



CORONERS COURT OF QUEENSLAND

FINDINGS OF INVESTIGATION

CITATION: **Non-inquest findings into the death of Daniel Christopher Roulant**

TITLE OF COURT: Coroners Court

JURISDICTION: BRISBANE

DATE: 11 March 2020

FILE NO(s): 2017/5330

FINDINGS OF: John Lock, Deputy State Coroner

CATCHWORDS: CORONERS: Meningococcal meningitis/sepsis, immunisation, prevention, notifiable public health condition

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Background

1. Daniel Christopher Roulant was aged 22. His medical history included mild idiopathic thrombocytopenic purpura and a previous stress fracture of the L3 vertebra.
2. He had recently seen a GP on 23 November 2017 with symptoms of a cold and mild fever. When seen by his GP it was noted his ear, nose, throat and chest were all clear. His temperature was 37.4. The diagnosis was of a viral head cold.
3. Daniel attended at his workplace on 29 November 2017 but left early because he was feeling unwell. During the shift on 29 November he stated he was feeling unwell and he took the opportunity of lying down and he went to sleep. When he woke up he left early at 6:45 pm.
4. Witnesses who were present at the place where he resided stated that in the early evening of 29 November 2017 Daniel looked tired when he came home. Daniel told them he had slept through his shift and he had a headache and he was observed to be holding his head.
5. Later the next day Daniel had not been seen by his flatmate but this was not uncommon. At around 10:30 pm his flatmate entered his bedroom and found him unresponsive in his bed. Queensland Ambulance Services were called and attended, however he could not be resuscitated.
6. Queensland Police attended the scene and considered there were no suspicious circumstances suggestive of third party involvement.

Autopsy examination

7. An external examination showed a purpuric rash over the entire body.
8. An internal post-mortem examination showed purulent meninges over the surface of the brain consistent with meningitis. Histology confirmed the presence of meningitis with extensive acute inflammation.
9. There was early haemorrhage within the adrenal glands, neutrophilic infiltrate in the spleen, haemorrhage in the lungs, and in conjunction with the purpuric rash, the forensic pathologist opined the features were consistent with meningococcal sepsis. Microbiology tests confirmed the presence of *Neisseria meningitidis* (meningococcus) in the brain tissue.
10. There was severe coronary atherosclerosis in the left anterior descending coronary artery.
11. The forensic pathologist stated that meningococcal disease causes severe infection including inflammation of the lining of the brain and/or sepsis. There was evidence of both of these in this case.
12. Meningococcal disease is one of the main causes of meningitis in young adults. Patients who develop sepsis can deteriorate rapidly and this is associated with a higher mortality rate than meningitis alone.
13. Although he was a young man, Daniel had severe coronary atherosclerosis and in the setting of sepsis this would have reduced his cardiovascular reserve and was potentially a contributing factor.

Police investigation

14. Police obtained a number of statements from those who had associated with Daniel in the period prior to his death.
15. Lorene Blinks is the venue manager at Cloudland. In her statement she stated that during the preceding two weeks before his death Daniel had been suffering from what she believed to be the flu. He had flulike symptoms such as coughing and a running nose.
16. On 23 November 2017 he took a day off sick. For his next shift he produced a Doctor's certificate stating he had been unfit to attend that day. A copy of the certificate was produced and signed by Dr Marco Zorzetto.
17. On 29 November 2017 Daniel was rostered to work from 1:15 pm until 10 pm and/or midnight depending on the shift requirements. That afternoon Daniel told Ms Blinks he was not feeling well and he was shivery. At about 4:44 pm he sent her a text which stated "can I talk to you after the meeting. I am so sick, I feel like I am going to faint, on the back steps in the heat". She was in a meeting at the time and did not see the text immediately.
18. Later Daniel laid down in the function room where he went to sleep. His supervisor walked through the room several times while he was sleeping and he seemed okay. He woke up and clocked off at 6:45 pm. A copy of attendance records and timesheets confirm he had clocked on at 1:15 pm and clocked off at 6:45 pm.
19. Daniel was supposed to be working the next day and when he did not arrive Ms Blinks sent him a message asking if he was coming to work. He had not replied and she assumed he was sick again.
20. Nicholas McQueen shared a house at Woolloongabba with three other males including Daniel. Mr McQueen worked during the day and as Daniel's shifts were in the afternoon/evening and occasionally during the day it was not uncommon for him to not see Daniel from anywhere from a couple of days to a week.
21. He last saw Daniel on the evening of 27 November 2017. Daniel appeared to be fine and well at that time.
22. Damon Nevis was present at the house on 29 November 2017 visiting his friend Joseph Potter. He arrived at around 11 am or midday and they were watching a movie. He recalls that around 1 pm Daniel came out of his room and they had a brief chat and he seemed fine at this time. Daniel then left for work. Mr Nevis recalls Daniel came home early at around 6:30 to 7 pm. Daniel mentioned he was tired and had slept through his whole shift. Mr Nevis noticed he looked a bit tired. Daniel did not say anything about not feeling well. Mr Nevis asked Daniel if he wanted to play PlayStation but he said he wanted to go to bed. Mr Nevis recalls that shortly after he and his friend Steven Stefanou left the house.
23. Steven Stefanou also provided a statement saying on 29 November 2017 they visited Joseph Potter at his share house. He recalls they arrived around 11 am and sometime in the first hour he saw Daniel come out of his room and say hello. At the time Daniel seemed normal, healthy and not unwell. Daniel then got ready to go to work and left shortly after. In his statement Mr Stefanou states that around three hours later at about 2 or 3 in the afternoon Daniel arrived home. In his statement Mr Stefanou stated he is not really sure on this time as they had been playing PlayStation all day and it felt only a couple of hours had passed but it could have been closer to late afternoon. He recalls discussing with Daniel the fact that he was home earlier than expected and Daniel mentioned he had slept

during his shift and he had a headache. Daniel said he did not want to play games and wanted to go and sleep it off. He recalls Daniel was looking pretty rundown and more than usual and was holding his head a lot similar to when you have a bad headache. Mr Stefanou left around 7 pm.

24. Joseph Potter says he saw Daniel on the afternoon/evening of 29 November 2017. He saw Daniel go to work that morning and did not notice anything different or out of character with Daniel. His two friends Damon and Steven were present at the house that day. He recalls it was around 5 pm when Daniel came home from work. He recalls asking Daniel about how his shift had gone and remembers him saying that he had slept through most of the shift and he appeared to be flustered. Daniel then walked off to his bedroom and he went to bed later that night.
25. Joseph was at home all day on 30 November 2017. He had not seen Daniel at all and thought that was a little odd but it was not uncommon for him not to see Daniel. Joseph later left the house to go for a run but was only way for 30 minutes.
26. On 30 November 2017 Mr McQueen arrived home from his work at about 2:30 pm. One of the other housemates Joseph Potter and two other friends were present. Mr McQueen then visited his parents and returned at around 8:30 to 9 pm. The other two friends had left by this time.
27. At around 10:20 pm Joseph received a message from Daniel's sister April. She asked him to check on Daniel as they had not heard from him in a few days. He tried to call and text Daniel but there was no response. He went to his bedroom and knocked on the door and there was no response. Mr McQueen heard Joseph banging on Daniel's door. Joseph told him that Daniel's sister April had messaged him saying they had not heard from Daniel in a few days. After knocking and receiving no response they opened the bedroom door and saw Daniel lying on his bed. His arms and legs were sticking up. They tried to rouse Daniel but there was no response. Joseph could see red dots on Daniel's body. He sort of knew Daniel had passed away. They called 000 and on instructions from ambulance services pulled Daniel off the bed and commenced CPR. A short time later two ambulance officers arrived and attended to Daniel but told them shortly after that he had died.

Review by the Clinical Forensic Medicine Unit

28. Dr Ian Home of the CFMU reviewed the GP records. Dr Home noted Daniel notably had a past medical history of marginally low platelet count that was diagnosed as a mild form of idiopathic thrombocytopenia purpura. Although labelled as ITP there were no reports of bleeding or bruising.
29. On 23 November 2017 Mr Roulant attended his GP Dr Marco Zorcetto with symptoms of a cold and fever. Examination revealed a low grade fever of 37.4°C (normal range 36.1–37.2° C). Examination of his ears, nose, throat and chest appeared unremarkable. A diagnosis of a viral illness was made and he was provided a medical certificate for one day off work. A pathology request form was provided to “check platelet count”.
30. Six days later Mr Roulant became unwell at work. On returning home he informed his flatmates he had slept whilst at work and had a headache. He then went to bed. He was found unresponsive the following day.
31. An autopsy examination noted the cause of death was meningococcal meningitis and sepsis.

32. Dr Home stated that six days has lapsed between the GP visit and death. The diagnosis at time was a viral head cold. Whilst a low-grade fever was present, there was no indication of neck stiffness, change in mental state, severe headache or the existence of petechia to suggest meningitis should have been considered at the time.
33. Following the GP visit his flatmates recall him appearing fine and well over the next few days up until he departed for work on 29 November 2017. Later that afternoon he subsequently became unwell and began shivering.
34. Based on this evidence, Dr Home opined that it was apparent Mr Roulant's symptoms improved following his visit to the GP. He then became acutely unwell whilst at work on the afternoon of 29 November 2017. Whilst recent viral illness can increase susceptibility to meningitis, there was no way for the GP to foresee that Mr Roulant would develop meningitis six days later.¹
35. Dr Home stated it was not entirely clear why a blood test was requested for a simple head cold but speculated that this was to ensure his already borderline platelet count did not drop further, which is a common occurrence with viral infections. As to why he was advised to wait a week before having the blood tests Dr Home speculated this was done in order to give the body a chance to recover and restore the platelet count.

GP Presentation

36. Daniel attended his GP Dr Marco Zorzetto at the Holland Park Family Medical Practice.
37. Daniel had attended his practice on 23 November 2017. The consultation indicated he had a viral head cold. He did not have a history to suggest an influenza-like illness.
38. Daniel's last influenza immunisation at his practice was in 2014. Influenza was not entertained on the day because clinically the presentation was not of an influenza infection.
39. At the consultation on 23 November 2017 blood tests were ordered to be conducted and there was a suggestion that Daniel wait a week before going for the blood tests. Dr Zorzetto recalls he did make that suggestion. The blood test was suggested to be done after he was clinically well overall. He did not want the presence of a viral infection to effect the interpretation of the results.
40. Dr Zorzetto was aware Daniel had been diagnosed with idiopathic thrombocytopenic purpura. Dr Zorzetto was asked to comment on the suggestion that Daniel therefore had a weakened immune system, making him more susceptible and vulnerable to meningococcus and whether he took that into account when reviewing Daniel. Dr Zorzetto stated he does not agree that ITP makes a patient more susceptible to meningococcal infection per se or indeed any specific infection. ITP can result in the patient being more susceptible to bleeding/haemorrhage. The concurrent viral head cold could decrease platelet numbers.
41. Dr Zorzetto was not aware Daniel had not been immunised against meningococcal infection. He was aware there had been an increase in numbers of meningococcal infection. In his clinical opinion at the time there were no pointers to meningococcal infection when he examined Daniel. His presentation and examination pointed most heavily towards a simple viral head cold with a current low-grade fever.

1. ¹ The same opinion was expressed by the CDB in its report to the coroner where it opined that it would not have been possible to prevent the course of events from the diagnosis of flulike illness on 23 November 2017.

Other inquiries - report from Communicable Diseases Branch, Queensland Health

42. The Communicable Diseases Branch (CDB) is one of five branches within the Prevention Division (PD) for Queensland health. The PD aims to improve health through the promotion and protection of health and well-being, detection and prevention of diseases and injury, and supporting high quality healthcare service delivery.
43. The CDB provides statewide leadership in the prevention and control of communicable diseases and emerging infectious diseases of public health significance.
44. Public Health Units are located within hospital and health services across Queensland and are responsible for the operational management of public health issues and focus on protecting health, preventing disease, illness and injury and promoting health and well-being and a population level. The laboratory services provided by Forensic and Scientific Services is also an essential component of the statewide delivery of public health functions.

National Immunisation Program (NIP)

45. Immunisation is a simple, safe and effective way of protecting the community against disease. Immunisation not only protects individuals from life-threatening diseases, but also reduces the spread of those diseases.
46. The NIP aims to increase National immunisation coverage to reduce the number of cases of diseases that are preventable by vaccination. Vaccines are provided free for people in an eligible risk groups.

Invasive meningococcal disease (IMD)

47. Meningococcal disease is a severe, rare infection that occurs when meningococcal bacteria invade the body from the throat or nose. Meningococcal disease occurs in two main forms (or a combination of these two forms):
 - a. Meningococcal meningitis –when the bacteria infects the lining around the brain and spinal cord
 - b. Meningococcal septicaemia - when the bacteria invades the bloodstream and causes blood poisoning.
48. Whilst rare, meningococcal disease is a serious illness that can quickly cause death (e.g. within 24 hours) or profound life-long disability such as brain damage, hearing loss or limb loss. There are 13 known serogroups of meningococcus. In Australia, the five most frequently notified types of meningococcal bacteria are from serogroups A,B,C,W and Y.
49. Meningococcal bacteria are carried harmlessly at the back of the throat or in the nose in about 10% of the community. Adolescents typically have higher rates of carriage than the rest of the community. Although most people who have the bacteria in the throat or nose remain quite well, they can spread the bacteria to others, and a few of these people may subsequently become ill. Meningococcal disease is not easily transmitted. While the bacteria can be spread via droplets from the nose or throat during coughing and sneezing, close and prolonged contact (eg. people in the same household, roommates and sexual contacts) with a person who has the bacteria in their nose or throat is usually needed for the bacteria to spread.
50. Treating clinicians and public health physicians are extremely careful about who gets clearance antibiotics and who does not. In each case, public health clinicians seek to identify those considered to be close contacts. Close contacts are generally considered to

be those who have lived in the same house as the person with IMD over the week before they become unwell.

Vaccine prevention

51. Vaccines can provide protection from the disease caused by the five more frequently notified meningococcal bacteria types (A,B,C,W and Y), but different vaccines protect against different types. No single vaccine protects against all types.
52. In Australia immunisation against meningococcal ACWY at 12 months of age is included in the NIP schedule. A single dose of meningococcal ACWY vaccine is also offered to students in year 10 and for adolescents aged 15–19 years through their GP or other registered immunisation provider.
53. There are two meningococcal B vaccines available through the private market. Neither vaccine is funded under the NIP.

IMD Notifications

54. IMD is a notifiable condition on provisional diagnosis and on pathological diagnosis.
55. This incident was first notified to public health authorities on the morning of 6 December 2017. There had been contact from Forensic and Scientific Services (FSS) advising the father of Daniel that he had passed away from meningitis.
56. Upon obtaining that information it is apparent that public health authorities contacted a range of persons who may have had close contact with Daniel including his family, housemates, their visitors, the workplace, and GP practice, staff at forensic services, police and ambulance attenders.
57. According to the report to the coroner from CDB the public health focus is to identify people (contacts) who, because of the timing and degree of exposure to an IMD case, are considered 'higher-risk' of harbouring the same bacteria in their nose or throat, which could facilitate further transmission, or on rare occasions, lead to illness. Higher risk contacts, such as members of the same household, are recommended to receive clearance antibiotics, vaccination and specific public health advice.
58. Meningococcal vaccination may be offered to higher-risk contacts to further reduce the small risk of secondary cases. The rationale for vaccination in this context is to protect individuals from infection with an invasive strain of meningococcus that may still be circulating in their social network, including among persons who did not receive clearance antibiotics.
59. In addition to clearance antibiotics, vaccination with an appropriate vaccine is indicated for unimmunised household-like contacts of cases of IMD and meningococcal conjunctivitis confirmed to be caused by serogroup A, C, W or Y.
60. Public Health Units facilitate access to appropriate vaccine either directly, or through existing jurisdictional arrangements with primary care or immunisation providers.
61. On 8 December 2017 FSS advised the type was serogroup B. CDB advised vaccination with the MenB vaccine is not recommended after a single case of IMD caused by serogroup B, primarily because it is a multi-dose course, and a single (first) dose is unlikely to confer protection to the contact during the period of higher risk of disease.
62. Vaccination of household contacts with MenB vaccine should, however, be considered if a second serogroup B case occurs in the same household (even if >30 days later), as this

may indicate increased susceptibility of family members to IMD and/or ongoing transmission within the household.

63. It was noted that CDB were aware of four recent cases of meningococcal disease with three out of four cases being meningococcal B and involving individuals who attended nightclubs in Fortitude Valley. Daniel's family expressed concern that CDB concluded there was no 'cluster' of cases identified particularly noting whether further reporting of such cases to the public was necessary.
64. CDB advised in response it views an 'outbreak' as the occurrences of more cases than are expected for the population or group under consideration over a specific period of time. The characteristics of the population or group under consideration can vary with time, person and place. Therefore, the expected rate of cases can also vary.
65. When considering whether cases of meningococcal disease of the same serogroup are part of an outbreak, further genetic analysis of meningococcal specimens can be undertaken to determine the similarity of bacteria causing infection and therefore likelihood of association between cases. FSS performed this analysis of the other meningococcal B cases and the three other cases were determined to be unrelated to each other. Given this information QH would not consider this to be part of a cluster or outbreak of cases.
66. The family also queried QH's policy for media release for meningococcal cases after having been advised by health officials that no media statement would be made in relation to the death. QH advised that meningococcal bacteria are not easily transmitted and require close, prolonged contact. Public Health management of IMD generally focuses on the follow-up of close contacts of cases most likely to be carrying the bacteria in their nose and/or throat, rather than messaging the broader public. This is in contrast to managing a case of measles virus, by way of example, which is highly infectious and involves significant risk of disease transmission. Cases are publicly reported by QH in weekly notifiable condition summary reports, quarterly case counts for IMD and by way of health alerts where necessary. QH also periodically issues preventative based immediate releases regarding meningococcal disease and vaccines.
67. Daniel's family also queried the fact that notification was not made to individual employees. QH noted that while public health management of co-workers would be routinely undertaken for those who are considered close contacts, broader messaging would depend upon contextual factors of the case and their workplace including, but not limited to, the need to protect privacy, obtaining consent to release medical information, size of the workplace, number of close contacts within the workplace, and level of perceived risk among co-workers. The communication strategy is guided by the Communicable Diseases Network Australia Series of National Guidelines and determined by the relevant public health unit.
68. It is evident that it was not considered necessary to advise fellow employees as they were not considered to be close contacts as distinct from his roommates who were contacted.

Conclusions

69. Daniel Roulant has died from an acute bacterial infection that can cause death within hours. In particular Daniel had contracted both meningococcal meningitis and meningococcal septicaemia. This is a more dangerous form of meningococcal disease with a high fatality rate. His roommates had seen him earlier with a headache and not looking well. Symptoms may include common flu like symptoms and it is only in the later stages that a purple rash may develop.

Findings required by s. 45

Identity of the deceased: Daniel Christopher Roulant

How he died: Daniel Roulant has died from an acute bacterial infection that can cause death within hours. In particular Daniel had contracted both meningococcal meningitis and meningococcal septicaemia, which is a more dangerous form of meningococcal disease with a high fatality rate.

Place of death: 1 Grattan Street WOOLLOONGABBA QLD 4102 AUSTRALIA

Date of death: 29 November 2017 - 30 November 2017

Cause of death:
1(a) Meningococcal meningitis and sepsis
2 Coronary atherosclerosis

I close the investigation.

John Lock
Deputy State Coroner
CORONERS COURT OF QUEENSLAND
11 March 2020