CORONERS COURT

OF NEW SOUTH WALES

Inquest:	Inquest into the death of Luca Thomas RASO
File number:	2017/62958
Hearing dates:	21-23 October 2019
Date of findings:	13 December 2019
Place of findings:	State Coroner's Court, Newcastle
Findings of:	**State Coroner, Magistrate Teresa O'Sullivan**
Catchwords:	CORONIAL LAW – misdiagnosis: peritonitis; ruptured gangrenous acute appendicitis.
Representation:	Ms R Mathur, Counsel Assisting the Coroner, instructed by Ms M Katawazi, Solicitor Assisting, NSW Department of Communities and Justice Mr R O'Keefe, Counsel for Ms M Degenhardt, instructed by Ms N Whiting, Maurice Blackburn Lawyers Mr S Kalfas, Senior Counsel for Dr Pavlo (Paul) Bilokopytov and Nelson Bay Medical Group, instructed by Mr J Vijayaraj, Avant Mutual
Findings:	**Identity** The deceased person was Luca Thomas Raso. **Date of Death** Luca Thomas Raso died on 27 February 2017. **Place of Death** Luca Thomas Raso died at the Tomaree Community Hospital.

	Cause of Death Luca Thomas Raso died of peritonitis secondary to ruptured gangrenous acute appendicitis. **Manner of Death** Luca Thomas Raso died as a result of a misdiagnosis of his presenting condition on 22 and 24 February 2017; namely a misdiagnosis of gastroenteritis and the consequential failure therefore in receiving the appropriate referral and treatment for his appendicitis.

The *Coroners Act 2009* (NSW) (the Act) in section 81(1) requires that when an inquest is held, the coroner must record in writing his or her findings as to various aspects of the death.

These are the findings of an inquest into the death of Luca Thomas Raso.

Introduction:

1. Luca was 13 years old when he died at Tomaree Community Hospital from acute appendicitis. He suffered symptoms in the preceding week and attended his local general practitioner on two occasions in the days before his death. The primary issue during the inquest was the events leading to Luca's death relevant to diagnosis and treatment.

2. From the outset I extend my deepest sympathies to the family of Luca Raso, particularly his mother Michelle Degenhardt who throughout the inquest has been such a strong and gracious advocate for her family and for her beloved youngest son. Luca's older sister Victoria also gave evidence before me, in circumstances which must have been very distressing for her given she was asked to recall events relating to the last few days of her brother's life.

3. Luca was 13 years old at the time of his death and in Year 8 at San Clemente Catholic School in Mayfield. He was a healthy child with no significant medical history. Michelle described Luca as an active boy with plenty of friends. She said he was different to other children of his age in that he had a beautiful soul and loved animals and nature. Luca's mother is a single mother to six children. Four of these children are her biological children: Sam, Victoria, Nicholas and Luca. The other two children, Ella and Hannah, are the children of her deceased sister.

4. It is hoped that the coronial process and these findings will help to answer some of the family's questions regarding the circumstances, which resulted in Luca's death.

The Inquest:

5. This inquest was not mandatory, but was held to answer concerns regarding the manner of death, namely what were the relevant circumstances that lead to a diagnosis of viral gastroenteritis and not appendicitis by Luca's treating GP Dr Bilokopytov, and thereby resulted in no escalation of care to an emergency department or hospital.

6. An issues list was distributed in advance of the inquest, which read:
   i. From what date is it likely that Luca was suffering from appendicitis? Namely as early as 22 February or on or subsequent to 24 February?

   ii. What are the typical features of appendicitis and retrocaecal appendicitis? Is either condition difficult to diagnose?

   iii. Were the clinical findings on examination on 22 and 24 February consistent with the making of a differential diagnosis of appendicitis and/or retrocaecal appendicitis?

   iv. If a differential diagnosis of appendicitis and/or retrocaecal appendicitis is considered or made or suspected, what course of action is open to a

treating General Practitioner by way of examinations, tests and referrals?

v. Does the Royal Australian College of General Practitioners (RACGP) provide sufficient guidance to General Practitioners with respect to diagnosis and management of appendicitis?

vi. What was the history of presenting symptoms given by Luca's mother and sister according to the family?

vii. What was the history of presenting symptoms given according to Dr Bilokopytov?

7. At the commencement of the inquest, I received a large volume of documentary material in the form of a two-volume brief of evidence put together by the investigating police and the solicitor assisting. Over the course of three days, those witnesses who were relevant and available were called to give oral evidence that addressed the issues in the inquest. As a result of all of the evidence, I am in a position to make findings with respect to each of the matters that are set out in section 81 of the Act and each of the matters on the issues list.

Chronology of events

Luca's symptoms

8. On Monday 20 February 2017 Luca stayed at home from school and complained that evening of a 'sore tummy'. He vomited later in the toilet and twice during the night.

9. On Tuesday 21 February 2107 Luca stayed home from school cared for by his older brother Nicholas. He vomited three times over the day. He was not hungry and was drinking a lot of fluid.

10. On Wednesday 22 February 2017 Luca remained unwell and vomited in the morning after eating some toast. He suffered from diarrhoea twice during the day (including on the couch on one occasion). Michelle made an appointment to see a doctor at Nelson Bay Medical Centre for that afternoon.

11. The Nelson Bay Medical Centre was operated by the Nelson Bay Medical Group. This Group operated three medical centers in the area: Nelson Bay, Salamander Bay and Soldiers Point.

The first consultation

12. At around 9am on 22 February 2017 Emma-Jane Doro, the receptionist at Nelson Bay Medical Group, received a telephone call from Luca's mother Michelle. She informed the receptionist that she already had an appointment booked that afternoon for her daughter and requested that the doctor also see her son Luca, who had been vomiting overnight and had a high temperature. Following this call, Emma-Jane sent an email to Dr Bilokopytov with this request.

13. At 11.56am Dr Bilokopytov responded to the email from Emma-Jane and confirmed he would see Luca at the scheduled appointment.

14. At 3.50pm on 22 February 2017 Luca and Michelle attended Dr Bilokopytov at Nelson Bay Medical Centre. The receptionist recalls that Luca looked unwell while he was waiting to be seen by Dr Bilokopytov. Luca in fact lay down in the office where he was seen by the GP.

15. The medical records from the first consultation set out a history of:
    - Last 2 days vomiting, lethargy;
    - No blood, no melaena, no abdo pain;
    - School reported many cases of D & V (diarrhoea and vomiting).

16. The medical records set out that on examination:

- Abdomen was soft, with no distension, no rigidity and no tenderness, no guarding or rebound tenderness;
- Bowel sounds normal.

17. Dr Bilokopytov formed the impression of viral gastroenteritis, and advised Luca to drink plenty of fluid, eat plain food frequently (small portions and avoiding spicy food) and to 'come back to see Dr for review if it gets worse / new symptoms.' Regarding the examination undertaken, Dr Bilokopytov states he read Luca's pulse by placing his fingers at his wrist for under 15 seconds while conducting the general examination. Michelle states that no pulse was taken at all and that no stethoscope was used at any time.

18. This was one of the differences between the recollection of the family and the recollection of the GP. When I come to consider many of the differences in memory between the family and the GP regarding what precisely was said or done during each of the two consultations, I will at all times be mindful of those every day factors that affect all our memories and the reliability of our memories, such as: events that are unremarkable to the person at the time are less likely to be recalled accurately in every respect; that the passage of time, even days, let alone weeks, months or years can adversely affect a witnesses memory, even a memory that is honestly held, and that is particularly so in relation to precisely what was or was not said; that trauma and grief and scrutiny and accountability can contaminate our memory with false memories; and that even for a lay person-hindsight bias can affect how we recall what was said or done. Given all these factors there are some factual disputes in this case where I have not on balance been able to make firm findings of fact.

19. To my mind it is possible that Dr Bilokopytov took Luca's pulse without his mother or sister realising at the time that he was. However, the more critical issue in my opinion is that if a pulse was taken, it was taken in a very cursory manner and ought to have been, as stated by all the GP experts, for a *minimum* period of 15 seconds. This is particularly so during the second presentation. Furthermore, the expert evidence established that the

relevance of recording the pulse in the clinical records, even if normal, is as a comparator in the event of follow up consultations. A change in pulse, only likely to be recalled if recorded, can provide a clear marker for a deteriorating or improving condition. Unfortunately, no pulse was recorded during Luca's first or second consultation.

20. Michelle recounts that during the first consultation Dr Bilokopytov:
    - Asked a number of questions and felt 'all over Luca's belly while asking Luca if it hurt while he was pushing on any of the locations around his belly';
    - Asked Luca if he was in pain and Luca replied "it just hurts everywhere";
    - Said that "sometimes appendicitis can look like gastro";
    - Took Luca's temperature and said that this was normal with symptoms of gastro;
    - Checked Luca's tongue and said he was not dehydrated;
    - Explained how the gastro bug worked;
    - Told Luca and Michelle to keep the fluids up and if not better to come back in two days.

21. Dr Bilokopytov confirmed that save for the history that 'it just hurts everywhere', he agreed with Michelle's recollection as outlined above. He confirmed in his evidence that his clinical impression based on the history and examination, was viral gastroenteritis. Dr Bilokopytov gave evidence that he told Michelle that it was important to exclude signs of appendicitis and he showed her how to find the appendix and demonstrated that the abdomen was soft and not tender. Michelle in oral evidence stated that she had no recollection of this discussion or demonstration by Dr Bilokopytov and believes it would be something that she would recall, had it occurred.

22. One of the contentious issues in the inquest was whether or not Luca in fact made a complaint of pain, namely 'it hurts everywhere'. Michelle was adamant in her evidence that Luca said this to Dr Bilokopytov. Dr Bilokopytov denied it was said. I will turn to this issue later in these findings.

23. An additional issue of contention was whether Dr Bilokopytov categorically ruled out appendicitis in his discussion with Michelle during the first consultation, as stated by her, or simply indicated that Luca did not have the *symptoms* of appendicitis. Little turns on resolving this disputed fact in my opinion as ultimately, the course of treatment Dr Bilokopytov recommended was one consistent with his diagnosis of viral gastroenteritis and no follow up testing was done during this consultation or the subsequent consultation to eliminate appendicitis as a differential diagnosis.

24. Following the consultation Michelle made an appointment for a further consultation for Friday 24 February 2017.

25. During the evening of 22 February 2017 Luca remained unwell.

Luca's continued symptoms on 23 and 24 February 2017

26. On Thursday 23 February 2017 Luca remained unwell during the day with an 'insatiable thirst' for cold water. He continued to have diarrhoea and lay on the couch watching movies.

27. On the morning of 23 February 2017 Michelle telephoned Nelson Bay Medical Centre to seek further advice about Luca's condition. She spoke with the receptionist Alyssa Strang. Alyssa said that Michelle told her that Luca started vomiting again on their return from the consultation and asked about food. At 10.21am Ms Strang emailed Dr Bilokopytov: 'Michelle Luca's mum phoned – as soon as they arrived home yesterday he stopped vomiting and started with diarrhea. Any fluids he is able to drink goes straight through him. Ok to try plain cracker / toast? Mum more worried as to what to look out for if he deteriorates.'

28. At 10.50am Dr Bilokopytov responded by email: 'Sounds like viral diarrhea. I would advise small sips of water frequently. If very worried – book with me. Thanks.'

29. In the late morning Alyssa telephoned Michelle and informed her of the response from Dr Bilokopytov. Alyssa did not escalate Luca's care, despite a triage support guide held by Nelson Bay Medical Group and readily available to all staff that records 'come to surgery now' as advice to be given when a child has persistent vomiting and diarrhoea. Alyssa gave evidence that she did not direct Michelle to bring Luca in immediately as her impression, based on the conversation with Luca's mother and the tone of her voice was that there was no urgency.

30. On the morning of Friday 24 February 2017 Luca remained unwell and did not want to eat. He asked his mother to get him some pull up nappies because of his diarrhoea. The family, including Luca, joked about this at the time when they all saw an advertisement on television for nappies.

The second consultation

31. At 11.40am on Friday 24 February 2017 Luca's sister Victoria took him to the medical centre. Luca told Victoria that he didn't want to go to the doctor because his stomach was too sore and he didn't want to have to wait for the doctor. She also specifically recalled that Luca said: "Can you ask the doctor not to push on my tummy because it hurt when he did it last time." Victoria said in evidence that she never informed Dr Bilokopytov of this request by Luca. Likewise, although that morning Luca could hardly stand up and she helped him to dress, she didn't inform Dr Bilokopytov of this. Although Luca had asked Victoria to slow down going over speed bumps on the way to the surgery, Victoria gave evidence that this was not relayed to Dr Bilokopytov.

32. Luca and Victoria waited for roughly one hour for the consultation. A receptionist suggested Luca rest in the treatment room while waiting for Dr Bilokopytov, which he did. He was examined in this room and when Dr Bilokopytov walked into the room, Luca was lying on the bed. Dr Bilokopytov never observed Luca walking.

33. The medical records from the consultation set out the reasons for the visit as: “Diarrhoea, Gastroenteritis, viral.” The records record a history of:
    - Started with diarrhoea;
    - Initially had vomited 3/7 ago – resolved;
    - No blood, no melaena, no abdo pain;
    - School reported many cases of D & V.

34. The medical records set out that on examination:
    - Temperature of 37.2;
    - Abdomen: soft;
    - No guarding or rebound tenderness;
    - No distension;
    - Bowel sounds normal.

35. The medical notes record: “Impression – viral gastroenteritis, with advice to drink plenty of fluid, eat plain food frequently (small portions and avoiding spicy food) and to ‘come back to see Dr for review if it gets worse / new symptoms / abdominal pain.” These notes are almost identical to the management notes from the first consultation, but for the addition of advice to return for review in the event of abdominal pain and the noting of a temperature.

36. Victoria said that she informed Dr Bilokopytov that Luca was in pain; that he wasn’t eating or drinking, that he was struggling to keep fluids in and that because of his diarrhoea they had purchased him ‘depends’ (adult diapers) to wear. Dr Bilokopytov denied being told or being aware that Luca was wearing diapers and denied being told by Luca or his sister that he was in pain.

37. In evidence before me, Victoria said that she now recalled that she had to help Luca out of the car and aid him to the doctor’s surgery. Luca had one arm around her and was holding his stomach with the other arm. She said that she *believed* that she did tell Dr Bilokopytov that Luca needed

assistance with walking, however conceded that she can't be 'certain' that she did. Dr Bilokopytov denied that he was told this. In my opinion it is likely that Victoria visual memory of assisting her brother to walk to the surgery is reliable. However, given that close to two years had passed before Victoria informed anyone that she had told the GP that Luca needed assistance with walking, there is inherent unreliability in relation to precisely what was and wasn't said to Dr Bilokopytov during the second consultation on this issue. This is particularly so when I note that both Victoria and Dr Bilokopytov agree that *little* was said during that consultation.

38. Again, the more telling issue in my mind is that had a thorough examination been conducted and a full history taken, arguably Luca's inability to walk unassisted would have been elicited and may well have altered the diagnosis made on the Friday. I heard evidence that a test as simple as hopping on one leg can induce pain and be an indicator to a clinician of appendicitis.

39. Victoria's evidence was that no temperature was taken, however this recollection appears inconsistent with the contemporaneous records and is a clear example of what is well known, namely that an honest witness can have a mistaken memory. I accept, given the contemporaneous nature of the clinical records, that Luca's temperature was taken during the second consultation. I further note at this point the observation made by the peer review expert Associate Professor Roche that at the time the clinical records were written by Dr Bilokopytov, he had no knowledge or inkling that Luca would die the following Monday and therefore had no motive to intentionally falsify his clinical records. I accept this observation.

40. Victoria recounts that during the consultation Dr Bilokopytov:
    - Lifted Luca's t-shirt and poked his stomach and asked "Do you have any acute pain?" and Luca said: "What do you mean?" and he replied: "Do you have any sharp pains in your belly?" and Luca answered: "It hurts everywhere"';
    - Poked on the bottom right hand side of Luca's stomach and Luca said:

"Yes it's sore";

- Said to Victoria: "It's not appendicitis";
- Said to Victoria: "Luca has to ride it out. He should start to get better by Monday".

41. Victoria further recounts that Luca said "my belly's sore" and the doctor responded: "Of course it's going to be sore you've got a bug and you haven't eaten." These are recollections that Victoria outlines in a sworn statement she made two weeks after Luca's death. Dr Bilokopytov denies ever being told of any complaint of pain or hurt or that Luca's stomach was reportedly 'sore'. He stated that if he had been told any of these things, he would have sent him to hospital. I will return to this disputed fact later in my findings.

42. Dr Bilokopytov states that during this second consultation he explained to Victoria the signs of an acute abdomen and where to find the appendix and demonstrated that the abdomen was not tender on palpation. Victoria denies that this discussion or demonstration was done.

43. Following the consultation, Victoria returned home and when Michelle asked how the appointment went Victoria said: "We had to wait for ages … Luca fell asleep while we were waiting … He was really busy and he barely said anything … he just said to keep drinking fluids and to ride it out."

Luca's continued symptoms on 25 and 26 February 2017

44. On Saturday 25 February 2017 Luca appeared to have improved slightly. He was still drinking water regularly and not eating food. He remained on the couch during the day and evening.

45. On Sunday 26 February 2017 Luca remained the same, still drinking a lot of water though not complaining of any *particular* pain in any specific location. His family believed he may have in fact been improving, so much so that his mother ironed his shirt for school on Monday.

Luca's deterioration on the morning of 27 February 2017

46. On Monday 27 February Luca told Michelle that he was feeling 'the same' and stayed at home on the couch. During the morning he ate some toast and avocado but then vomited up the food. He looked pale and said to Michelle: "Oh mum it felt like something popped in my tummy."

47. Following this incident Michelle called the Nelson Bay Medical Centre and informed the receptionist that Luca had started vomiting again and asked whether it was 'ok' to give him the food. The receptionist, Roisin Ible, recalls that Michelle called early one morning and told her that her son had vomited after eating a piece of toast. Michelle says that she told the receptionist that the vomit looked like 'coca cola syrup'.

48. Michelle recounts that the receptionist put her on hold and then returned to the call and said that the food was ok. An appointment was made for 2.10pm that afternoon at the Salamander Bay Clinic. It is not clear what occurred while the receptionist put Michelle on hold.

49. In or around the middle of the day Luca continued to vomit. Michelle and Nicholas checked on Luca and were concerned that his vomit looked like 'dark brown syrup.' Luca was pale and very weak.

The call for an ambulance

50. At or around 1pm on 27 February 2017 Michelle called 000 and requested an ambulance. Shortly after this call Luca attempted to go to the toilet and fell over. He made some strange sounds and stopped breathing.

The attendance at Tomaree Community Hospital

51. At 1.25pm Luca was brought in to Tomaree Community Hospital by ambulance. On arrival Luca was not breathing and CPR was administered

by paramedics. Luca was given adrenaline and CPR was continued in the emergency department of the hospital.

52. At 1.45pm the Ambulance Service of NSW retrieval record states that an ambulance was dispatched to Tomaree Community Hospital in order to transfer Luca to John Hunter Hospital. At 2.15pm Luca was intubated and CPR continued. At 2.40pm the ambulance arrived at Tomaree Community Hospital for Luca's transfer. At between 3pm – 3.15pm on 27 February 2017 police received a request for a police escort for an ambulance in order to convey Luca from Tomaree Community Hospital to John Hunter Hospital. At 3.20pm police attended the Tomaree Community Hospital to commence the escort of the ambulance. At 3.25pm the ambulance departed Tomaree Community Hospital with Luca for John Hunter Hospital. At 3.30pm the police commenced their escort of the ambulance to John Hunter Hospital. At 3.50pm the ambulance returned to Tomaree Community Hospital as Luca was deceased.

The Expert Evidence

53. I was assisted greatly in this inquest by the reports and oral evidence of the medical experts Dr Allan Cala, Forensic Pathologist, Dr Hester Wilson (GP), Dr Bernard Kelly (GP), Associate Professor Roche (GP), Dr James Lynch (GP), Dr Henry Hook (specialist gastro-intestinal surgeon) and Dr Anthony Dilley (paediatric surgeon).

54. On 28 February 2017 an autopsy was conducted by forensic pathologist Dr Allan Calla. Dr Calla found that Luca suffered from ruptured gangrenous acute appendicitis and acute suppurative peritonitis.

55. Dr Cala's evidence was that an appendix becomes inflamed when a faecalith, which is a small stone like mass of faeces, obstructs the inner lining of the appendix. This sets up acute inflammatory response, taking a few hours, in which the appendix becomes swollen, pressure increases and this can obstruct the blood flow. Bacteria proliferate in the appendix and

with the impaired supply of blood flow to the appendix wall it eventually lead to necrosis.

56. Dr Cala stated that with gastroenteritis one would expect at autopsy to see an increased number of inflammatory cells that are not normally present in the bowel, to be present in the mucosa and the sub mucosa. He found no inflammatory cells consistent with gastroenteritis present at autopsy. He further stated that even if Luca's gastroenteritis had resolved days before autopsy, these inflammatory markers would still be present at autopsy. In his opinion it was not possible for Luca to have suffered gastroenteritis in the week preceding autopsy without some sign of it at autopsy.

57. This evidence was consistent with the expert evidence of Dr Hook, general surgeon, who gave evidence that gastroenteritis leaves macroscopic signs in the abdomen, namely an inflamed small bowel and inflamed lymph nodes which are seen during diagnostic laparoscopies.

58. Dr Cala further gave evidence that a rough estimate as to the period of time in which an appendix becomes gangrenous is four to five days, but this is inexact as it depends on the degree of the obstruction of the blood flow. In his opinion it was likely that acute appendicitis was developing as early as Monday 20 February 2017; and perforation, resulting in the peritonitis, may have occurred up to 5 days before death.

59. The surgeons Dr Hook and Dr Dilley gave evidence that one could only speculate as to when perforation of the appendix occurred. Dr Hook's evidence was that it's possible that the appendix perforated five days prior to death but that in his experience it would be unusual and even a rarity for a young and fit boy to be suffering from generalised peritonitis without treatment and antibiotics for five days. He suspected that the perforation probably occurred later and that it is not uncommon for patients to report a sensation of a 'pop' in the abdomen, as was the case with Luca.

60. Dr Dilley agreed with the opinions of Dr Hook and in his experience with generalised peritonitis a patient generally becomes rapidly unwell over a period of less than 24 hours. He noted however that a 'contained perforation', namely where 'puss' from the perforated appendix is contained and does not spread into the abdominal cavity generally could result in a perforation occurring five days prior to death. In his opinion the onset of diarrhoea could represent a localized perforation and contained abscess retrocecaly. Dr Hook agreed with this evidence.

61. This evidence supports a finding on balance that either a single perforation of the appendix or a secondary perforation, into the abdominal cavity, occurred on the Monday morning the 27 February 2017 when Luca said to his mother that it felt like something 'popped' in his stomach and he suffered from generalised peritonitis from that point in time.

62. In light of there being no signs at autopsy of evidence of gastroenteritis, I find on balance that Luca was not suffering from gastroenteritis during his first or second consultation with Dr Bilokopytov. I find that it is likely that Luca was suffering from appendicitis as early as the onset of vomiting on Monday 20 February 2017 and almost certainly by the 22 February 2017, namely at the time of his first consultation with the GP.

63. I note however that all three general practitioner experts stated that the vast majority of cases of adolescents presenting with vomiting or diarrhoea are correctly diagnosed as gastroenteritis, which often commences with vomiting and develops to diarrhoea. Appendicitis is seen in general practice but often the first presentation is at the emergency department of a hospital. It is in this context that the misdiagnosis occurred.

64. Further, all three general practitioners agreed that appendicitis can be difficult to diagnose with classic features being peri umbilical pain, followed by nausea, right sided lower abdominal pain and later vomiting and fever. Right-sided low abdominal pain is the most characteristic finding.

65. The evidence of Dr Hook and Dr Dilley confirmed that Luca's presentation of appendicitis was atypical and certainly not a 'classic case'. As stated by Dr Hook in his report, a retrocaecal appendix is 'notorious for atypical presentations mainly because it will often result in confusing clinical signs and in particular an absence or relative absence of anterior abdominal wall tenderness'. Dr Dilley gave evidence that other signs with retrocaecal appendicitis are hip flexion upon standing or walking resulting in a hunched fashion of walking or having difficulty lying flat on a bed and uretic irritation. Unfortunately Dr Bilokopytov never took a history regarding Luca's manner of walking and may not have been told that he had trouble walking.

66. An additional aspect of note in relation to Dr Bilokopytov's examination of Luca during the second consultation is that the clinical records record: 'abdomen: soft, no distention, no rigidity, no tenderness, no guarding or rebound tenderness.' Further the clinical records from the first consultation record 'bowel sounds normal'. Both Dr Hook and Dr Dilley gave evidence that with gastroenteritis, it would be 'uncommon' to find normal bowel sounds, even if vomiting had ceased some hours prior to examination. Dr Hook further stated that this examination is highly subjective. If one accepts the evidence from the surgeons, which I do, Dr Bilokopytov ought to have questioned his diagnosis of gastroenteritis if in fact he had found normal bowel sounds. He gave evidence that the relevance to him of normal bowel sounds was that there was no obstruction of the bowel. When it was put to him that it is unusual to find normal bowel sounds with a history of vomiting, he said he could not comment on that, suggesting that there may be a gap in his knowledge regarding the significance of his examination findings. Dr Bilokopytov states that he listened to the bowel sounds through a stethoscope; however Michelle and Victoria stated that he never used a stethoscope.

67. The evidence suggests therefore that the clinical findings on examination on 22 and 24 February were consistent with a diagnosis of appendicitis or retrocaecal appendicitis. In fact, based on the evidence of the family and Dr

Bilokopytov, appendicitis was considered as a differential diagnosis, but not eliminated by any additional investigations or referrals.

68. I note however that Dr Wilson and Associate Professor Roche were of the view that the care and management in the first consultation was reasonable overall. This was because on the balance of probability gastroenteritis is a far more common presentation and in the absence of abdominal pain and if one assumes there were no abdominal features other than 'it hurts all over', which can happen with gastro, one cannot say that appendicitis is the more likely diagnosis.

69. Dr Wilson's position was that Luca's symptoms were non-specific and the diagnosis for viral gastroenteritis was reasonable given the presentation in the notes. Dr Wilson was further of the opinion (contrary to the other general practitioners) that there are no specific blood tests for appendicitis and hence this was not appropriate. She also stated that ultrasound and CT scan were not appropriate in the circumstances.

70. Dr Hook's evidence was that at the time of the second consultation, Luca was not improving and further investigation was necessary. He stated that blood tests were certainly necessary and once these results were received, the need for other investigation (such as CT scan) would have been apparent. This was a view shared by the GP expert witness Dr Lynch who also felt that urine microscopy and culture; and ESR and / or CRP to assess the inflammation were all required. He stated that had these tests been ordered the results would demonstrate that Luca's condition was a bacterial illness and not viral gastroenteritis prompting admission to hospital. The key concern for Dr Lynch was that Luca's condition was not improving and Dr Bilokopytov did not properly consider managing other diagnostic alternatives.

71. In short, it appears to me that had a diagnosis of appendicitis been made during the second consultation in particular, the majority opinion of the experts was that referral to a hospital emergency department for further

examination and testing was required. Suspicions as to a diagnosis of appendicitis could have been addressed in the consulting room of the GP by obtaining a detailed history regarding issues relevant to hydration – fluid input and output; degree of vomiting, diarrhoea, lethargy and pain – localised or specific. Dr Wilson and Associate Professor Roche gave evidence that the extent of the examinations undertaken would in part be guided by the appearance of unwellness, but would include vital signs (blood pressure and pulse); observation of sunken eyes or dry eyes and dry mouth by exposing the tongue; and skin tugour. Depending on the findings on examination, referral and further testing might be warranted.

72. All the GP experts agreed that general practitioners are given adequate training through the College of General Practitioners (RACGP) in relation to diagnosing appendicitis and its management. Nonetheless, it remains difficult to diagnose.

Evidence regarding the report of pain and Lucas presentation at both consultations

73. Turning now to Luca's presentation prior to death and more specifically what symptoms existed and what symptoms were discussed during the consultations of 22 and 24 February 2017. There was a clear division in the evidence on this issue. In some respects that is unsurprising, as Luca's mother, sister and Dr Bilokopytov were all giving evidence based on their memory of events which were recorded days, weeks or months after the events in question. Dr Bilokopytov did make contemporaneous notes, at or immediately after the consultations and at a time when he had no inkling or belief that Luca would die. However, on his own evidence, the clinical records were not an exhaustive account of all that was said or done during the consultations and as he said in evidence, 'I record only what was significant for me to exclude a condition, so I don't record normal findings'. Pertinent to this was his evidence that he attaches 'great significance' to tenderness and/or pain in the right iliac fossa region and that it 'would be

one of the most important factors, how to suspect appendicitis, pain in the point of McBurney (right iliac fossa)'.

74. He had never seen a case of retrocaecal appendicitis before, which all experts agreed, could present in an atypical fashion. Dr Bilokopytov stated in evidence and to police that Luca's death came as a huge shock to him as Luca never presented with abdominal pain, and by that he meant both localised or general pain, hence the recording in his notes of 'no abdo pain'.

75. Both Michelle and Victoria however were adamant that Luca did present with 'pain everywhere' and when his abdomen was 'poked' during the second consultation he responded with 'yes it's sore, my belly is sore' and that this was reported to Dr Bilokopytov.

76. All three witnesses, Michelle, Victoria and Dr Bilokopytov held firm to their evidence and were largely unshaken during cross examination. All three came across as honest witnesses. Michelle wrote her first statement within weeks of Luca's death, as did Victoria, and at that early stage they both reported that Luca complained of pain to Dr Bilokopytov. Dr Bilokopytov contemporaneous notes record 'no abdo pain.' As a result it is difficult in the circumstances to definitively find where the truth lies.

77. In determining whether in fact pain was reported during the consultation, I note and place weight upon the expert evidence of Dr Hook, specialist surgeon, whose experience spans 20 years and has included more than 600 appendectomies. In his written report he stated that a '*very odd feature of the case is the absence of abdominal pain as noted by the general practitioner. Complete absence of pain in an otherwise well patient is exceptionally uncommon in any presentation of appendicitis…I find it difficult to explain an absence of pain in a patient ultimately proven to have acute appendicitis*.' He maintained this opinion in oral evidence stating that pain all over was consistent with generalised peritonitis in all quadrants of the abdomen and normally associated with significant tenderness to palpation in all quadrants of the abdomen. He found it unusual that the

general practitioner never appeared to record any report of severe tenderness on abdominal examination, given the likely state of the appendix by Friday, namely inflamed at a minimum and possibly ruptured. He did note however that with a retrocaecal appendix, you have to push harder on the anterior wall to induce pain or discomfort and that in his experience surgeons will usually be prepared to press quite firmly, whereas other clinicians may not.

78. Dr Dilley stated additionally that with retrocaecal appendicitis difficulty walking will become predominant when the appendix is inflamed.

79. I find on balance that there was a complaint of general pain made by both Luca's mother Michelle, Victoria and Luca himself during both consultations. I note that Dr Bilokopytov, both in his signed police statement and in oral evidence, made specific mention to right iliac fossa pain being a classic sign of appendicitis and in his statement asserts, contrary to the evidence of the family, that he in fact showed both Michelle and Victoria how to find and palpate the appendix, located in that region. He agreed during his oral evidence to the suggestion that he attaches *great significance* to pain or tenderness in the right iliac fossa region. This to my mind raises the very real possibility that Dr Bilokopytov's contemporaneous entry in the clinical records of 'no abdo pain' represented no pain in the right iliac fossa region but says nothing of whether general pain was reported. Although he stated in evidence that a stomach bug would not necessarily result in a report of pain, the evidence from the GP experts was that it was a normal finding with gastroenteritis. In my view it is likely that Dr Bilokopytov did not record the complaint of 'generalised pain' as he saw it as a 'normal' finding consistent with his diagnosis of gastroenteritis.

80. The first time Dr Bilokopytov turned his mind to Luca's two consultations, the first of which Michelle stated was no longer than 10-12 minutes and the second of which Victoria said 'the doctor didn't put the time in to see exactly where Luca's stomach was sore' and little was discussed, was on the Monday the 27th, 3 days after he had last seen Luca. The context of Dr

Bilokopytov's reflections of those consultations was that he had seen roughly 50 patients in between the first consultation on the Wednesday and his death on the Monday. The fact that Luca's death took Dr Bilokopytov absolutely by surprise is consistent with his evidence that his examination and palpation of the right iliac fossa region elicited no specific complaint of pain in *that region* and pain in that region was in his mind the significant clinical finding upon which diagnosis of appendicitis is made. Whether he applied sufficient pressure may be one explanation for the absence of a report of pain upon palpation in that specific region. The fact that Luca was suffering from retrocaecal appendicitis may have also contributed to a lack of reported pain in that specific region. Nonetheless, as stated, I do accept the evidence of both Michelle and Victoria that Luca complained of pain everywhere and in my view, this was interpreted by Dr Bilokopytov as being consistent with his diagnosis of gastroenteritis and given it can be an entirely 'normal' finding with such a diagnosis, it was not recorded.

81. Ultimately, no criticism was levelled at Dr Bilokopytov by two of the peer review experts, Dr Wilson and Associate Professor Roche regarding his failure to refer Luca to a hospital *if* a complaint of general pain was reported to him during the second consultation. Both experts stated that they may also have made a decision to send Luca home, with pain relief and instructions for follow up in the clinic or at emergency if the pain worsens. Both experts agreed that Dr Bilokopytov's entry *TCB* (to come back) *for rv* (review) *if gets worse/new symptoms/abdo pain* was a reasonable response to the presentation given the complexity of managing patients in the real life setting and being mindful in giving their opinions of hindsight bias.

82. Dr Lynch held a different view and stated clearly that given the history of presentations and phone calls, the only option was referral to an emergency department. The key concern of Dr Kelly was that Luca's condition was not improving and Dr Bilokopytov did not either consider or eliminate through further investigations, other diagnostic alternatives.

83. The division in opinions throughout the evidence regarding the reasonableness of the diagnosis, management and treatment of Luca by three very experienced GP experts, highlighted yet again the complexities in diagnosis that exist in medicine. Complexity in getting a diagnosis right every time and getting the treatment and management plan right, every time.

84. Those complexities are best addressed by all clinicians spending adequate time obtaining a detailed history and conducting a thorough examination on every occasion that a patient presents with symptoms, no matter how common those symptoms are and no matter how benign the condition appears. Human error is inevitable in medicine. And evidence of errors with diagnosis and management is commonly seen in this jurisdiction.

85. Rather than criticise Dr Bilokopytov (who I note has been reviewed by the Medical Council NSW with no further action taken) for his management of some aspects of Luca's presentation, it is far more productive in my view to remind the medical profession that, as counsel assisting submitted in her closing address, 'the devil is in the detail.' To search for the details requires probing and scrutinising the patient's presenting history and conducting a thorough and complete examination to establish the provisional diagnosis, but includes eliminating the differential diagnosis, in particular when the differential diagnosis if left untreated can present as a medical emergency and fatal.

Findings

86. As a result of considering all of the documentary and oral evidence heard at the inquest, I am able to make the following findings required by section 81(1) of the Act:

i. The deceased person was Luca Thomas Raso;
ii. Luca died on 27 February 2017 at 15.45 at Tomaree Community Hospital;

iii. Lucas' cause of death was peritonitis resulting from an antecedent cause of ruptured gangrenous acute appendicitis;
iv. The manner of Lucas' death was that he died as a result of a misdiagnosis of his presenting condition on 22 and 24 February 2017; namely a misdiagnosis of gastroenteritis and the consequential failure therefore in receiving the appropriate referral and treatment for his appendicitis.

Recommendations

87. The family asked that I consider making the following recommendations:

1. That general practitioners should be encouraged to assess and record vital signs for any patients with a provisional or differential diagnosis of gastroenteritis/appendicitis at each consultation during the period of the illness.
2. Recommend to the Bay Medical Group that they consider including in their policies manual a reminder to doctors to assess and record vital signs for patients with a differential diagnosis of gastroenteritis/appendicitis during the period of the illness.
3. Distribute the findings to the RACGP with an invitation to publish a case note in the College journal – Australian Journal of General Practice.

88. I have given each of the above proposed recommendations due consideration. I note that Clause 1 of Schedule 4 of the Health Practitioner Regulation 2016, in operation at the relevant time and currently in existence in an almost identical form- under the heading 'Information to be included in a record' states clearly that a clinician *must* include in a record …*'the results of any physical examination of the patient…the results of any tests performed on the patient….any clinical opinion reached…any treatment plan'*- amongst other things. I further note that a failure to comply with the record keeping Regulations can amount to unsatisfactory professional conduct under sec 139B(1)(b) of the *Health Practitioner Regulation National Law.* In my view these statutory provisions are powerful reminders to all clinicians as to the required standards expected regarding clinical notes

and provide a safeguard to minimise risks in the diagnosis, treatment and management of patients. I do not, therefore, propose to make any recommendations. I do propose to provide these findings to the RACGP.

Closing remarks

89. I would like to thank the Officer in Charge of this inquest, Detective Senior Constable Matthew Sutton for his thorough investigation. I am most grateful to my Counsel Assisting, Ms Ragni Mathur, and her instructing solicitor Ms Mena Katawazi of the NSW Department of Communities and Justice for their assistance.

90. On the final day of the hearing Luca's family played a very moving photographic slideshow of Luca, depicting a young boy who loved life and was well loved by all that knew him. Present in court that day were many of Luca's friends and of course his mother and siblings. I am grateful to them for sharing such precious memories of Luca.

I close this inquest.

Teresa O'Sullivan
State Coroner
13 December 2019