower than normal threshold for performing investigations, and if there is any doubt about diagnosis the patient should be admitted for observation.

- Had there been a CT brain scan overnight on 18-19 May it would have shown extension of the acute inflammatory infiltrate into the adjacent bone marrow, blood test results would have shown elevation above normal in the white cell count and neutrophils, CRP would have been raised in the range consistent with serious bacterial infection and this would have lead to a diagnosis of complicated otitis media and admission with appropriate IV antibiotics. This would probably have prevented Michelle's death.

74. In his oral evidence at the inquest, Professor Raftos was considerably more circumspect in his estimate of Ms McIlquham's chances of survival. He said that a seizure is a "fairly late sign" of meningitis, meaning that by the time she had suffered it the disease was at a relatively advanced stage. He was unable to be confident that, even if the hospital undertaken all the investigations and treatments he regards as standard, she would have survived. Nevertheless, he thought that had she been admitted and put on intravenous antibiotics she possibly had a 50 per cent chance of survival.

75. Professor Raftos also made two very important points about patients suffering from developmental disability. First, they have a higher mortality rate. This is because they tend to come to hospital later than other very sick patients because they often have greater difficulty in expressing their symptoms as articulately as others. Second, that consequently, because developmentally disabled patients are at higher risk, hospitals should pay special attention to them.

76. He also emphasised that it was more important in the first instance for medical and nursing staff to identify the sick or toxic patient than to make the diagnosis of meningitis. This is because, whatever the results of investigations ultimately show, the patient will be appropriately observed and antibiotic treatment can be started in timely fashion.

77. Professor Raftos also told the court that at the Sutherland Hospital where he holds a position as Senior Specialist in Emergency Medicine, junior doctors in the Emergency Department are required to make notes of their differential diagnosis. This not only provides a record of the doctor's impressions of the patient but can act as a prompt to others and enables supervisors more easily to provide guidance to less experienced medical staff. Dr Tyler-Freer's notes do not include her differential diagnosis or exhibit her reasoning process.

78. Professor Gordian Fulde, the head of the Emergency Department at St Vincent's Hospital for many years, has suggested a number of "Emergency Department 'Laws'", the first of which is:

> *All patients are trying to die before your eyes. You must always think in terms of worst case scenarios, eg, cardiac infarcts, meningitis, subarachnoid haemorrhage, pulmonary embolism. This is even more vital where early specific treatment will cure and prevent death. It may seem dramatic, but if you treat or exclude these serious illnesses early, further management of the patient is often very straightforward…*[17]

79. He also recommends "At all times, play it safe. Be suspicious of any complication."[18] In this case, Ms McIlquham had been seen earlier in the day by Dr Tsang and been treated for otitis media. Yet her symptoms had not abated despite analgaesia and antibiotics having been begun. This might have suggested that complications were arising and that therefore the earlier diagnosis needed to be reassessed.

80. Finally, the diagnosis of "tantrum" was completely inappropriate both because it was offensive and because it does not designate a medical condition. It describes a behaviour that may or may not be a sign of a medical condition. Dr Tyler-Freer gave evidence that, when writing her discharge letter, she had used a drop-down menu and that this description had appeared to her to be the most appropriate for the case at the time. It is not clear why Dr Tyler-Freer could not simply have entered "otitis media" or "middle ear infection". In any event, she told the inquest that the drop-down menu had been altered to prevent a recurrence.

[17] Fulde at 352.
[18] Fulde at 351.

Has the system improved since Ms McIlquham's death?

81. Evidence was given that since Ms McIlquham's death the Local Health District and Bankstown Hospital (and NSW Health more broadly) have implemented a number of changes that should improve Emergency Department recognition and care of very ill patients.

82. Dr Oliver provided an outline of guidelines, policies, training programs and changes to practice implemented at Bankstown Hospital since Ms McIlquham's death. He referred to programs and policies designed to address the supervision of junior medical and nursing staff, the issue of escalating the care and treatment of patients when family and nursing concerns are raised, the issue of recording observations of patients prior to discharge, and training of junior medical officers on altered mental state and the use of antibiotics. He also noted that an audit of triage category 3 patients had been conducted in 2009 and that a number of NSW Health programs had been implemented, including the Sepsis Project, the Between the Flags program (designed to improve early recognition of deteriorating patients) and DETECT (standing for Detecting Deterioration, Evaluation, Treatment, Escalation and Communicating in Teams), an education program forming part of the Between the Flags program.

83. Among the policy documents provided by Dr Oliver to the inquest was the Bankstown Hospital Guideline for Emergency Department supervision. This was issued in February 2010.

84. In a section concerning "Emergency Department Patient Assessment and Review", it requires, among other things, that "specific high risk patients", who include developmentally delayed persons and patients who have experienced altered mental status, "be discussed with the Senior Medical Officer prior to discharge".[19] Interns (ie, first year doctors) must discuss all their patients with a senior doctor before ordering blood tests and other investigations and before discharging the patient. The guideline does not require that developmentally delayed patients

[19] "Emergency Department Supervision" BNK_GL2010_001. "Specific High-risk patients" as defined in the protocol include patients with altered mental state (any age); children under 5 years old; repeated presenters (with the same condition) within days of last presentation; developmentally delayed patients (especially those without carers present); Dept of Community Services clients; sexual assault victims (or alleged victims); all patients over 75 years old; patients with significant disabilities.

actually be seen and assessed by a Senior Medical Officer. This guideline is due for review in February 2013.

Can further improvements be made?

85. In my opinion, recommendations can be made that could improve the assessment and care of very sick patients, especially those, such as developmentally delayed patients, who may have difficulty communicating their histories and symptoms articulately.

86. Counsel Assisting, Ms Stern SC, circulated a number of draft recommendations to interested parties during the inquest. During Dr Oliver's evidence, he made the point that some of them may be made more appropriately to NSW Health than solely to the Local Health District. Submissions have now been received both from the Local Health District and NSW Health.

87. The Local Health District and NSW Health (whichever is the more appropriate body) were invited to consider implementing the following clinical policies or guidelines:

(a) ***That there be a nursing assessment of all patients in triage categories 1, 2 and 3 before a patient is physically discharged from the hospital if that has not taken place within 30 mins of their last review.***

88. The rationale for this recommendation is that patients may deteriorate undetected if observations or mental state assessments are not taken for lengthy periods. In this case, the last recorded nursing observations took place at about 0100 hours and Ms McIlquham was not seen by Dr Tyler-Freer until nearly 0300 hours. It was more than an hour after that assessment when she physically left the Emergency Department. During that hour she was almost certainly deteriorating.

89. Dr Oliver argued that the patient had been discharged earlier, ie, when Dr Tyler-Freer had finished her discharge letter and provided it to Mrs McIlquham. So that the process could be properly managed, he argued that the keys were that (a) there be a proper discharge process and (b) that once a patient is discharged, he or she can represent to the hospital if there is any concern about deterioration.

90. He also made the point that patients often have to wait to be picked up relatives or carers once they are discharged and that it would place an undue burden on nursing staff to be attempting to take observations of patients in the waiting room and other areas where people bide their time for their pick-ups. He opposed any diversion of resources in this way.

91. While it is true that Ms McIlquham had been formally discharged by Dr Tyler-Freer, she had in fact stayed within the Emergency Department *in a bed* for more than an hour afterwards. One of the reasons seems to be that Mrs McIlquham was very reluctant to leave because she perceived that Michelle was very sick. Ms McIlquham was deteriorating and very lethargic. She had also received Panadeine Forte which probably sedated her to some degree.

92. NSW Health submitted that the suggested approach is impractical and reiterated Dr Oliver's argument that the focus should be on making an appropriate discharge decision and improving the quality of that decision-making process. The Department suggests that "this might be improved by senior medical review of the decisions of junior doctors for high-risk patients."

93. While I accept these propositions as far as they go, they do not necessarily address the specific issues that that arose in this case (and may in future).

94. NSW Health did not make the argument that Dr Oliver advanced that this proposal would divert resources and therefore reduce the overall efficiency of emergency departments but this may have been implied by the submission that the measure would be impractical. Given that the number of patients concerned during any given shift is unlikely to be significant, it is not clear why the construction of this further line of defence against a mistake would be impractical, especially as nurses are said by NSW Health to be empowered "to raise concerns" about patients and to escalate their treatment.

95. It is standard procedure on discharge for patients or carers to be told to come back to the Emergency Department if the patient deteriorates or does not improve. This is an acknowledgement that, even with all reasonable care being taken at presentation and discharge, sometimes the gravity of a patient's condition is not correctly or fully identified on first assessment.

96. In a case such as this, in which a "specific high-risk" patient on presentation was assessed as being in triage category 1, 2 or 3, and the patient has remained in an Emergency Department bed for more than 30 minutes since being last medically assessed or having observations taken, and is yet to be physically discharged, it does not seem unreasonable for a final assessment of the patient to be made before she or he physically leaves the confines of the department, either to go to the waiting room or to leave the hospital.

97. This should, in my view, be the default position, especially where a carer raises concerns that the patient may be deteriorating or may not, in fact, be well enough to be discharged. The number of patients needing such an assessment is likely to be small – few patients are likely to remain for lengthy periods in emergency departments and of those, only a proportion are likely to be "specific high-risk"-type patients.

98. Professor Raftos supported a proposal of this nature in general terms. I will amend the recommendation so that it applies only to "specific high-risk" patients (as defined in the Bankstown Hospital Emergency Department protocol who are triaged in Categories 1, 2 or 3.

99. (b) ***That there be a nursing assessment of any patient who requires physical assistance to be transferred from their bed to their mode of transport on discharge unless it is clear that the need for physical assistance was assessed by a doctor at the time of the clinical decision to discharge*.**

100. Difficulty in mobilising independently can be a significant sign of deterioration in a patient. In this case, it appears to have been assumed that Ms McIlquham's difficulties were principally due to her tiredness, and drowsiness induced by her analgaesia as well as possibly to her emotional reaction to pain. A final nursing assessment of such a patient shortly before discharge may operate as another level of defence against a deteriorating patient being discharged prematurely. Dr Oliver raised the same objection as to the previous draft recommendation while Professor Raftos supported it.

101. NSW Health did not directly oppose the draft recommendation. It argued, however, that the draft recommendation was too specific. Instead it proposed broadening and linking the recommended practice to current practice by fitting it within the

"Between the Flags" program which is designed to alert nursing and medical staff to signs of deterioration.

102. I have three difficulties with NSW Health's response on this topic. First, as I understand it, the program trains NSW Health staff to look out for various signs. The signs do not, however, include, either as a late or early warning of deterioration, a patient's increased difficulty in ambulating. It was therefore not clear precisely what NSW Health was proposing.

103. Second, the BTF program is designed primarily for the protection of inpatients and patients being attended to in emergency departments. Ms McIlquham had not been admitted to a general ward and was discharged from the Emergency Department. And, again, the concern Counsel Assisting sought to address with the draft recommendation relates to the patient at the point of physical discharge from an emergency department. Dr Murray was very concerned that Ms McIlquham had been discharged at 0400 hours while in distress. Professor Raftos declared categorically that it is always inappropriate to discharge a patient from an emergency department in a wheelchair [unless the presenting condition, such as a broken leg or torn Achilles tendon, explains the requirement for a wheelchair].

104. Third, RN Aston is a highly experienced and competent clinician who, earlier in the night, had pressed the doctors to assess Ms McIlquham and, on her own initiative, had raised her priority on the waiting list. Yet, once the patient had been given a medical assessment been formally discharged, RN Aston clearly took the view that Ms McIlquham needed assistance to the taxi but did not challenge the medical assessment and discharge decision. I doubt that she even thought to do so.

105. I make no express or implied criticism of her for this. Had she thought Ms McIlquham was very ill, I do not doubt that she would have sought further medical review. In all the circumstances, it was reasonable for her to accept that Dr Tyler-Freer had seen the patient, that Dr Govender had discussed the patient with Dr Tyler-Freer and that the medical officers had taken into account all relevant aspects of her condition in reaching a diagnosis and concluding that the patient could be discharged. Diagnosis is not the task of nurses. I accept that they should not have to accept responsibility for second-guessing junior doctors but can make an invaluable contribution to diagnosis by bringing their observations to the notice of doctors.

106. If discharge decisions were universally foolproof, there would be no need for this proposed practice or the previous one. I accept, as NSW Health has argued, that the primary focus should be on identification of signs of deterioration and on appropriate discharge procedures. Nevertheless, it may be that some significant signs are only observed late, even *after* formal discharge. It does not appear impractical or inconsistent with the goals spelled out by NSW Health to emphasise in discharge protocols and nurses' and medical officers' in-house training that this may occur. It is, however, one thing to speak in general terms about "deterioration"; entirely another to alert nurses and junior doctors to specific signs of deterioration (as the BTF program does). I propose therefore to press the proposed recommendation with the alternative that NSW Health or the Local Health District (as the case may be) consider amending its standard emergency department discharge protocols to include a warning that if a patient requires physical assistance to leave the Emergency Department they ought not be discharged unless it is clear that the need for physical assistance was assessed by a doctor at the time of the clinical decision to discharge.

(c) ***That a guideline that all patients with a presenting complaint of seizure, but who do not have a previous history of seizures, should be assessed by a senior doctor in the Emergency Department, should have a blood test and should be considered for CT scanning, (if possible prior to the closure of the radiology department if they present during the evening) be implemented.***

107. Dr Oliver agreed that such patients ought be assessed by a senior doctor but opposed the suggestion insofar as it would impose a blanket rule that a blood test (Full Blood Count) or any other investigations, including CT scans, be ordered. He argued that such decisions ought be left to the clinical judgment of the senior doctor or it effectively defeated the purpose of having the senior doctor assess the patient. He also argued that the imposition of inflexible rules can lead to unforeseen consequences. He said that neurology protocols ought be followed in such cases and that in 99 per cent of cases an FBC would be ordered. He stated that, while he agreed with the concept of clinical guidelines, he opposed strict rules being applied in a clinical setting.

108. I understand Dr Oliver's reservation. It was never the intention of the proposed recommendation to impose inflexible rules on senior clinicians as to how they

exercise their clinical judgments. Nevertheless, it seems to me that Dr Oliver's approach that only senior doctors can make such decisions would itself be an inflexible rule. Professor Raftos agreed with the thrust of this recommendation. He stated that this should be standard practice in emergency departments.

109. Ideally, a senior doctor ought assess a triage category 3 patient soon after his or her arrival (i.e. within 30 minutes) and make the relevant clinical decisions. If, however, that is not possible because, as was the case on 18 May 2009, the senior medical officers in the emergency department are heavily engaged with higher category patients, it would appear to make sense for a blood test to be ordered by, for example, the Nursing Unit Manager so that the delay is minimised. In my view, if a senior doctor is unable within 30 minutes to assess a category 3 patient who presents with a history of first seizure, the default position ought be that an FBC, and any other tests that ought be included in a standard battery, should be ordered. The numbers of patients affected is not likely to be large and the time saved may be critical.

(d) ***That all patients presenting with a GCS score of less than 15 should have their GCS assessed on admission and prior to discharge.***

110. Dr Oliver maintained his reservations about this proposed recommendation for reasons previously expressed. Professor Raftos, on the other hand, was supportive. NSW Health accepted that the proposed recommendation was "reasonable" but suggested that it be amended to read, "All patients presenting with a GCS of less than 15 should be returned to their baseline (i.e. usual) level of consciousness prior to discharge".

111. This may be a distinction without a difference but not necessarily. The rationale for the recommendation is that a GCS assessment shortly before discharge may pick up signs of deterioration or the masking of signs of deterioration due to analgaesia.

(e) ***That all patients with developmental disability should be assessed by a senior doctor before discharge.***

112. Once again, Dr Oliver cautioned against the imposition of a blanket rule that may lead to unforeseen consequences. He said that such a rule could lead to developmentally delayed patients having to wait very long times to be discharged

despite having only minor conditions or injuries and being clearly stable. Professor Raftos placed his emphasis more on the issue of communication and the fact that, for reasons previously discussed, developmentally delayed patients have a higher morbidity and mortality rate. He therefore emphasised the need for even greater care in reviewing such patients who are at higher risk than the average patient.

113. Dr Oliver has expressed a reasonable concern but it should not be overstated. Triage category 1 and 2 patients will almost invariably be assessed and treated by senior doctors due to the gravity of their conditions. They are also often admitted to a general ward or Intensive Care Unit. Patients in category 3 can also be very sick and deteriorating but are much more likely to be discharged directly from an emergency department. On any given day, it is unlikely that a senior doctor would be required to assess large numbers of developmentally delayed patients.

114. It is self-evident that a senior doctor, bringing his or her greater experience, is more likely to pick up signs and symptoms or aspects of a patient's history that may have been missed, or to interpret them more accurately if they are ambiguous, than a junior doctor. This is especially important when a patient has difficulty communicating due either to his or her presenting condition(s) or developmental delay or a combination of both. At least in relation to developmentally delayed patients in triage categories 1 to 3, the precautionary principle suggests that they should be reviewed by a senior doctor before discharge. On the other hand, I accept the NSW Health submission and Dr Oliver's argument that it is unnecessary for a senior doctor to assess patients with minor complaints before discharge. I propose to make a recommendation relating only to patients in triage categories 1, 2 and 3.

(f) ***All requests by nursing staff for a medical review should be documented in the clinical progress notes with documentation of the reasons for the request and of whether or not medical review subsequently took place.***

115. This proposed recommendation arises from the fact that RN Aston's request for a CT scan was not directly documented. (I note also that Dr Abdile's request for a senior doctor to review Ms McIlquham was not documented but ideally should have been.) Bankstown Hospital has a policy directive concerning nursing documentation.[20] It states that "all interventions and incidents (eg, reporting concerns to the medical

[20] "Nursing Documentation in the Emergency Department" BNK_PD2009_063

officer, NUM/Team Leader, etc) must be documented in the patient's clinical record as soon as possible together with the actions taken to resolve the problem." It is therefore unnecessary to make the proposed recommendation but this inquest will no doubt act as a reminder of the policy directive.

(g) ***That there should be an annual education of all clinical staff in the Emergency Department in relation to the detection of signs of toxicity in patients presenting to the Emergency Department and tests or investigations which can be performed to identify toxicity in patients.***

116. The Local Health District produced evidence of the clinical education program run at Bankstown Hospital (which is a teaching hospital) for junior medical officers. In 2011 it included sessions on "shock and the septic patient", "seizures", "Between the Flags" and other directly relevant topics. Also produced was a sample of the nursing education program calendars for 2010, 2011 and 2012 which also covered a number of relevant issues such as "escalation", "patient safety" and "sepsis". The clinical education of junior medical staff and nurses in the Bankstown Emergency Department appears to have been carefully calibrated to cover a suitable curriculum. On the other hand, given the emphasis of programs such as "Between the Flags" and "DETECT" on identification of the very sick patient, it would be useful to incorporate a specific session on detection of signs of toxicity in patients and the investigations that can assist identify toxicity.

117. NSW Health supported the recommendation with the proviso that it should relate to "detection of signs of risk factors, signs and symptoms of sepsis in patients presenting to the ED." It further suggested that the clinical education should include "information on tests or investigations that can be performed to identify sepsis in patients and subsequent management with rapid intravenous antibiotics, fluids and source control." It emphasised that the Clinical Excellence Commission's "Sepsis Kills" program is being implemented in emergency departments across NSW. I accept this proposal.

118. Counsel for the McIlquham family supported these proposed recommendations and added the suggestion that the Bankstown Hospital Emergency Department adopt the practice of the Sutherland Hospital Emergency Department and ***require documentation of a junior medical officer's differential diagnosis.*** This strikes

me as a constructive approach for the reasons discussed previously. I propose to recommend that the Local Health District consider implementing such a practice.

119. Dr Oliver was questioned at some length about possible gaps in the Bankstown Hospital Emergency Department supervision guidelines. Some draft recommendations above have touched on them. On closer consideration of Section 1 of the supervision guidelines, "Emergency Department Patient Assessment and Review", it appears to me that further revisions ought be considered.

120. Section 1.4 requires junior medical officers to complete a Presentation Plan concerning their patients within 30 minutes of a doctor seeing the patient. The guidelines do not specify the content of the Presentation Plan or annex a copy. It may be that this is dealt with in other policies or guidelines. I assume that a similar practice was required in May 2009. Dr Tyler-Freer did not present her differential diagnosis to Dr Govender and this does not appear to have been queried by Dr Govender. If the Presentation Plan was required to include the differential diagnosis, the supervising senior doctor would understand immediately the reasoning of the junior doctor and be prompted to raise pertinent questions.

121. Section 1.5 requires that interns present their patients to a more senior doctor before ordering blood tests, radiography and other investigations. This is reasonable as far as it goes. Junior doctors ought not be ordering unnecessary tests and can learn from presenting their patients to more experienced doctors before tests are ordered. Nevertheless, this raises a concern that investigations that may make a crucial difference in a small number of cases could be delayed if that rule were applied inflexibly.

122. Section 1.6 requires that a senior doctor make notes when requested by a junior doctor to review a patient. I suggest that the Local Health District should consider also requiring senior doctors to make short notes (or have the junior doctor do so) when Presentation Plans are produced to them.

123. Section 1.7 requires that junior doctors and nursing staff make requests for review by senior doctors in a timely fashion. It does not place a reverse onus on the senior doctor(s) to conduct such reviews in a timely manner. No doubt there will be occasions when senior doctors are concentrating their efforts on category 1 and 2 patients and may not be able to take time out to review other patients for an

extended period. Nevertheless, if clinical exigencies allow, there seems to be advantage in requiring timely reviews. I will recommend that the Local Health District consider revising this section.

124. Section 1.8 deals with representations at the Emergency Department. It requires that if a patient represents to the department within 48 hours of being discharged, a registrar or staff specialist should see the patient. That is a very good guideline so far as it goes. In my view, however, the Local Health District should consider amending it to require that if a patient has presented at the Bankstown Hospital or *any other hospital emergency department,* or has been seen by a GP within 48 hours in relation to the complaint or condition with which the patient presents at hospital, the patient should be seen by a registrar or staff specialist. In my view, special attention ought be paid to a patient who has been brought in by ambulance having been seen at an Emergency Department or by a GP within the previous 48 hours concerning the presenting condition.

125. Finally, if, as has been discussed above at paragraphs [53]-[57], fatigue may have been a factor which diminished the quality of the clinical judgments made by Dr Tyler-Freer and Dr Govender, the Local Health District should address this issue. Professor Chanmugam offers three practical suggestions from his experience in US emergency departments:

126. First, the emergency physician should prepare mentally for his or her shift by setting aside distractions that reduce the capacity to focus.

127. Second, the mental preparation for the shift should include the consciousness of the fact that clinical judgment and decision-making is likely to be impaired by fatigue and the need therefore to direct a conscious effort towards thoroughness, especially in listening to patients, carers and nursing staff with care.

128. Third, emergency physicians should consciously address their fatigue, hunger and bodily needs. He stresses the priority to be given to rehydration.

129. I therefore propose to recommend to the Local Health District that it consider ***including in the in-house training given to Emergency Department staff (medical and nursing) a regular session on mental and physical preparation for a shift and self-care during a shift.***

130. Related to this, I also propose to recommend that the Local Health District ***emphasise to Nursing Unit Managers and to senior doctors supervising Emergency Departments that the efficiency of their staff will be improved by attention being paid to self-care, especially rehydration, during shifts***.

131. Finally, on this point, I propose to recommend that the Local Health District consider developing ***a poster or notice that can be placed in Emergency Departments warning staff of the effects of fatigue and urging staff to rehydrate regularly and eat light meals during the shift.***

Conclusion

132. In a statement to the court, Maureen McIlquham wrote, "Losing Michelle has broken my heart and I miss her more and more each day. When I wake up each morning, the first thing on my mind is Michelle. My life will never be the same again." She said that the family "are still angry and upset that Michelle did not get proper medical attention that night especially as she arrived at the Bankstown Hospital by ambulance." They believe that "Michelle was judged on her disability" and that she received inferior treatment as a result.

133. Dr Tyler-Freer offered a full public apology to the McIlquham family. She did not expect them to forgive her or that the apology would bring "closure" to the family. But she assured them that she had not discriminated against Michelle.

134. In my view, the nursing and medical staff, including Dr Tyler-Freer, probably did not discriminate against Ms McIlquham on the grounds of her disability. But some did treat her differently from the way they might have assessed and treated other patients. I think that this was not so much because of prejudice against developmentally delayed patients but because they operated on certain assumptions about such patients. In particular, they appear to have operated on the assumptions that her inability to communicate easily with them was due to "behavioural" issues associated with her disability or that she lacked the general capacity to communicate.

135. In other words, they were seeking explanations for what they were seeing, and looking for familiar patterns of signs and symptoms. They then attributed signs of

her illness, and especially signs of her altered mental status, to the fact that she was a developmentally disabled person suffering significant pain due to what they thought was a common middle ear infection.

136. It is easy, however, to understand why the McIlquham family took the view that Michelle had been treated dismissively and why they remain indignant about it. The use of the term "temper tantrum" in Dr Tyler-Freer's description of her diagnosis in the discharge letter was, to say the least, most unfortunate. It not only has offensive connotations, it was not a true diagnosis. The use of the term, and Dr Tyler-Freer's equally regrettable reference on the night to using security guards to take Michelle out of the department, must have greatly added insult to injury for the McIlquham family.

137. Inquests and public apologies cannot relieve the pain of the loss of a child or someone loved as much as Michelle was by her family. It would be a foolish coroner who thought an inquest could bring "closure" in such a case. But I hope that the McIlquham family will understand that their concerns have been taken seriously and will continue to be taken seriously as the Health Department authorities consider the results of this inquest.

138. I also hope that in time the happy memories of Michelle – the charming and loving daughter and sibling they remember so well performing pony tricks and delighting in helping others – will gradually dispel the sadness of the loss they have suffered. She had a short life but gave much joy and happiness to her family and many others. I hope that will be her legacy to her family, rather than the disappointment and bitterness they feel about the way she died.

Findings under s 81 *Coroners Act 2009*

139. I find that Michelle McIlquham died on 19 May 2009 at the Bankstown Hospital, New South Wales due to undiagnosed acute streptococcus pneumonia meningitis (with left-sided otitis media as the antecedent cause).

Recommendations under s 82 *Coroners Act 2009*

140. I recommend to the Minister for Health and the South West Sydney Local Health District that they (or whichever is more appropriate) ***consider implementing*** the following practices, clinical policies and guidelines or revisions to them:

(a) That there be a nursing assessment of any "specific high-risk patient" (as defined in the Bankstown Hospital protocol "Emergency Department Supervision" BNK_GL2010_001) triaged categories 1, 2 and 3 before he or she is physically discharged from the Emergency Department if that has not taken place within 30 minutes of his or her last review and the patient remains within the physical confines of the department.

(b) That there be a nursing assessment of any patient who requires physical assistance to be transferred from their bed to their mode of transport on discharge unless it is clear that the need for physical assistance was assessed by a doctor at the time of the clinical decision to discharge. Alternatively, I recommend that NSW Health or the Local Health District (as the case may be) consider amending its standard emergency department discharge protocols to include a warning on the discharge documentation that if a patient requires physical assistance to leave the Emergency Department he or she ought not be discharged unless it is clear that the need for physical assistance was assessed by a doctor at the time of the clinical decision to discharge.

(c) That a guideline that all patients with a presenting complaint of seizure, but who do not have a previous history of seizures, should be assessed by a senior doctor in the Emergency Department, and if a senior doctor is unable within 30 minutes to assess the patient, a full blood count and any other tests that ought be included in a standard battery of tests for such a patient should be ordered.

(d) That all patients presenting with a GCS score of less than 15 should have their GCS assessed on admission and prior to discharge.

(e) That all patients who on presentation were triaged categories in 1, 2 or 3 with developmental disability should be assessed by a senior doctor before discharge.

(f) That there should be an annual education of all clinical staff in the Emergency Department in relation to detection of signs of risk factors, signs and symptoms of sepsis in patients presenting to an emergency department. AND further that the clinical education should include information on tests or investigations that can be performed to identify sepsis in patients and subsequent management with rapid intravenous antibiotics, fluids and source control.

(g) That a junior medical officer's differential diagnosis should be documented in the patient's clinical record in the Emergency Department. At Bankstown Hospital, the appropriate place and time for this may be when the Presentation Plan is formulated.

(h) That Section 1 (entitled "Emergency Department Patient Assessment and Review") of the Bankstown Hospital Emergency Department Supervision Guideline be reviewed in accordance with these findings.

(i) That the Local Health District it consider including in the in-house training given to Emergency Department staff (medical and nursing) a regular session on mental and physical preparation for a shift and self-care during a shift.

(j) That in an appropriate forum or manner the Local Health District emphasise to Nursing Unit Managers and to senior doctors supervising Emergency Departments that the efficiency of their staff will be improved by attention being paid to self-care, especially rehydration, during shifts.

(k) That the Local Health District consider developing a poster or notice that can be placed in Emergency Departments warning staff of the effects of fatigue and urging staff to rehydrate regularly and eat light meals during the shift.

Magistrate Hugh Dillon
Deputy State Coroner for NSW