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| <i>Judgment: approved by the court for handing down<br/>(subject to editorial corrections and proofing prior to publication)*</i> | <b>Delivered: 03/09/2026</b> |

**IN THE CORONERS COURT IN NORTHERN IRELAND**

**BEFORE THE CORONER OF NORTHERN IRELAND  
MARIA DOUGAN**

**IN THE MATTER OF AN INQUEST TOUCHING UPON THE DEATH OF  
JANET LAYLAND**

**Mr Aidan Sands KC (instructed by Mr Brendan Garland and Ms Sheena Mahaffey,  
Coroners Service for Northern Ireland) on behalf of the Coroner**  
**Mr Aidan Corrigan (instructed by Ms Catherine McReynolds, Directorate of Legal  
Services) on behalf of the South Eastern Health and Social Care Trust (SEHSCT)**  
**Mr Nick Scott (instructed by Mr Mark McAdam, CMG Cunningham Dickey Solicitors)  
on behalf of the Next of Kin**

***Introduction***

[1] The inquest proceeded in Lagside Courts on 9, 10 and 11 June 2025. During the inquest, I received evidence from a number of witnesses, and I carefully considered further statements, together with voluminous notes, records and reports which were admitted pursuant to Rule 17 of the Coroners (Practice and Procedure) Rules (Northern Ireland) 1963. While it is not feasible to set out all the evidence in these findings, I wish to make clear that I have duly considered all evidence presented before reaching my conclusions.

[2] The deceased, Janet Layland, born on 29 December 1951 of 46 Lawson Park, Portavogie, Newtownards, died on 1 August 2020 in the Ulster Hospital, Dundonald.

***Summary of events***

[3] The deceased was admitted to the Ulster Hospital, Dundonald, on 28 July 2020 with a two-week history of vomiting and abdominal pain. She was diagnosed with a small bowel obstruction secondary to intra-abdominal adhesions and was managed initially with intravenous fluids and a nasogastric (NG) tube. Although her hyponatraemia improved, the obstruction failed to resolve, and a decision was made to proceed with surgery on 31 July 2020.

[4] At induction of anaesthesia on 31 July 2020, faeculent fluid was noted within the oropharynx. The NG tube produced no aspirate and, when replaced, approximately 2.5 litres of gastric and enteric contents were drained from the stomach. The deceased developed respiratory compromise from the outset of anaesthesia and required high levels of ventilatory and oxygen support.

[5] Laparotomy confirmed a small bowel obstruction caused by adhesions. During surgery the deceased developed worsening respiratory and cardiovascular instability requiring escalating organ support. A small bowel perforation occurred during release of adhesions which was recognised and managed.

[6] Following surgery, the deceased was admitted to the Intensive Care Unit in severe multi-organ failure. Despite comprehensive intensive care treatment and maximal organ support, her condition continued to deteriorate. She died at 05:20 hours on 1 August 2020.

### *Scope of the inquest*

[7] It is well-established that an inquest is a fact-finding exercise. It does not determine civil or criminal liability. The applicable standard of proof is the civil standard, namely the balance of probabilities.

[8] A provisional scope document was presented to the Properly Interested Persons (PIPs) prior to the inquest commencing. None of the PIPs suggested any additions, deletions or other adjustments. The scope document read as follows:

“The following is a preliminary definition of the scope of the inquest proceedings:

1. This inquest will examine the four basic factual questions as required by Rule 15 of the Coroners (Practice and Procedure) Rules 1963;
  - a. the identity of the deceased,
  - b. the place of death,
  - c. the time of death, and,
  - d. how the deceased came by her death.
2. The identity of the deceased is not in dispute. The place and time of death can be ascertained on the available evidence.
3. The inquest will examine all issues concerning the causes and the timing of death.

4. In relation to how the deceased came by her death, the Coroner will examine the period from the Deceased's admission to hospital on 28 July 2020 until her death on 1 August 2020, and in particular:
  - a. The precise causes of the deceased's death;
  - b. The nursing care and medical treatment received by the deceased while in hospital prior to, during and after surgery;
  - c. The circumstances in which her death occurred.
  - d.
5. At the discretion of the Coroner, subject at all times to the relevant legislative provisions the inquiry may stretch more widely than strictly required and examine other circumstances as seem necessary to the Coroner.
6. The inquest proceedings will consider the four questions as required by Rule 15 and Rule 22(1) of the Coroners (Practice and Procedure) Rules (Northern Ireland) 1963, concerning:
  - (a) the identity of the deceased;
  - (b) where she died;
  - (c) when she died; and
  - (d) how the deceased came by her death.
7. The Coroner will consider the particulars required to register the death with the Registrar.
8. The purpose of an inquest is not to attribute blame, either on a criminal or civil basis.
9. This document sets out the Coroner's provisional view of scope for this inquest. It may be revised at any time by the Coroner as and when considered appropriate according to the circumstances."

[9] I am satisfied that this inquest has addressed all the relevant issues and that, where possible, I have reached a finding in respect of the matters which come within the scope of this inquest.

## *Review of the evidence*

*Geoffrey Layland*

[10] Mr Geoffrey Layland, husband of the deceased, gave evidence to the inquest. He described how, after leaving school, the deceased worked in administrative and retail roles before marrying him on 4 April 1972, at which time she became a homemaker. The couple had three sons. Throughout their marriage, he described the deceased as generally fit and well until mid-2020. The couple had two dogs which they walked regularly during the COVID-19 lockdown.

[11] Mr Layland recounted that on 16 July 2020 the deceased attended hospital with abdominal pain, where she experienced a prolonged wait in the emergency department in the Ulster Hospital. She left before being treated and she returned home, and her GP subsequently treated her for suspected gastroenteritis. However, her condition did not improve; she became increasingly weak, with abdominal swelling, vomiting and dizziness. Despite further contact with her GP and changes in medication, her condition deteriorated and, following further medical advice, an ambulance was called and she was admitted to hospital on 28 July 2020.

[12] Mr Layland stated that during this admission the deceased underwent investigations which identified a bowel obstruction, and surgery was recommended. The deceased consented to the procedure, which was carried out on 31 July 2020. Later that evening he was contacted by the hospital and asked to attend urgently.

[13] On attending, Mr Layland spoke with a consultant who explained that adhesions related to a previous ectopic pregnancy had affected her intestines, resulting in obstruction. During the course of surgery, the bowel was found to be inflamed, and she suffered a severe adverse reaction leading to multi organ failure. He was informed that her prognosis was poor. The deceased passed away in hospital the following day, 1 August 2020.

[14] In evidence, the deceased's husband described his wife as a loving, caring and considerate person, "beautiful on the outside and even more beautiful on the inside". He said she was a born-again Christian through whom "the love of God did flow", and that she was genuine, honest, loving and forgiving. He reflected that, were she present today, she would be the first to forgive those who had let her down. He stated that she practised what she preached and was the cornerstone of the family, whose love and devotion kept them together.

*Dr Daniel Hughes*

[15] Dr Daniel Hughes, the deceased's GP, gave evidence to the inquest. Dr Hughes outlined how the deceased developed vomiting on 16 July 2020, reportedly following the consumption of a sausage roll. This was associated with abdominal pain and mild diarrhoea. She contacted the out-of-hours service and was advised to attend the Emergency Department, which she did.

[16] On 23 July 2020, the deceased was reviewed by Dr Hughes, by telephone. She reported ongoing vomiting, up to three times daily, with associated nausea, though she was maintaining oral intake. He linked it to the earlier attendance on 16 July 2020 and the Emergency Department notes and thought it may be gastroenteritis. Arrangements were made for blood testing (U&E); however, she did not attend for this investigation, as it later transpired, she was too unwell to attend, which Dr Hughes did not know at that time.

[17] The deceased re-contacted her GP practice on 28 July 2020, reporting persistent vomiting, now up to four times daily, together with weakness and exhaustion, though without abdominal pain. She was passing flatus. Dr Rocks arranged an ambulance for hospital admission as further urgent assessment was required due to continuous vomiting and weakness and deterioration in the deceased's condition.

*Claire McKnight*

[18] Staff Nurse Claire McKnight gave evidence to the inquest. She cared for the deceased on 29 July 2020 and documented in the deceased's nursing notes on three occasions. At 11.03 hours on 29 July 2020, she recorded the deceased's observations, with a NEWS score of 1 attributable to a mildly elevated heart rate. She was fully conscious with a Glasgow Coma Score of 15. Intravenous fluids were administered, and a nasogastric tube was in situ with four hourly aspiration and documented on the fluid balance chart. She explained that "four-hourly aspiration" referred to the management of an NG tube. The tube would ordinarily be connected to a drainage bag for continuous free drainage. At four-hourly intervals, the drainage bag would be disconnected and a syringe attached to the tube in order to aspirate and remove any additional gastric fluid that had not drained spontaneously. She went on to describe how a urinary catheter had been inserted to allow accurate measurement of urine output, which was recorded hourly.

[19] A CT scan of the head was arranged, with results awaited. The surgical plan included continuation of nasogastric drainage, ongoing intravenous fluids, and regular blood sampling, including twice daily urea and electrolyte measurements.

[20] Later that day, at 18.58 hours, Staff Nurse McKnight documented that the deceased's sodium level was noted to be 118, and she escalated this to the medical team for review.

[21] At 20.17 hours, Staff Nurse McKnight recorded that, following medical assessment, a plan was made for administration of a bolus of intravenous fluids followed by continued fluid therapy, with close monitoring of sodium levels through repeat blood tests overnight.

[22] Staff Nurse McKnight explained to the inquest that the deceased's fluid balance chart recorded fluid intake and output, including drainage from the NG tube. The chart also showed hourly records of urine outputs. The NG tube was on free drainage and subject to a medical plan of four-hourly aspiration. The chart

recorded NG aspirates of 600ml at 09.00 hours and 120ml at 13.00 hours. When asked why there was no entry for 17.00 hours, particularly as a urine entry was recorded at this time, Staff Nurse McKnight could not recall, and she accepted that there was an opportunity to do so.

[23] A further entry at 19.00 hours recorded "400 BE", which Staff Nurse McKnight interpreted as meaning "bag emptied". She accepted that this appeared to record the emptying of the drainage bag rather than aspiration and that no aspiration was separately documented at that time. A further entry at 06.00 hours the following morning also recorded "400 BE". Whilst the medical plan required four-hourly aspiration, Staff Nurse McKnight stated that it would generally have been nursing practice to aspirate the tube when emptying or changing the drainage bag, notwithstanding the absence of a specific record.

[24] The fluid balance chart recorded total NG losses of 1,520ml over the relevant 24-hour period. Staff Nurse McKnight stated that she had no concerns regarding the functioning of the NG tube, which she considered to be patent and draining appropriately. In her view, the continuing output from the tube and the absence of symptoms such as nausea or vomiting were reassuring indicators that it was functioning effectively.

[25] Staff Nurse McKnight was unable to recall any specific policy or procedure governing the management of NG tubes at the relevant time. Her evidence was that concerns about NG tube function would primarily be guided by the patient's clinical condition. Indicators that might suggest a problem included nausea, vomiting or an absence of drainage from the tube. She explained, however, that a reduction in output was not necessarily concerning, as the objective of NG tube management was often for drainage to decrease as the patient's condition improved. Whether a lack of output caused concern would therefore depend on the overall clinical picture.

[26] Staff Nurse McKnight stated that, if there was no drainage and concerns arose regarding the functioning of the tube, nursing staff would initially seek to address the issue themselves, including consideration of replacing the tube. If concerns persisted, they would be escalated to the medical team. She said that she would have had no hesitation in reporting a lack of drainage to medical staff where this was clinically indicated.

[27] Staff Nurse McKnight also gave evidence regarding the clinical context in July 2020 during the Covid-19 pandemic. She explained that her ward, which had previously been an elective surgical ward, had become a mixed Covid, medical and emergency surgical ward. Nursing practice at that time sought to minimise unnecessary patient contact and staff time in side rooms through the use of PPE and the grouping of tasks where possible. She stated that these circumstances, together with patient acuity and ward pressures, could affect the timing of routine nursing tasks.

[28] Deputy Sister Michelle Kerr gave evidence to the inquest. On 30 July 2020 she was responsible for the deceased's care. She was referred to the fluid balance chart for the preceding 24-hour period. She agreed that the chart recorded NG aspirates of 600ml at 09.00 hours and 120ml at 13.00 hours on 29 July 2020, together with an entry of 400ml at 19.00 hours marked "BE", which she understood to mean "bag emptied". A further 400ml was recorded as "bag emptied" at 06.00 hours on 30 July 2020, giving a total NG output of 1,520ml over the preceding 24-hour period.

[29] In relation to the fluid balance chart for 30 July 2020, Deputy Sister Kerr explained that urine output was no longer being recorded hourly on the fluid chart because the deceased's urine output had been satisfactory and there were no concerns regarding her fluid status. She stated that, during the Covid-19 pandemic, efforts were made to reduce the frequency and duration of patient contact where possible, although routine observations and nursing care continued.

[30] Deputy Sister Kerr made two entries in the deceased's nursing notes. At 10.57 hours, she documented the deceased's observations, with a NEWS score of 2, oxygen saturation of 94% and a pulse rate of approximately 100 beats per minute. She recorded that the deceased remained nil by mouth, was receiving intravenous fluids and had both a urinary catheter and NG tube in situ. She documented that the NG tube was "patent" and that the catheter was patent and draining. The surgical plan included ongoing nasogastric drainage, four-hourly aspiration, intravenous fluids and repeat urea and electrolyte testing.

[31] Deputy Sister Kerr accepted that the nursing plan required the NG tube to remain on free drainage with four-hourly aspiration. Following the emptying of 400ml from the drainage bag at 06.00 hours, there was no documented aspiration until 15.00 hours, when a nil aspirate was recorded. Although she documented at 10.57 hours that the NG tube was "patent", there was no corresponding entry on the fluid balance chart demonstrating that aspiration had been performed or recording any drainage from the tube. She was unable to explain whether aspiration had been undertaken and not documented, or whether it had not been carried out at all, but accepted that, if it had been performed, it should have been recorded.

[32] Deputy Sister Kerr's evidence was that she considered the tube to be patent because the deceased was not exhibiting symptoms such as nausea, vomiting or increasing abdominal discomfort. She considered that a reduction in NG output could be consistent with a resolving bowel obstruction and maintained that approximately twelve hours without drainage or aspirate would not, in itself, have caused concern. She accepted, however, that there was no objective evidence at that stage that the bowel obstruction was resolving. She further accepted that she did not document the clinical factors upon which she said she relied, namely the absence of nausea, vomiting or abdominal distension. She acknowledged that this amounted to poor documentation and accepted that it would have been preferable for her

assessment and reasoning to have been recorded in the nursing notes rather than inferred from observations recorded elsewhere.

[33] At 15.00 hours a nil aspirate was recorded from the NG tube. Deputy Sister Kerr did not consider this to be concerning at the time because the deceased was not exhibiting symptoms suggestive of tube blockage or displacement, such as nausea, vomiting or abdominal distension, and no escalation was made to medical staff.

[34] Deputy Sister Kerr accepted that the purpose of regular aspiration was to assess both drainage and patency of the NG tube. She agreed that four-hourly aspiration formed part of the medical management plan and was something nursing staff were required to undertake. She further accepted that concerns regarding the absence of drainage could require escalation to medical staff and, in an appropriate case, consideration of replacing the tube. Notwithstanding this, she did not raise concerns regarding the absence of output from the tube on 30 July 2020, seek a medical review, or consider replacement of the tube. Her evidence was that, in the absence of nausea, vomiting or other overt clinical signs, twelve hours without output would not have raised alarm bells for her at that time.

[35] At 17.02 hours, Deputy Sister Kerr made a further nursing entry. She recorded that the deceased's NEWS score had increased to 3 and that supplemental oxygen was required to maintain oxygen saturations. Intravenous fluids remained in progress, the NG tube was recorded as patent with 0ml aspirated, pain was controlled with intravenous paracetamol, urine output was satisfactory and there had been no bowel motion or passage of flatus. A reduced sodium level had been identified and repeat blood testing was planned.

[36] During evidence, Deputy Sister Kerr accepted shortcomings in her record keeping. She accepted that her notes did not record the rationale for commencing oxygen therapy, nor the reasoning underpinning her assessment of the deceased's clinical condition and her decision not to escalate concerns regarding the absence of NG output. Although she maintained that these matters did not cause her concern at the time and did not alter her assessment of the NG tube, she accepted that the reasons for her decisions were not adequately documented.

[37] Deputy Sister Kerr accepted that, on the available records, only one aspiration was documented during her shift and that this yielded no aspirate. Whilst she suggested that she may have assessed the tube on other occasions, she was unable to identify any contemporaneous record supporting this. Throughout her evidence she repeatedly stated that she could not recall the events of the day or explain why the four-hourly aspiration regime had not been documented as having been carried out.

[38] In retrospect, Deputy Sister Kerr accepted that the absence of aspirate did not exclude the possibility of a blocked NG tube. She stated that her practice had changed as a consequence of her involvement in the deceased's care and that, if faced with a nil aspirate in similar circumstances today, she would escalate the matter irrespective of the presence or absence of symptoms. She confirmed that this learning had been shared with nursing colleagues. She also noted that guidance

relating to the management of drainage nasogastric tubes had subsequently been developed within the Trust.

*Ma Theresa Narag*

[39] Staff Nurse Ma Theresa Narag gave evidence to the inquest, which was admitted by way of Rule 17. The deceased was under her care during the night shift on Ward 5A on 31 July 2020. Staff Nurse Narag noted the deceased to be tachycardic, with a heart rate of approximately 120 beats per minute and had oxygen saturations of 94% on room air. She had an NG tube in situ on free drainage; and on four hourly aspirate. There was no output noted during the shift. Staff Nurse Narag stated that she performed aspiration four hourly from the tube and no gastric contents were taken out.

[40] The deceased was maintained nil by mouth and received intravenous fluids. She reported pain and nausea, which were treated with prescribed medication. Staff Nurse Narag stated that the deceased was alert and oriented throughout the period of observation.

[41] The deceased's blood results indicated hyponatraemia, with a sodium level of 125, which represented an improvement from a previously lower level of 114 recorded earlier in her admission. The deceased was handed over to the following shift on the day of her planned surgery.

*Aleyamma Binny*

[42] Staff Nurse Aleyamma Binny gave evidence to the inquest. She was on duty on 31 July 2020 in Ward 5A and was the deceased's named nurse. She explained that she ordinarily worked in Orthopaedics and had been redeployed to Ward 5A during the COVID-19 pandemic. Whilst she had previous experience of caring for patients with NG tubes, such patients were uncommon in her usual orthopaedic practice, and she had been working in Ward 5A for only a number of months prior to the deceased's admission.

[43] Staff Nurse Binny stated that she commenced duty at approximately 07.30 hours and received a nursing handover. She recalled being informed that there had been no aspiration from the deceased's NG tube and that the existing management plan was to continue. She told the inquest that she checked the drainage bag herself and observed that there was no drainage present.

[44] Staff Nurse Binny made three entries in the deceased's notes. At 12.06 hours she recorded that intravenous fluids were in progress and an NG tube remained in situ with no aspiration obtained from four-hourly and continuous drainage. The deceased was assisted with personal care, was able to sit out in a chair and had been assessed by physiotherapy. Pre-operative preparations were undertaken, and the self-retaining catheter was patent and draining.

[45] In her oral evidence, Staff Nurse Binny explained that she undertook four-hourly aspirations during her shift and that each yielded 0ml. She further stated

that there was nothing within the drainage bag. She accepted, however, that the fluid balance chart did not document all aspirations undertaken during her shift, recording only two entries of 0ml, and that she had failed to record other nil aspirates. She acknowledged that four-hourly aspirations and nil returns ought to have been documented contemporaneously.

[46] Staff Nurse Binny accepted that she was aware, at the commencement of her shift, that there had been a prolonged period without any recorded NG output. The last documented NG output had been recorded approximately 24 hours earlier. She further accepted that she did not review the overnight nursing notes before assessing the deceased that morning and was therefore unaware that a nursing entry at 03.56 hours recorded that the deceased had experienced nausea and had required analgesia overnight.

[47] Staff Nurse Binny's evidence was that she did not have concerns regarding the position or function of the NG tube at the time. She stated that the deceased appeared comfortable, was mobilising with assistance, was communicating normally and was not complaining of pain, nausea or vomiting during her shift. She considered these to be the principal clinical indicators of concern in a patient with an NG tube and, in their absence, did not believe there was a problem with the tube. She said that, at the time, she believed the absence of aspirate reflected the fact that the deceased was nil by mouth and that her stomach was empty. Accordingly, she did not escalate concerns regarding the prolonged absence of NG output to medical staff. In her evidence she accepted that the possibility of tube blockage did not cross her mind at the time.

[48] Staff Nurse Binny further accepted that she was aware the deceased was listed for surgery later that day and recalled that no change to the existing management plan was communicated following the ward round. Her understanding was that the plan remained to continue four-hourly aspiration, maintain intravenous fluids and monitor the patient pending surgery.

[49] Staff Nurse Binny made a second entry at 14.41 hours recording that the deceased remained nil by mouth and was awaiting surgery. At 18.26 hours, she recorded that the deceased was in theatre. She recalled that the deceased appeared comfortable on the day of surgery and that no concerns were identified prior to her transfer to theatre.

[50] During questioning, Staff Nurse Binny accepted that, with hindsight and the knowledge that approximately 2.5 litres of gastric contents were subsequently drained following replacement of the NG tube, she would now have escalated concerns regarding the absence of output. She accepted that her assumption that the stomach was empty had been incorrect and that a prolonged absence of aspirate did not exclude the possibility of a blocked NG tube. She stated that the case had provided important learning in relation to the management of NG tubes and that, if faced with similar circumstances now, she would give greater consideration to the possibility of tube blockage and raise her concerns with the medical team.

[51] Staff Nurse Binny also gave evidence regarding the pressures arising during the COVID-19 pandemic. She described the ward as busy, with staffing pressures and redeployed staff working outside their usual specialties. However, she accepted that there was nothing she wished to do for the deceased which she was prevented from doing by reason of the pandemic or COVID-19 restrictions. She also accepted shortcomings in her record keeping. Whilst she maintained that four-hourly aspirations had been undertaken during her shift, she accepted that these had not been properly documented within the fluid balance chart and that the nil aspirates should have been recorded contemporaneously.

*Dr Caroline Martin*

[52] Dr Caroline Martin, Consultant Anaesthetist, gave evidence to the inquest, which was admitted by way of Rule 17. On 31 July 2020 she was covering the emergency list for the theatres in the Ulster Hospital as an ST7 trainee when the deceased was added for an urgent laparotomy. The deceased underwent a preassessment with consultant Dr Terence Boyd and an anaesthetic assessment and preparation. Routine monitoring was applied and a modified rapid sequence induction was planned. An NG tube was in situ and was aspirated by Dr Martin prior to induction; no contents were obtained and she stated that it was concluded that the stomach was empty.

[53] Following induction of anaesthesia and intubation, faeculent vomit was observed within the pharynx, indicating the presence of gastric contents. The airway was secured without difficulty and Dr Martin performed suctioning via the endotracheal tube and this did not yield further contents.

[54] Dr Boyd and Dr Martin then removed the original NG tube and replaced it with a sump tube, following which approximately 2.5 litres of gastric contents were aspirated. Surgery then proceeded at 16.19 hours, and the deceased remained stable during the initial intraoperative period before care was handed over by Dr Martin to consultant Dr Gavin Harper at approximately 17.30 hours.

*Dr Terence Boyd*

[55] Dr Terence Boyd, Consultant Anaesthetist, gave evidence to the inquest. Dr Boyd was the Consultant Anaesthetist responsible for the emergency theatre list on 31 July 2020. He conducted a pre-operative anaesthetic assessment of the deceased on the ward between approximately 08.00 and 09.30 hours. He noted that, apart from hyponatraemia, which was being treated and improving, there were no significant concerns from an anaesthetic perspective. The deceased had both an intravenous infusion and an NG tube in place.

[56] Dr Boyd discussed the proposed anaesthetic, potential complications and the possible need for post-operative High Dependency Unit care with the deceased. At that stage he did not believe such care would be required, although he would review the position following surgery if necessary. He did not discuss death as a potential outcome as he did not consider her to be a high-risk patient.

[57] In his oral evidence, Dr Boyd accepted that his contemporaneous anaesthetic assessment notes were limited. He explained that the deceased had no significant relevant medical history, appeared comfortable during his assessment and, in his view at the time, was proceeding to what he considered to be a relatively straightforward emergency laparotomy. He accepted, however, that the assessment documentation did not contain any detailed consideration of the management of the NG tube.

[58] Dr Boyd stated that, during his pre-operative assessment, he observed that the NG drainage bag was empty. He accepted that he reviewed the fluid balance chart for 31 July 2020 but did not review the fluid balance chart for the preceding day. He agreed that, had he examined the chart for 30 July 2020, he would have identified a prolonged absence of NG drainage and aspirate. He described this as a “missed opportunity” and accepted that the lack of output should have prompted concerns regarding whether the tube remained patent.

[59] Dr Boyd explained that, at the time, he regarded management of the NG tube as primarily falling within the responsibility of the surgical team and ward nursing staff. He described this as an example of “silo thinking”, whereby he focused upon anaesthetic considerations and assumed that the functionality of the NG tube was being monitored by others. He accepted that he also had an opportunity to identify the problem and that, with hindsight, the absence of output ought to have been escalated and discussed with the surgical team.

[60] Dr Boyd further accepted that, had he identified the prolonged absence of drainage during his morning assessment, he would have raised the matter with the surgical team and nursing staff and sought confirmation that they were satisfied the tube remained functional. He agreed that monitoring the presence or absence of drainage from an NG tube was an important means of identifying a blocked tube and reducing the risk of significant accumulation of gastric contents.

[61] The deceased arrived in Main Theatre 3 shortly before 16.00 hours. Dr Boyd was assisted by Dr Martin. Following insertion of an intravenous line, the NG tube was aspirated prior to induction of anaesthesia. No aspirate was obtained. Dr Boyd accepted that a nil aspirate immediately prior to induction was a potential indicator that the tube was blocked or otherwise non-functional. He emphasised, however, that in a patient with bowel obstruction a nil aspirate could not safely be taken to mean that the stomach was empty. He expressly disagreed with any suggestion that the absence of aspirate permitted that conclusion.

[62] Dr Boyd explained that patients with bowel obstruction continue to produce gastric secretions and therefore remain at risk of significant gastric contents despite being nil by mouth. He accepted that the purpose of the NG tube was to reduce the volume of gastric contents present and thereby reduce, although not eliminate, the risk of regurgitation and aspiration during induction of anaesthesia.

[63] When no aspirate was obtained in theatre, Dr Boyd considered that the tube may have been blocked, kinked or displaced. He accepted that a decision then had

to be made whether to proceed with rapid sequence induction or remove and replace the tube whilst the deceased was awake. His evidence was that his longstanding practice was to proceed with rapid sequence induction, secure the airway and then replace the NG tube once the patient was anaesthetised. He explained that attempting to remove and replace an NG tube in an awake patient with a bowel obstruction carried a significant risk of inducing retching, vomiting and regurgitation of gastric contents. Dr Boyd stated that, based upon many years of experience undertaking emergency laparotomy cases, he would not ordinarily replace a potentially blocked NG tube immediately before induction. Although he acknowledged that alternative options were available, he considered that each carried significant risks and, at the time, judged it safer to proceed with induction, secure the airway and then replace the tube under direct vision once the patient was anaesthetised.

[64] During laryngoscopy, Dr Martin observed gastric contents within the deceased's oropharynx. These were suctioned and the trachea was intubated without difficulty. Dr Boyd explained that immediate intubation was necessary once gastric contents were identified in order to secure and protect the airway. A suction catheter was subsequently passed through the endotracheal tube, although no material was obtained.

[65] Further attempts to aspirate through the NG tube proved unsuccessful. The tube was therefore removed and replaced. Dr Boyd observed that the original tube was physically blocked, with material visible obstructing its lumen. Following insertion of a replacement NG tube, approximately 2.5 litres of gastric and intestinal contents were aspirated. Whilst Dr Boyd accepted that this represented a substantial volume, he stated that such volumes were not unprecedented in patients with bowel obstruction.

[66] As surgery proceeded, antibiotics and morphine were administered. An arterial cannula was inserted and blood gas analysis undertaken. Dr Boyd noted that the deceased required significantly greater ventilatory support than anticipated in order to maintain adequate oxygenation. Although there was initially no direct evidence that gastric contents had entered the lungs, he became increasingly concerned that aspiration had occurred because of the unexpectedly poor oxygenation which developed shortly after induction. He explained that, whilst gastric contents had not been visualised passing through the vocal cords and suctioning of the endotracheal tube yielded no material, the deceased's oxygen requirements were significantly greater than would ordinarily be expected in a patient with no underlying respiratory disease. It was this deterioration in oxygenation which led him to suspect that aspiration had occurred.

[67] Dr Boyd's evidence was that no anaesthetic technique could completely eliminate the risk of regurgitation and aspiration in a patient with bowel obstruction. He explained that rapid sequence induction, pre-oxygenation, cricoid pressure and gastric decompression were all measures designed to reduce risk, but none could completely prevent aspiration if significant gastric contents remained present.

Dr Boyd told the inquest that, in his opinion, the deceased most likely regurgitated gastric contents following induction of anaesthesia, at the point where protective airway reflexes were lost, rather than beforehand. He considered it unlikely that significant regurgitation had occurred whilst the deceased remained awake, as he would have expected symptoms such as coughing, spluttering or distress had that occurred.

[68] At approximately 16.30 hours, Dr Gavin Harper, the on-call Consultant Anaesthetist, attended theatre to take over responsibility for the emergency theatre list. Dr Boyd handed over the deceased's care, including her pre-operative condition, the discovery of the blocked NG tube, the aspiration of approximately 2.5 litres of gastric contents, concerns regarding possible aspiration and the deceased's ongoing oxygenation difficulties. He advised that the deceased would likely require ongoing ventilatory support and review by Intensive Care and intended to discuss the case with the Intensive Care Consultant, Dr Chris Gowers.

[69] Reflecting upon the events, Dr Boyd maintained that his decision to proceed with rapid sequence induction before replacing the NG tube was consistent with his longstanding practice in emergency surgery. He accepted, however, that the opportunity to identify the blocked NG tube arose earlier during his pre-operative ward assessment. He agreed that a patent NG tube would have substantially reduced the volume of gastric contents present at the time of induction and would therefore have reduced the risk of regurgitation and aspiration. He accepted that reviewing the preceding fluid balance records and escalating concerns regarding the prolonged absence of NG output represented a missed opportunity in the deceased's care. He further stated that, if faced with similar circumstances today, he would discuss the absence of NG output with nursing and surgical staff and seek confirmation that they were satisfied that the tube remained functional.

[70] Dr Boyd also gave evidence regarding the severity of the deceased's deterioration following the suspected aspiration event. Whilst he accepted that aspiration was a recognised complication of emergency surgery in patients with bowel obstruction, he described the subsequent clinical course as unusual and catastrophic. He stated that, over many years of anaesthetic practice, he had encountered aspiration events previously and would ordinarily have expected a patient to require a period of ventilatory support and treatment for respiratory complications. He had not previously witnessed the degree of rapid haemodynamic instability, respiratory failure and multi-organ dysfunction which subsequently developed in the deceased's case. He considered it possible that the prolonged bowel obstruction had already initiated a systemic inflammatory response and that the aspiration event may have acted as a further insult, precipitating the profound deterioration that followed.

*Dr Gavin Harper*

[71] Dr Gavin Harper, Consultant Anaesthetist, gave evidence to the inquest. Dr Harper was the Consultant Anaesthetist on call on 31 July 2020. At approximately

16.30 hours he assumed responsibility for the emergency theatre list from his colleague, Dr Boyd. By that stage the deceased had already been anaesthetised, and emergency laparotomy surgery was underway.

[72] Dr Harper received a handover from Dr Boyd and Dr Martin concerning the deceased's medical history, her acute hospital admission, the diagnosis of small bowel obstruction with associated hyponatraemia and the treatment which had been provided. He was informed that faeculent fluid had been observed within the oropharynx at the time of intubation, although none had been seen passing through the vocal cords into the trachea. He was also informed that immediate suctioning via the endotracheal tube had not yielded any fluid.

[73] Dr Harper was advised that the original NG tube had subsequently been removed and replaced after difficulties obtaining aspirate. He was informed that aspiration through the replacement tube had yielded a large volume of faeculent fluid. Dr Harper accepted that this information was conveyed to him during the verbal handover from Dr Boyd and Dr Martin and that his understanding of the events surrounding induction of anaesthesia came from that handover, as he had not been present during the induction itself.

[74] Dr Harper noted that the deceased required a significant degree of ventilatory support throughout the procedure, including high oxygen requirements and elevated ventilatory pressures. He accepted that the deceased's oxygenation difficulties were apparent from an early stage and were greater than would ordinarily be expected in a patient without pre-existing respiratory disease. He agreed that these difficulties had been identified by Dr Boyd and Dr Martin before he assumed care of the deceased.

[75] In his evidence, Dr Harper accepted that the combination of the deceased's unexpectedly high oxygen requirements, the observation of faeculent material within the oropharynx during intubation and the subsequent discovery that the NG tube was not patent made it more likely than not that some degree of aspiration had occurred at induction. He stated that, on the balance of probabilities, aspiration was the most likely explanation for the oxygenation difficulties encountered during surgery.

[76] Dr Harper continued the anaesthetic management of the deceased together with Dr Martin. Approximately one and a half hours into the operation, it became necessary to insert a central venous line and commence a noradrenaline infusion in order to maintain the deceased's blood pressure. Given the level of respiratory and cardiovascular support required, Dr Harper confirmed with Dr Gowers, Consultant in Intensive Care Medicine, that the deceased would require post-operative admission to the Intensive Care Unit.

[77] During his evidence, Dr Harper was asked about the management options available where concerns arise regarding the patency of an NG tube before induction of anaesthesia. He explained that it was not uncommon to obtain little or no aspirate immediately prior to induction, only for significant volumes of gastric contents to be

drained later once the patient had been anaesthetised and surgery had commenced. He stated that there was a balance of risk between attempting to replace an NG tube in an awake patient, with the attendant risk of inducing regurgitation, vomiting or aspiration, and proceeding to induction of anaesthesia, during which the period of unprotected airway was relatively brief before a cuffed endotracheal tube was inserted. Whilst acknowledging the competing risks, he stated that he could not say with certainty what course he would have adopted had he personally been faced with the same circumstances as Dr Boyd immediately prior to induction.

[78] At the conclusion of surgery, at approximately 18.30 hours, the deceased was transferred from theatre to the Intensive Care Unit where Dr Harper formally handed over her care to Dr Gowers and the Intensive Care team.

[79] Dr Harper also gave evidence regarding the deceased's subsequent deterioration. Whilst he had previously encountered aspiration events during anaesthesia and would ordinarily expect respiratory compromise, increased ventilatory requirements and, in some cases, cardiovascular support, he stated that the degree and speed of deterioration seen in the deceased was highly unusual. He described the development of profound cardiovascular collapse and multi-organ failure within a relatively short period of time as unexpected and not something he had previously encountered following an aspiration event occurring during anaesthesia. He told the inquest that, whilst aspiration provided a likely explanation for the deceased's respiratory difficulties, the severity of the subsequent multi-organ failure was surprising and not in keeping with what he would ordinarily expect from an isolated aspiration event.

*Dr John Canny*

[80] Dr John Canny, then a speciality surgical trainee year 5, gave evidence to the inquest, which was admitted by way of Rule 17. He first met the deceased on the afternoon of 31 July 2020 on the ward when he explained the laparotomy procedure and completed the consent form. Upon entering the theatre, he was informed by the anaesthetic team that there had been difficulty maintaining the deceased's oxygenation and that aspiration during induction was a concern. Having been advised that she was sufficiently stable to proceed, he commenced surgery.

[81] At laparotomy, the site of obstruction was identified as small bowel adherent to the area of a previous left oophorectomy and the sigmoid colon. During dissection, a small enterotomy occurred with a small spillage of bowel contents, which was promptly controlled. Following assessment with Mr Robert Kennedy, it was concluded that there was no bowel perforation or obvious sigmoid tumour. A small bowel resection and stapled anastomosis were performed. The abdomen was washed out, a drain inserted and the abdomen closed.

[82] During the operation, the deceased's condition deteriorated and increasing inotropic support was required. At the conclusion of the procedure, the anaesthetic team advised that she would remain ventilated and be transferred to the Intensive Care Unit.

[83] Later that evening, Dr Canny reviewed the deceased in ICU. Following discussion with the on-call intensivist, it was considered that her deterioration was most likely due to an inflammatory response associated with possible aspiration rather than a surgical complication. Both Dr Canny and Mr Kennedy were of the view that a return to theatre was unlikely to be beneficial.

[84] Dr Canny spoke with the deceased's husband and son, explaining the operation and her subsequent deterioration. Despite intensive care treatment, the deceased's condition continued to worsen, and she subsequently passed away the following day.

*Robert Kennedy*

[85] Mr Robert Kennedy, Consultant Surgeon, gave evidence to the inquest. He explained that the deceased was admitted under his care on 28 July 2020. She had been unwell for approximately two weeks with signs and symptoms of a small bowel obstruction, which was presumed to be secondary to adhesions arising from previous surgery for an ectopic pregnancy. On admission, the deceased was found to be profoundly hyponatraemic, with a sodium level of 113 mmol/L.

[86] The deceased was managed conservatively with intravenous fluids, nasogastric decompression and fasting. Imaging was consistent with small bowel obstruction. Mr Kennedy reviewed her daily and stated that, despite gradual correction of her sodium levels over the following 48 hours, her bowel obstruction failed to resolve. By 31 July 2020, her sodium had improved to 128 mmol/L, but she continued to demonstrate signs and symptoms of unresolved obstruction. Mr Kennedy had discussed with the deceased throughout her admission the possibility that surgery might ultimately be required. When conservative treatment failed, he advised that the point for operative intervention had been reached and she was consented for surgery.

[87] Mr Kennedy explained that the profound hyponatraemia complicated management of the deceased's bowel obstruction. He described her sodium level on admission as exceptionally low and stated that correction had to be undertaken gradually to avoid serious neurological injury. Whilst there was a desire to proceed to surgery promptly because of the unresolved bowel obstruction, he considered that surgery could not safely proceed until her sodium level improved to a level acceptable to the anaesthetic team.

[88] Mr Kennedy stated that his management plan included maintaining the NG tube on free drainage with four-hourly aspirations. The purpose of the NG tube was to decompress the stomach and upper gastrointestinal tract and minimise the accumulation of fluid. He accepted that he expected aspirations to be undertaken and recorded on a regular basis throughout the day.

[89] Mr Kennedy explained that ward practice during the COVID-19 pandemic differed significantly from normal arrangements. He frequently reviewed patients alone in their rooms, with nursing staff, junior medical staff and clinical records

remaining outside. He stated that this altered the usual multidisciplinary approach to ward rounds, during which fluid balance charts, nursing notes, blood results and clinical observations would ordinarily be reviewed contemporaneously.

[90] Mr Kennedy accepted that the fluid balance chart for 30 July 2020 recorded no NG aspirate throughout the day, with documented 0ml returns at 15.00 hours and 21.00 hours, followed by a further 0ml entry at 06.00 hours on 31 July 2020. He accepted that he had not recognised the significance of these entries during his review of the deceased on 30 July 2020. He told the inquest that, had he appreciated at that stage that there had been no drainage from the NG tube throughout the day, he would have instructed that the tube be changed that evening. He described this as something he should have identified during his review of the deceased on 30 July 2020.

[91] Mr Kennedy accepted that, when he reviewed the deceased at 08.10 hours on 31 July, he noted in the ward round entry "0ml up NG tube". He told the inquest that, at that stage, he believed the tube was likely not functioning correctly, and that blockage of the tube was a possible explanation for the absence of output. He accepted, however, that he did not document that concern within the medical records, did not record any assessment that the tube might be blocked and did not communicate his concern to the nursing staff, Dr Canny or the anaesthetic team.

[92] Mr Kennedy explained that, by the morning of 31 July 2020, his principal concern was the need to proceed to surgery without further delay. He stated that he feared the bowel might become compromised or ischaemic if operative intervention was postponed. His evidence was that, once surgery was imminent, he considered it preferable for any tube change to occur in theatre after the airway had been secured rather than on the ward. He explained that replacing an NG tube in an awake patient was uncomfortable, frequently induced gagging and vomiting and carried a risk of aspiration.

[93] Mr Kennedy accepted that this decision and rationale were not documented in the deceased's notes and were not communicated to the anaesthetic team. He agreed that, with hindsight, informing the anaesthetists that he believed the tube might not be functioning would have been appropriate. He accepted that, had the anaesthetic team been informed of his concern that the tube might not be functioning, that information may have influenced their assessment and management. He described the failure to communicate that concern as a learning point arising from the deceased's case. He further accepted that, during the COVID-19 pandemic, effective documentation and communication became even more important because clinicians were not interacting in the usual manner during ward rounds.

[94] Mr Kennedy attended theatre on the afternoon of 31 July 2020 as the procedure commenced. He was informed that the deceased had become significantly unwell during induction of anaesthesia and that aspiration was a concern. It was anticipated that she would require post-operative admission to the Intensive Care

Unit. He was advised that the original NG tube had been replaced and that approximately 2.5 litres of gastric and intestinal contents had subsequently been aspirated.

[95] Mr Kennedy accepted that a patent NG tube would have facilitated drainage of gastric contents and significantly reduced, although not eliminated, the risk of regurgitation and aspiration during induction of anaesthesia. He agreed that the prolonged absence of NG drainage represented a missed opportunity to identify that the tube was not functioning correctly. He further accepted that, had he recognised the absence of drainage on the evening of 30 July 2020, he would have instructed that the tube be changed.

[96] Mr Kennedy assisted Dr Canny during the operation. At laparotomy, all large and small bowel was viable. A loop of small bowel was identified as densely adherent to the sigmoid colon, representing the point of obstruction and consistent with previous surgery. During separation of the adhesions, a small full-thickness defect developed in the affected segment of small bowel, resulting in a minor spillage of bowel contents. Mr Kennedy described the contamination as only a few millilitres in volume. A decision was made to resect the affected segment of bowel and perform a stapled anastomosis, as this was considered safer than repair and reduced the risk of a subsequent leak. The abdominal cavity was washed out with saline and the abdomen closed.

[97] Mr Kennedy rejected any suggestion that the limited bowel contamination encountered during surgery represented a significant operative complication. He stated that the amount of contamination was minimal, entirely managed during the procedure and would not ordinarily be expected to contribute materially to a patient's deterioration. He agreed that the brief exposure of the peritoneal cavity to enteric contents, which was promptly managed during surgery, would not ordinarily be expected to be a significant contributor to the deceased's subsequent instability.

[98] Mr Kennedy was aware during surgery that the anaesthetic team were experiencing difficulties maintaining adequate oxygenation. He accepted that aspiration was considered a possible explanation from an early stage. Whilst he agreed that pulmonary aspiration was a plausible and sensible explanation for the deceased's respiratory difficulties, he noted that no gastric contents had been visualised passing the vocal cords and none had been aspirated from the trachea. He therefore considered that aspiration remained a clinical diagnosis rather than something which could be definitively proven.

[99] Mr Kennedy was guided to the opinion evidence of Dr Paul Glover, Consultant Anaesthetist, who provided an expert report on behalf of the Trust. He agreed that the presence of a patent NG tube would have facilitated gastric decompression and significantly reduced, although not eliminated, the risk of aspiration during induction of anaesthesia. He accepted that the temporal association between the observation of gastric contents within the oropharynx and

the development of immediate oxygenation difficulties made aspiration a plausible and likely explanation for the deceased's deterioration. Whilst he stopped short of accepting that pulmonary aspiration had been definitively established, he accepted that it was a sensible and reasonable explanation for the respiratory difficulties encountered during induction.

[100] Mr Kennedy further agreed with Dr Glover's opinion that the deceased's clinical course was consistent with a profound inflammatory response to a significant noxious insult. He accepted that the rapid fall in the white cell count, escalating haemodynamic instability and development of multi-organ failure were indicative of a severe inflammatory cascade. Whilst aspiration was one possible trigger, he also considered that bacterial translocation associated with prolonged bowel obstruction and bowel handling at surgery may have contributed to the inflammatory response. However, he agreed that neither the limited contamination encountered during surgery nor the bowel resection itself would ordinarily be expected to produce the catastrophic deterioration observed in the deceased's case.

[101] Mr Kennedy described the deceased's subsequent clinical decline as extraordinary and unlike anything he had previously encountered in his surgical practice. He stated that he had never previously seen a patient who appeared clinically stable prior to surgery deteriorate so rapidly into overwhelming multi-organ failure within a matter of hours. He further stated that he had never encountered a patient who had aspirated and then deteriorated to the point of unsurvivable multi-organ failure within such a short period of time. Whilst he considered aspiration to be a plausible trigger, he could not identify any single factor which satisfactorily explained the severity and speed of the deceased's collapse. He questioned whether the profound hyponatraemia, prolonged bowel obstruction, aspiration event or a combination of factors may have contributed to the catastrophic inflammatory response which developed.

[102] Mr Kennedy was questioned regarding the Medical Certificate of Cause of Death completed by Mr Canny on 3 August 2020, which recorded aspiration pneumonia due to a small bowel obstruction as the cause of death. He stated that, whilst this had been a sensible conclusion in the immediate aftermath of the deceased's death, he accepted that the term "aspiration pneumonia" was not technically accurate given the short interval between the aspiration event and the deceased's death. He considered that "aspiration" or "pulmonary aspiration" would have been a more accurate description of the relevant pathological process. He further accepted that a patent NG tube would have significantly reduced the risk of such an event occurring.

[103] Following completion of the operation, the deceased was transferred to the Intensive Care Unit for ongoing treatment and monitoring. Mr Kennedy stated that, prior to the events of 31 July 2020, neither he nor any member of the treating team had anticipated that the deceased was at risk of death from her small bowel obstruction or the proposed surgery.

[104] Dr Christopher Gowers, Consultant in Intensive Care Medicine and Anaesthesia, gave evidence to the inquest. On 31 July 2020 he became involved in the deceased's care when he was asked to arrange a post-operative Intensive Care Unit bed whilst she was undergoing surgery for small bowel obstruction. He was aware that the deceased had developed respiratory difficulties during the operation, with concerns raised regarding possible aspiration during induction of anaesthesia.

[105] Dr Gowers reviewed the deceased following her admission to ICU at approximately 18.30 hours. Although it was initially anticipated that only a limited period of critical care support might be necessary, the deceased rapidly developed a severe systemic inflammatory response with progressive multi-organ failure. Her condition was characterised by worsening cardiovascular instability, respiratory failure, metabolic acidosis, renal failure and coagulopathy.

[106] Dr Gowers remained closely involved in her treatment and oversaw extensive intensive care measures, including mechanical ventilation, fluid resuscitation, antibiotics, steroids, inotropic and vasopressor support and continuous renal replacement therapy. Following discussions with the surgical team, it was agreed that a return to theatre was unlikely to provide any benefit.

[107] At approximately 21.00 hours on 31 July 2020, Dr Gowers met with the deceased's husband and son. He explained that the deceased had developed a severe "sepsis-type" reaction following surgery. He informed the family that there had been concern regarding aspiration of a small quantity of gastric contents into the lungs during induction of anaesthesia and that a small bowel perforation had occurred during surgery. He explained that these events appeared to have triggered a severe systemic inflammatory response affecting multiple organ systems and that, despite maximal treatment, the deceased was approaching the limits of available intensive care support.

[108] In his evidence, Dr Gowers explained that the clinical syndrome observed was more accurately described as a systemic inflammatory response syndrome. He stated that such a response could arise from a number of causes, including infection, aspiration or other significant physiological insults. Where the inflammatory response was driven by infection it would be termed sepsis; however, aspiration of gastric contents could itself produce a severe inflammatory response through chemical injury caused by gastric acid. He considered it likely that the deceased's deterioration resulted from a combination of factors rather than a single isolated cause.

[109] Dr Gowers stated that the two principal insults identified during the deceased's treatment were the suspected aspiration event and the limited bowel contamination occurring during surgery. He explained that neither event appeared, in isolation, sufficiently severe to explain the magnitude of the response which followed. He noted that there was no evidence of extensive bowel ischaemia, extensive contamination or another obvious catastrophic intra-abdominal event.

[110] Dr Gowers accepted that aspiration was suspected because of the temporal relationship between the events at induction of anaesthesia and the immediate deterioration in the deceased's respiratory status. He noted that oxygenation difficulties were the first significant abnormality identified. Whilst no gastric contents had been visualised entering the trachea and none had been aspirated from the lungs; he accepted that the sequence of events made aspiration a plausible explanation for the deceased's early respiratory compromise.

[111] Dr Gowers stated, however, that he was unable to determine whether aspiration, limited intra-abdominal contamination, or a combination of both represented the primary trigger for the deceased's systemic inflammatory response. He explained that, once activated, the inflammatory process itself could lead to widespread capillary leak, tissue oedema and progressive organ dysfunction, irrespective of the original trigger. In his opinion it was not possible to distinguish with certainty between the relative contributions of the identified insults.

[112] Dr Gowers further considered that the deceased's prolonged illness prior to surgery may have reduced her physiological reserve. He noted that she had experienced a prolonged bowel obstruction, poor oral intake, vomiting and profound hyponatraemia. Whilst he did not consider the low sodium level itself to explain the subsequent deterioration, he regarded it as a marker of how significantly unwell she had been. He stated that, in his experience, patients who deteriorate most rapidly in such circumstances tend to be those subjected to the most severe physiological insults or those with the least physiological reserve. He considered that, with hindsight, the deceased's reserves of strength had likely been substantially depleted before surgery and that this probably had a material impact upon her ability to withstand the subsequent inflammatory insult.

[113] Dr Gowers agreed that the severity and rapidity of the deceased's deterioration were wholly unexpected and out of proportion to what would ordinarily be anticipated following the events identified during surgery. He stated that, despite maximal intensive care treatment, the inflammatory response progressed relentlessly and could not be stabilised. He was unable to provide a complete explanation for why the deceased developed such a catastrophic response when the apparent triggering events were comparatively limited. He described the speed and severity of the deceased's decline as wholly unexpected and disproportionate to the operative findings identified during surgery. In his opinion, neither the suspected aspiration event nor the limited bowel contamination would ordinarily be expected to produce the degree of refractory multi-organ failure which subsequently developed.

*Dr Andrew McCorkell*

[114] Dr Andrew McCorkell, then a CT2 Core Medical Trainee in Intensive Care Medicine, gave evidence to the inquest, which was admitted by way of Rule 17. Dr McCorkell commenced his shift at 20.00 hours on 31 July 2020, by which stage the deceased had already been admitted to ICU for a number of hours. On handover, he

noted that she was suffering from severe multi-organ failure and required maximal intensive care support, including ventilatory support, continuous renal replacement therapy and multiple vasopressor medications to maintain her circulation.

[115] Despite ongoing intensive care treatment, the deceased's condition continued to deteriorate. Dr McCorkell stated that she died whilst receiving full organ support and that no withdrawal of treatment had occurred. Her husband and son were present at the bedside at the time of her death. Dr McCorkell confirmed life extinct at 05.20 hours on 1 August 2020.

### *Expert evidence*

*Dr Paul Glover*

[116] Dr Paul Glover, Consultant in Critical Care and Anaesthesia at the Royal Victoria Hospital, Belfast, reviewed the perioperative care of the deceased at the request of the South Eastern Health and Social Care Trust, with particular focus on the events of 31 July and 1 August 2020. He produced a report and gave evidence to the inquest. He concluded that, prior to surgery, the deceased was a previously fit and healthy 68-year-old woman who had presented with acute small bowel obstruction secondary to adhesions from previous surgery. She was clinically and biochemically dehydrated with severe hyponatraemia, both of which, he stated, were appropriately managed. Although the bowel obstruction failed to settle with conservative treatment, her overall clinical condition had improved prior to surgery, and she would have been expected to survive the operation. Death would not have been an anticipated outcome.

[117] Dr Glover observed that there had been no documented drainage from the NG tube for at least one day before surgery despite evidence of ongoing complete small bowel obstruction. Although this absence of drainage had been recorded, to an extent, in both medical and nursing documentation, there was no evidence that it had been considered, investigated or acted upon. In his opinion, the abrupt change from significant NG drainage, including approximately 1.5 litres on 29 July 2020, to no recorded output thereafter was unusual and ought to have prompted reconsideration of whether the tube remained patent and functional. He noted that, when the original NG tube was replaced during induction of anaesthesia, approximately 2.5 litres of gastric contents were immediately aspirated, demonstrating that the tube had been blocked.

[118] Dr Glover concluded that a patent NG tube would have facilitated gastric decompression and significantly reduced, although not eliminated, the risk of regurgitation and pulmonary aspiration during induction of anaesthesia. He explained that patients continue to produce substantial volumes of gastrointestinal secretions even whilst nil by mouth and that, in the presence of ongoing bowel obstruction, a significant volume of fluid would be expected to accumulate within the stomach and small bowel unless adequately drained. He considered that pulmonary aspiration was much more likely to occur because the stomach remained

full as a consequence of the blocked NG tube, which had not been identified before induction of anaesthesia.

[119] Dr Glover further explained that the first documented nil aspirate represented an opportunity to reconsider whether the NG tube remained functional. He stated that the recording of zero drainage was an opportunity to pause and consider whether the absence of output was consistent with the clinical situation. Whilst he accepted that replacement of an NG tube carries risks, including retching, vomiting and potential aspiration, he considered that, in circumstances where there was ongoing complete bowel obstruction and no drainage from the tube, there was a strong argument for replacement of the tube before surgery in order to reduce the volume of gastric contents present at induction of anaesthesia. He acknowledged, however, that variation in clinical practice existed regarding the timing of tube replacement.

[120] Dr Glover considered that the anaesthetic management was otherwise appropriate. The deceased underwent suctioning of the NG tube before induction, rapid sequence induction, application of cricoid pressure and prompt insertion of a cuffed endotracheal tube. However, faeculent liquid was present in the pharynx during laryngoscopy, indicating regurgitation of gastric contents. Although tracheal suctioning did not retrieve any aspirated material, Dr Glover noted that this did not exclude aspiration. He further observed that the absence of aspirated material on suctioning could not be relied upon to exclude pulmonary aspiration because gastric contents may rapidly disperse throughout the lower airways and lungs.

[121] Dr Glover identified a clear temporal relationship between the regurgitation event and the immediate development of respiratory difficulties. From the onset of anaesthesia, the deceased required unexpectedly high oxygen concentrations and ventilatory support. He stated that “the temporal relationship between the presence of gastric contents in the pharynx and difficulty with oxygenation and ventilation would strongly suggest that a clinically significant pulmonary aspiration event occurred at induction of anaesthesia”. He further observed that, where no aspirate was obtained from the NG tube immediately before induction despite ongoing bowel obstruction, consideration should have been given to the possibility that a significant volume of gastric contents remained undrained.

[122] Dr Glover observed that the deceased’s respiratory deterioration was accompanied by rapidly increasing oxygen requirements, worsening blood gas parameters and abnormalities on chest imaging. He considered these findings to be consistent with significant pulmonary injury occurring at or shortly after induction of anaesthesia. Whilst he acknowledged that aspiration could not be definitively proven, he regarded pulmonary aspiration as the most likely explanation for the respiratory compromise which developed. He did not consider that bronchoscopy would have altered management, as there was no evidence of particulate material obstructing the airways.

[123] In relation to the surgery, Dr Glover noted that a small bowel perforation occurred during release of adhesions, resulting in minor contamination of the peritoneal cavity. He accepted that spillage of enteric contents into the abdomen could contribute to an inflammatory response. However, he considered that the contamination was promptly recognised and managed and was unlikely to have been a significant contributor to the deceased's deterioration. He noted that respiratory difficulties, physiological instability and evidence of pulmonary dysfunction were already present before surgery had significantly progressed. In his opinion, the contribution of the surgical complication to the subsequent inflammatory response was likely "minor at most". He further explained that the consequences of bowel contamination would ordinarily develop over a period of hours rather than immediately and were therefore unlikely to explain the rapid onset of deterioration observed in this case.

[124] Dr Glover also reviewed the evidence of possible bowel ischaemia. Whilst the pathology demonstrated ischaemic changes within the small bowel, he noted that there was no clear evidence of extensive bowel infarction or necrosis and that the deceased had been clinically stable prior to surgery. He further stated that evidence supporting bacterial translocation from obstructed bowel as the primary cause of such a catastrophic deterioration was lacking.

[125] Following surgery, the deceased was admitted to Intensive Care in severe multi-organ failure requiring ventilation, cardiovascular support and renal replacement therapy. Dr Glover considered the Intensive Care management to have been appropriate throughout. He agreed that broad-spectrum antimicrobials, haemodynamic support, renal replacement therapy and mechanical ventilation were all appropriate interventions. He further agreed that a return to theatre would not have provided additional benefit.

[126] Dr Glover noted that, despite aggressive treatment, the deceased developed progressive refractory multi-organ failure affecting her lungs, cardiovascular system, kidneys and coagulation system. He observed that there was no evidence of another readily identifiable cause of shock such as haemorrhage, anaphylaxis, pulmonary embolism or cardiac tamponade. In the absence of such explanations, he considered the clinical picture to be most consistent with an overwhelming inflammatory response producing widespread capillary leak, severe hypoxic respiratory failure, circulatory collapse and progressive organ dysfunction.

[127] Dr Glover placed particular significance upon the rapid evolution of the deceased's inflammatory response. He noted a precipitous fall in her white cell count, from persistently elevated levels prior to surgery to profound leucopenia following admission to Intensive Care. He regarded this as evidence of an overwhelming pro-inflammatory response to a significant noxious insult and considered it consistent with the severe systemic inflammatory syndrome which subsequently developed. He further noted that the magnitude and speed of the response were highly unusual and out of proportion to what would ordinarily be expected from the operative findings alone.

[128] Dr Glover was asked whether the deceased's severe hyponatraemia may have contributed to the inflammatory response. He explained that the principal physiological consequences of hyponatraemia affect the brain and that he would not ordinarily regard hyponatraemia as a mediator of a systemic inflammatory response syndrome. Whilst he accepted that the deceased's prolonged illness may have reduced her physiological reserve, he did not consider the sodium abnormality itself to provide an explanation for the profound inflammatory cascade which developed. He stated that there appeared to have been something particular about the deceased's individual physiological response which resulted in such an overwhelming reaction to the precipitating insult.

[129] In summary, Dr Glover concluded that the deceased developed "a profound, severe, inflammatory response in response to a precipitating event". He found a clear temporal association between regurgitation of gastric contents at induction of anaesthesia and the subsequent development of hypoxia, respiratory failure and physiological instability consistent with pulmonary aspiration. He further concluded that pulmonary aspiration was much more likely to occur because the stomach remained full as a consequence of the blocked NG tube, which had not been identified before induction of anaesthesia.

[130] Whilst Dr Glover accepted that both the surgical perforation and evidence of bowel ischaemia may have contributed to the deceased's inflammatory response, he considered their contribution to be minor. His overall opinion was that pulmonary aspiration, occurring in the context of a blocked NG tube and a stomach containing a significant volume of gastric contents, was the most likely precipitating event leading to a profound inflammatory response, refractory multi-organ failure and ultimately the death of the deceased.

*Ms Maggie Gairdner*

[131] Mrs Maggie Gairdner, Director of Safety and Experience/Deputy Chief Nurse /Patient Safety Specialist, at Surrey and Borders Partnership NHS Foundation Trust, reviewed the nursing care provided to the deceased from admission to the Ulster Hospital until surgery on 31 July 2020. She produced two reports on my behalf and gave evidence to the inquest. Her review focused upon management of the nasogastric tube, nursing observations, nursing records and communication relating to NG tube care. Following receipt of additional documentation, including fluid balance charts and the Trust's responses to her initial report, she produced a supplementary report in July 2024.

[132] Ms Gairdner noted that the deceased was admitted with a small bowel obstruction and was managed conservatively with intravenous fluids and an NG tube. The nursing records indicated that the tube was to be aspirated four-hourly. Following receipt of the fluid balance charts, Ms Gairdner accepted that aspiration and drainage from the NG tube had been documented between 29 July 2020 and 06.00 hours on 30 July 2020, with approximately 1.5 litres drained during that period.

However, thereafter there were repeated recordings of either no aspirate or no output despite evidence of ongoing bowel obstruction.

[133] Ms Gairdner concluded that there was no consistent documentary evidence demonstrating that the NG tube was monitored and aspirated four-hourly as planned. Whilst aspiration and drainage may have occurred, she considered that the nursing records did not clearly evidence this. She also questioned how the tube could repeatedly be described as “patent” where there was limited evidence demonstrating that patency had been assessed, verified or confirmed.

[134] The deceased vomited on 29 July 2020, and Ms Gairdner initially noted that vomiting can dislodge an NG tube. Following review of the fluid balance charts, she accepted that continued drainage after the vomiting episode suggested that the tube was likely positioned correctly at that stage. Her criticism related primarily to the subsequent period, when drainage ceased despite ongoing evidence of bowel obstruction. She further observed that the deceased continued to experience nausea, had no recorded bowel actions or flatus and continued to demonstrate features of an unresolved bowel obstruction. In her opinion, these findings were inconsistent with any assumption that the obstruction was resolving or that normal gastric emptying had resumed.

[135] A significant feature of Ms Gairdner’s evidence was the absence of a documented nursing care plan relating to management of the NG tube. She expressed the opinion that such a care plan should have been in place and should have clearly set out the management of the tube, the actions to be taken if aspirate was not obtained and the escalation procedure where concerns arose. She explained that a nursing care plan should be individualised to the patient, reflect the applicable policy and standards of care, identify the actions required of nursing staff and include an evaluation of whether the planned care had been delivered or concerns had arisen requiring escalation. She regarded nursing care plans as an important means of communication between nursing staff and considered the available records insufficient to determine clearly what care had been planned and whether that care had been fully delivered. In her supplementary report she maintained this criticism notwithstanding the Trust’s submission that a separate nursing care plan was not required, referring to the Royal Marsden Manual as emphasising the importance of comprehensive and individualised care planning.

[136] Ms Gairdner was also critical of the quality of the nursing documentation. She described the electronic nursing records as limited and considered that it was therefore difficult to evaluate fully the nursing care provided. In her view, the records did not clearly demonstrate what assessments had been undertaken, what care had been provided, or what action had been taken when output from the NG tube ceased. She also considered that it was unclear from the records what response had been made on occasions when the deceased’s NEWS score increased. She further noted that NEWS2 guidance required assessment of elevated scores and, where escalation was not considered necessary, the rationale should ordinarily be documented. She found no clear evidence within the records demonstrating what

review or response had occurred. She additionally stated that free drainage and aspirate should ordinarily be recorded separately so that tube function could be properly assessed.

[137] Ms Gairdner agreed with the findings of the Trust's Level 1 Significant Event Audit that the NG tube was blocked and that this was not identified until after the regurgitation event at induction of anaesthesia. She considered that "the absence of nasogastric drainage in the presence of an ongoing small bowel obstruction should have prompted an assessment of patency". She noted that recognised guidance where aspirate cannot be obtained includes reassessment of the tube, seeking senior advice, consideration of radiological confirmation of position and replacement of the tube where appropriate. She stated that there was no evidence within the records that such measures had been undertaken by either nursing or medical staff.

[138] Ms Gairdner further noted that the first documented nil aspirates represented opportunities to reassess whether the tube remained functional. In her opinion, concerns regarding patency should have arisen as soon as staff were unable to obtain aspirate from a tube which had previously been draining. She stated that nursing staff should initially have considered whether repositioning the patient or reassessing the tube altered the result and, if no aspirate remained obtainable, the matter should have been escalated to the nurse in charge and discussed with medical staff. Whilst she accepted that practice may vary between organisations, she considered that the combination of ongoing bowel obstruction, absence of drainage, persistent nausea and absence of bowel motions or flatus should have prompted reconsideration of tube position and patency and, if necessary, escalation of concerns.

[139] Ms Gairdner stated that blockage of an NG tube was a recognised complication and that nursing staff should remain vigilant to the possibility that a tube may become blocked or displaced. She explained that nurses who were appropriately trained and assessed as competent could remove and replace NG tubes. In circumstances such as those of the deceased, however, she considered that discussion with the treating medical team would ordinarily be appropriate before replacement occurred.

[140] Ms Gairdner was shown the Trust's revised NG tube policy and associated training material shortly before giving evidence. Whilst she had not had an opportunity to undertake a detailed review, she welcomed the fact that the Trust had revised its policy and produced specific training addressing NG drainage tubes, escalation of concerns and management of absent aspirate.

[141] In her overall conclusions, Ms Gairdner stated that "action should have been taken when there was no drainage or aspirate apparent from her nasogastric tube." She considered that nursing staff should have escalated concerns regarding patency at the earliest stage when aspirate could not be obtained. However, she emphasised that this was "not purely a nursing duty", noting that medical staff were also aware

of the absence of drainage, the lack of bowel motions and flatus, and were equally capable of assessing the tube and taking corrective action.

[142] In relation to causation, Ms Gairdner expressly deferred to the opinion of Dr Glover. She accepted his opinion that the deceased suffered a significant pulmonary aspiration event at induction of anaesthesia associated with the volume of gastric contents present. She did not offer an independent opinion that the nursing issues identified by her caused the death, considering that question to fall outside her area of expertise.

### ***Lessons learned***

#### *Maggie Parks and Charles Martyn*

[143] Ms Maggie Parks, Director of Surgery and Elective Care, Maternity and Paediatrics, and Mr Charles Martyn, Medical Director, provided a joint witness statement on behalf of the Trust dated 11 June 2025. The statement was produced following a request from me for details of measures implemented by the Trust following the deceased's death.

[144] Ms Parks and Mr Martyn explained that the Trust's previous nasogastric tube policy, issued in 2019, addressed nasogastric tubes used for feeding but did not deal specifically with nasogastric drainage for decompression purposes. They stated that the concerns identified within Ms Gairdner's expert review prompted a review of the policy and the development of revised guidance addressing both feeding and drainage tubes.

[145] The Trust subsequently developed and consulted upon a revised policy entitled "*Insertion and Ongoing Confirmation of the Position of Nasogastric, Orogastric and Salem Sump Tubes for Feeding or Aspirate in Adults*". The policy was approved in March 2025, became operational in April 2025 and was uploaded to the Trust intranet in May 2025. It applies to tubes used for both feeding and aspiration and expressly recognises that such tubes may be inserted for gastric drainage in addition to nutritional support.

[146] The revised policy highlights the risk of tube misplacement or displacement, refers to National Patient Safety Agency guidance and provides that nursing and medical staff must not assume correct tube position on the basis of the appearance of aspirate or the absence of respiratory symptoms. The policy further requires gastric aspirate to be measured and recorded and provides for ongoing monitoring and documentation of drainage volumes. It also states that medical advice should be sought immediately where there are concerns regarding drainage, difficulty breathing, vomiting, choking, coughing, or evidence of blood or gastric contents.

[147] The policy introduces a specific decision-making pathway where aspirate cannot be obtained. The pathway directs staff to undertake further assessment, including repositioning manoeuvres, repeat aspiration attempts and, where aspirate remains unavailable, seeking senior medical advice and considering replacement of

the tube and/or radiological confirmation of position. The policy further states that the tube should not be used where its position cannot be confirmed.

[148] The policy also requires relevant staff to undertake training and competency assessment relating to insertion and management of NG tubes. It incorporates reference to the Royal Marsden procedures, requires completion of appropriate documentation and includes a decision tree addressing the actions to be taken where aspirate cannot be obtained.

[149] In addition, the Trust produced educational material entitled “NG Tube Insertion and Management of Sump Tubes” for delivery to nursing staff within surgical services. The training package addresses insertion of drainage tubes, ongoing observations, measurement and recording of aspirate volumes, identification of complications, escalation procedures, documentation requirements and recognition of poor drainage or tube blockage. It identifies reduction of aspiration risk as one of the purposes of gastric decompression and instructs staff to escalate concerns regarding tube blockage, poor drainage or patient deterioration to senior medical staff.

[150] Ms Parks and Mr Martyn stated that the revised policy and associated training were introduced to improve the management of nasogastric drainage tubes, strengthen guidance on assessment of tube position and patency, and support escalation where concerns arise regarding tube function. The revised arrangements were presented as part of the Trust’s response to learning identified through review of the circumstances surrounding the death of the deceased.

### *Conclusions on the evidence*

[151] I find, on the balance of probabilities, that the deceased’s death on 1 August 2020 was preventable. Had the significance of the absence of nasogastric drainage been recognised, the position and patency of the nasogastric tube assessed, and the blocked tube replaced prior to induction of anaesthesia, the volume of gastric contents within the stomach would have been significantly reduced and the subsequent pulmonary aspiration would, on balance, have been avoided. I am satisfied that the aspiration precipitated the profound inflammatory response, refractory multi-organ failure and ultimately the death of the deceased. Accordingly, had those opportunities not been missed, the deceased’s death on 1 August 2020 would, on the balance of probabilities, have been prevented.

[152] On the evidence before the court, I am satisfied that there were a number of missed opportunities in the care and treatment of the deceased. The findings which follow are made on the balance of probabilities.

### *Nasogastric Tube Management*

[153] I find that the nasogastric tube was intended to facilitate gastric decompression and relieve intraluminal pressure in the setting of an ongoing

complete small bowel obstruction. Whilst the obstruction remained unresolved, continued drainage would ordinarily have been expected.

[154] I find that there had been no effective drainage from the nasogastric tube for at least twenty-four hours prior to surgery. This was documented, to an extent, in both the medical and nursing records. I accept the evidence of Dr Glover and Ms Gairdner that this was a significant clinical finding.

[155] I find that the nasogastric tube had previously drained significant volumes. In the context of an unresolved bowel obstruction, the subsequent absence of aspirate or drainage should have raised concern that the tube was blocked, displaced or otherwise not functioning correctly. I accept Ms Gairdner's evidence that concern regarding patency should have arisen from the first nil aspirate and find that, by the afternoon of 30 July 2020, the failure to obtain aspirate should have prompted reassessment of the tube.

[156] I find that this did not occur. The lack of drainage was not adequately investigated or acted upon despite continuing evidence of bowel obstruction, including abdominal distension, absence of bowel motions and flatus, and ongoing nausea. I am satisfied that those features were inconsistent with any clear resolution of the obstruction and should have prompted reassessment of the position and patency of the tube.

[157] I find that the medical plan required four-hourly aspiration of the nasogastric tube. The records do not demonstrate that this occurred consistently or that the recorded nil aspirates prompted adequate reassessment. I further find that opportunities existed on both 30 and 31 July 2020 to assess the position and patency of the tube and, if necessary, replace it. Those opportunities were not taken.

#### *Monitoring, Documentation and Escalation*

[158] I find that there is no evidence that nursing staff undertook any documented reassessment of the position or patency of the nasogastric tube following the nil aspirates, or specifically escalated concerns regarding its function to the nurse in charge or medical staff.

[159] I find that the fluid balance chart was inadequate and did not provide a sufficiently clear record of nasogastric aspiration and drainage to support safe clinical decision-making. I accept Ms Gairdner's evidence that it was not always possible to distinguish between aspirated volumes and free drainage, which should ordinarily have been recorded separately.

[160] I further find that the nursing records were limited and fell below the standard of record keeping expected in these circumstances. They did not clearly document the assessments undertaken, the response to absent aspirates, evaluation of tube patency, escalation of concerns or the rationale for decisions made. I also find that there was no documented nursing care plan identifying the required

monitoring, escalation pathway or action to be taken if aspirate or drainage could not be obtained.

[161] I find that there is no clear documentary evidence of what response, if any, was made to elevated NEWS scores or why escalation was not considered necessary on those occasions.

#### *Communication and Clinical Review*

[162] I accept Ms Gairdner's evidence that concerns regarding tube patency should have been escalated by nursing staff. I also accept her evidence that responsibility did not rest with nursing staff alone. Medical staff were aware that the tube was not draining, that the deceased had not passed bowel motions or flatus and that the bowel obstruction persisted. I find that they were equally capable of assessing the tube and taking corrective action.

[163] I find that communication between the nursing and medical teams was inadequate. Relevant information was known to members of both teams but was not brought together, adequately documented or acted upon.

[164] I find that, by the morning of 31 July 2020, Mr Kennedy had identified that there had been no drainage from the nasogastric tube during the preceding twenty-four hours and recognised that it may not have been functioning correctly, with blockage being a possible explanation. He accepted in evidence that, had he appreciated the significance of the absent drainage on 30 July 2020, he would have instructed that the tube be changed.

[165] I further find that Mr Kennedy did not document his concern or communicate it to nursing staff, Dr Canny or the anaesthetic team. Had he done so, it may have influenced the assessment and management of the deceased before induction of anaesthesia. I find that this represented a missed opportunity to identify and address the blocked tube before induction.

#### *Pre-operative and Anaesthetic Assessment*

[166] I find that the prolonged absence of nasogastric drainage and concern regarding possible tube dysfunction were not specifically highlighted to the anaesthetic team before induction of anaesthesia.

[167] I accept Dr Glover's evidence that, in the presence of an ongoing complete small bowel obstruction, the failure of the nasogastric tube to drain should have prompted assessment of its patency. I further accept his evidence that a functioning nasogastric tube would have facilitated gastric decompression and significantly reduced, although not entirely eliminated, the risk of regurgitation and pulmonary aspiration.

[168] I find that Dr Boyd was unaware that the nasogastric tube had not drained for a prolonged period prior to surgery. He had not been informed of any concern

regarding its function and did not review the fluid balance chart for the preceding day, 30 July 2020. I find that he ought to have done so.

[169] I find, on the balance of probabilities, that had the blocked nasogastric tube been replaced before induction of anaesthesia, the stomach would have been substantially decompressed before induction. When the tube was subsequently replaced, approximately 2.5 litres of gastric and enteric contents were drained. I am satisfied that this, together with the blockage identified in the original tube, demonstrated that the tube had not been functioning effectively and had failed to provide gastric decompression.

[170] I accept Dr Glover's evidence that the anaesthetic management at induction was otherwise appropriate. The nasogastric tube was suctioned before induction, rapid sequence induction was undertaken, cricoid pressure was applied and the airway was promptly secured by insertion of a cuffed endotracheal tube.

#### *Pulmonary Aspiration and Subsequent Deterioration*

[171] I accept Dr Glover's evidence that there was a clear temporal association between the regurgitation of gastric contents at induction of anaesthesia and the immediate development of hypoxia, respiratory compromise and ventilatory difficulties. I find, on the balance of probabilities, that the deceased suffered a clinically significant pulmonary aspiration at induction.

[172] I find that, although a perforation of the small bowel occurred during surgery, it was promptly recognised and managed. Respiratory difficulties and physiological instability were already present before the surgical procedure had significantly progressed. I further find that the contribution of the perforation and associated contamination to the subsequent deterioration was minor and was not the principal cause of the inflammatory response which followed.

[173] I accept Dr Glover's evidence that there was no other readily identifiable cause for the profound shock state and multi-organ failure which subsequently developed.

[174] I find that the deceased developed a profound systemic inflammatory response characterised by severe respiratory failure, cardiovascular collapse, renal failure, coagulopathy and progressive multi-organ dysfunction. I accept the evidence of Dr Glover and Dr Gowers that the magnitude and speed of that response were highly unusual and out of all proportion to what would ordinarily have been expected from the operative findings alone.

[175] I find that the deceased's physiological reserve had likely been diminished by her prolonged illness, persistent vomiting, dehydration and severe hyponatraemia. I accept, however, Dr Glover's evidence that the hyponatraemia itself did not explain the profound inflammatory cascade which developed.

## *Cause of Death*

[176] I find, on the balance of probabilities, that the pulmonary aspiration at induction of anaesthesia was the precipitating event which triggered the profound inflammatory response leading to refractory multi-organ failure and death. Although the magnitude and speed of that response were wholly unexpected and could not reasonably have been predicted, I am satisfied that the aspiration set in motion the sequence which led to the deceased's death.

[177] I find that the treatment subsequently provided in Intensive Care was timely and appropriate. Once refractory multi-organ failure had developed, I am satisfied that there was no realistic additional intervention likely to have altered the outcome.

[178] I therefore find that the deceased died as a consequence of pulmonary aspiration at induction of anaesthesia associated with an unrecognised blocked nasogastric tube. Had the failure of the tube to drain been recognised and acted upon, and the tube assessed and replaced prior to induction, the stomach would have been substantially decompressed, and the aspiration would, on balance, have been avoided. Although the severity of the subsequent inflammatory response was highly unusual and could not reasonably have been foreseen, I am satisfied that the aspiration was the precipitating event which led to the deceased's refractory multi-organ failure and death.

[179] I find that death was due to:

1(a) Multi-organ failure

Due to

1(b) Pulmonary aspiration at induction of anaesthesia associated with a blocked nasogastric tube

Due to

1(c) Small bowel obstruction due to intra-abdominal adhesions requiring laparotomy

2 Previous abdominal surgery; acute hyponatraemia.

[180] I commend the Trust for the learning identified through the Serious Adverse Event Review and for the introduction of a revised policy and associated training relating to nasogastric drainage tubes. I am not, however, satisfied that those measures fully address the particular circumstances which arose in this case. The evidence established that the deceased's nasogastric tube had previously been functioning before drainage ceased despite the continuing presence of a complete small bowel obstruction. The revised policy does not expressly identify a prolonged absence of drainage in those circumstances as a trigger for escalation, reassessment

of tube position and patency, and active consideration of replacement. In my view, further clarification of the policy in this respect would assist in reducing the risk of a similar occurrence in the future.

### *Postscript*

[181] The deceased was a much-loved wife, mother, grandmother and friend. Her husband described her as a kind, caring and considerate woman, deeply devoted to her family and her Christian faith. He spoke movingly of her as the cornerstone of the family and of the love, forgiveness and devotion which characterised her life. It was clear from his evidence that she was deeply loved and that her death has left a profound and lasting loss for those closest to her.

[182] The circumstances of her death have given rise to important learning. This inquest has highlighted the importance, in a patient with an ongoing bowel obstruction, of recognising and acting upon the cessation of drainage from a nasogastric tube which had previously been functioning. More broadly, it has demonstrated the importance of effective monitoring, accurate documentation and clear communication between those responsible for a patient's care, so that significant clinical information is brought together, properly assessed and acted upon when required.

[183] I acknowledge the steps already taken by the Trust in response to the deceased's death and have identified separately the further matter which, in my view, requires consideration. It is my hope that the learning arising from her death and from this inquest will inform future clinical practice and help to reduce the risk of similar circumstances arising in the future.

[184] I conclude by expressing my sincere condolences to the deceased's husband, children and wider family for their loss, and I thank them for the dignity and patience they have shown throughout the inquest process.