

**SHERIFFDOM OF LoTHIAN AND BORDERS AT EDINBURGH**

**[2019] FAI 7**

EDI-B1032-18

**DETERMINATION**

**BY**

**SHERIFF ALISON STIRLING, ADVOCATE**

**UNDER THE INQUIRIES INTO FATAL ACCIDENTS AND SUDDEN DEATHS ETC  
(SCOTLAND) ACT 2016**

**into the death of**

**LINSEY COTTON**

Edinburgh, 18 February 2019

**DETERMINATION**

The sheriff, having considered the information presented at the inquiry, determines in terms of section 26 of the Inquiries into Fatal Accidents and Sudden Deaths etc (Scotland) Act 2016 that:

Linsey Cotton, who was born on 22 August 1982 and who resided latterly at Her Majesty's Prison Edinburgh, died on 20 March 2016 at 3.30 am in the Combined Assessment Unit at the Royal Infirmary of Edinburgh.

1. In terms of section 26(2)(a) of the Act Linsey Cotton died on 20 March 2016 at 3.30 am in the Combined Assessment Unit at the Royal Infirmary of Edinburgh.
2. In terms of section 26(2)(b) and (d) of the Act there are no findings to be made, no accident resulting in her death having occurred.

3. In terms of section 26(2)(c) of the Act her death was caused by:
  - 1(a) pulmonary thrombo-embolism
  - (b) Deep venous thrombosis of the right calf
- 2 Obesity
- Acute cervicitis
4. In terms of section 26(2)(e) of the Act there are no precautions which could reasonably have been taken and which might realistically have resulted in her death being avoided had they been taken.
5. In terms of section 26(2)(f) of the Act there were no defects in any system of working which contributed to her death.
6. In terms of section 26(2)(g) there are no other facts which are relevant to the circumstances of her death.

## RECOMMENDATIONS

In terms of section 26(1)(b) of the Act there are no recommendations to be made.

## NOTE

### Introduction

[1] An inquiry into the death of Linsey Cotton, born on 22 August 1982 and who resided latterly at Her Majesty's Prison Edinburgh, was required by virtue of section 2(4)(a) of the Fatal Accidents and Sudden Deaths etc (Scotland) Act 2016 because her death occurred while she was in legal custody. Her death was reported to the

procurator fiscal in March 2016. On 29 August 2018 the procurator fiscal submitted notice of the inquiry to Edinburgh sheriff court, and a first order on 3 September 2018 fixed a preliminary hearing for 29 October 2018. Five days were set aside for the inquiry in the week commencing 4 February 2019. At the preliminary hearing a further preliminary hearing was fixed for 27 November 2018. On 27 November 2018 the matter was continued to the inquiry commencing on 4 February 2019.

### *Participants and representation*

[2] The participants at the inquiry were NHS Lothian, the Prison Officers Association Scotland and the Scottish Prison Service. They were represented by Mr Holmes, Mr Phillips and Mr Fairweather respectively. Mr Crosbie procurator fiscal depute appeared for the Crown. No family members were in attendance at any of the hearings, nor were they represented.

### *Witnesses and evidence*

[3] The participating parties entered into a joint minute agreeing facts which could be admitted into evidence without the need for a number of witnesses to be led. Oral evidence was led at the inquiry from Louise Anthony and Robyn Carnie, nurse practitioners at HMP Edinburgh, and from Dr Angela Maxwell and Dr William Smith, GPs at HMP Edinburgh.

[4] I had regard to the witness statements of Dr Katherine Weaver, Chalmers Sexual Health Centre, Chalmers Street, Edinburgh, David Wright and John Grieve, prison

officers at HMP Edinburgh, Angela Swinton and Alison Crone, nurse practitioners at HMP Edinburgh, and Dr Eleri Williams, specialist registrar at the Royal Infirmary of Edinburgh. All parties had agreed the evidence of these witnesses in the joint minute.

[5] I also had regard to expert reports prepared by Dr Robert Ainsworth, BSc (Hons) MBChB FRCPath DipFMS, consultant forensic pathologist, dated 23 May 2016, Dr Michael Johnston, FCEM FRCS RCPS (Glasg) DA(UK), consultant in emergency medicine, dated 17 May 2018, Dr Smruta Shanbhag MBBS (Goa) MD (Goa) MRCOG(UK), consultant gynaecologist and gynaecological oncologist, dated 2 March 2018, Dr Katharine Morrison MRCGP MFHom DRCOG DCCH DMJ dated January 2018 and Dr Daniel Rutherford MB ChB MRCGP FRCP(Edin), dated 24 October 2018. All of the experts were instructed by the Crown with the exception of Dr Rutherford. He had been instructed by NHS Lothian in relation to a potential issue regarding the prescription of norethisterone to Ms Cotton. All parties had agreed the relevant conclusions of these experts in the joint minute.

### **The legal framework**

[6] This inquiry was held under section 1 of the Act and governed by the rules set out in the Act of Sederunt (Fatal Accident Inquiry Rules) 2017 (SSI 2017/103). The purpose of such an inquiry is to establish the circumstances of the death and to consider what steps, if any, might be taken to prevent other deaths in similar circumstances. The sheriff's determination after the conclusion of the evidence and submissions requires to set out the sheriff's findings as to the circumstances mentioned in section 26(2) and any

recommendations as to any of the matters mentioned in section 26(4) which might realistically prevent other deaths in similar circumstances. In this inquiry the procurator fiscal represents the public interest. An inquiry is an inquisitorial process. The purpose of the inquiry is not to establish civil or criminal liability. The sheriff's determination is not admissible in evidence and may not be founded on in any judicial proceedings of any nature.

### **Summary**

[7] Having considered the oral evidence, the expert reports and the joint minute, I find the following facts to have been established.

[8] On 14 June 1999 Ms Cotton was diagnosed as suffering from deep vein thrombosis of her right calf which was confirmed by a Doppler scan. She had had a three day history of increasing pain in her right calf with associated swelling. She was a non-smoker and there was no obvious medical history apart from being overweight. She was pregnant at the time, although medical staff did not know this. She was prescribed tinzaparin and warfarin until January 2000. When reviewed at the anticoagulation clinic on 20 March 2000 a repeat scan was negative for deep vein thrombosis.

[9] On 9 March 2003 she was diagnosed with hypothyroidism.

[10] On 4 April 2003 she was prescribed tinzaparin by a hospital doctor during her second pregnancy, and on 1 December 2003 she was re-prescribed tinzaparin by her GP.

[11] In January 2004 she was referred to an anticoagulation clinic at a hospital but did not attend.

[12] On 28 May 2014 she was diagnosed with gout in her right toe. On 30 May 2014 she attended at her GP surgery suffering from gout. She was advised to lose weight. She advised that she was struggling to lose weight.

[13] On 3 June 2014 she was referred to the Dietetics department of NHS Lothian by her GP. Her BMI was 47.4. She was keen for help to lose weight. She had tried controlling her diet, swimming, attending a gym and Weight Watchers but had struggled to lose any weight. Her back pain and gout would have been helped by weight loss. On 11 December 2014 she was discharged from the Dietetics department as she had not attended an appointment and had not contacted them to arrange another.

[14] On 21 August 2014, 16 September 2014, and 19 November 2014 she attended at her GP practice suffering from gout.

[15] On 10 December 2014 Ms Cotton went to her GP surgery because she was suffering from menorrhagia (heavy and prolonged menstrual periods). She declined a vaginal examination. She had not previously had a smear test. An appointment was made for her to attend a smear test in January 2015 and she was prescribed a higher dose of thyroxine. She did not attend for her smear test.

[16] On 12 August 2015 she went to her GP because of pain in the dorsum of both feet. Her symptoms were indicative of chronic pain syndrome associated with sleep disturbance. She was prescribed amitriptyline.

[17] On 17 August 2015 she was diagnosed as suffering from type II diabetes mellitus. She also had an iron deficiency due to a long history of menorrhagia.

[18] On 8 October 2015 she was sentenced to 3 years' imprisonment backdated to 17 September 2015 at Paisley sheriff court having been convicted of fraud.

[19] Between 17 September 2015 and 24 September 2015 she was imprisoned in lawful custody at Her Majesty's Prison Cornton Vale.

[20] On 17 September 2015 she underwent an admission assessment in HMP Cornton Vale. She was noted as appearing "relaxed and chatty". On 18 September 2015 she was seen by a prison GP and a full medical history was obtained. She suffered from chronic pain (hand and foot), gout, type II diabetes, hypothyroidism, deep vein thrombosis (1999), and menorrhagia.

[21] From 24 September 2015 Ms Cotton was imprisoned in lawful custody at Her Majesty's Prison Edinburgh. She was in lawful custody, usually residing within HMP Edinburgh, 33 Stenhouse Road, Edinburgh, at the time of her death.

[22] On 1 October 2015 she had severe pain in her left foot which was reducing her mobility and causing her some anxiety. She was given paracetamol and advised to elevate her leg on the bed for periods throughout the day.

[23] On 12 October 2015 she was seen by a prison GP after complaining of left foot pain and struggling to walk. The GP arranged to have her bloods checked in November 2015 in relation to her diabetes.

[24] On 27 October 2015 she was seen at the diabetes clinic within the prison. Her BMI was over 40. Weight loss was discussed with her by the nurse. She was commenced on metformin to assist with glycaemic control.

[25] On 9 November 2015 she was seen by a prison GP because her metformin prescription had been making her unwell. She was continued on this medication and provided with diet and lifestyle advice.

[26] In about November 2015 Ms Cotton wrote to her former GP from HMP Edinburgh, stating that despite complaining about suffering pain she was not being prescribed the same medication in prison as she had been prescribed while at liberty. She requested that her former GP write a letter to the prison doctors explaining the pain and symptoms she suffered from and to provide a list of the medications she was prescribed him. By letter dated 17 November 2015 her GP wrote to the prison GP, suggesting that Ms Cotton was hypersensitive to pain and had a chronic pain syndrome.

[27] On 18 November 2015 a gynaecology appointment was requested for Ms Cotton at the Chalmers Sexual Health Centre, Edinburgh, given her long history of menorrhagia which had worsened in the previous two years.

[28] On 20 January 2016 she attended an appointment at the said Chalmers Sexual Health Centre. It was noted that she had had four months of menorrhagia, cramping pains, clots and flooding. Norethisterone and cerazette, which she had been on for over one month, were noted to have had no effect. Her last smear test had been eight years previously. She was noted to be significantly overweight. A smear test was carried out

and she had a Mirena intra uterine system (IUS) inserted. That IUS came out and on 2 February 2016 a further appointment was requested.

[29] Norethisterone was a valid short-term treatment choice for Ms Cotton for her heavy menstrual bleeding, despite her past history of pregnancy-related venous thromboembolism and obesity, pending more definitive long-term treatment. The prescriptions for norethisterone issued by HMP medical staff were compatible with the range of recommendations for the use of norethisterone in heavy menstrual bleeding outlined in the British National Formulary.

[30] On 6 March 2016 she spoke to a nurse about continued heavy vaginal bleeding and said that she was considering a hysterectomy.

[31] On 7 March 2016 she was seen by a nurse and stated that her legs didn't feel like her own. She appeared to be breathless walking along the corridor. The nurse took a range of observations. Her weight was 116kg and her BMI was 40.1. Ms Cotton reported she had lost 6kgs and intended on losing more weight in an attempt to reverse her type 2 diabetes.

[32] On 9 March 2016 she attended at the Chalmers Sexual Health Centre when a colposcopy was carried out, abnormal cells having been detected during her smear test. A loop excision of the transformation zone to remove the pre-cancerous cells was performed under local anaesthetic. She consented to the procedure. Bleeding was excessive but was controlled by diathermy by the end of the procedure. The procedure was successful. She was expected to have a further smear test 6 months later.

[33] On her return to HMP Edinburgh she was seen by a prison GP on the hall. She complained of shaky legs and shortness of breath. Observations were carried out. It was arranged that she would be taken to hospital for assessment.

[34] She was admitted to the Western General Hospital, Edinburgh as an emergency admission with tremors and feeling generally unwell. An ECG showed sinus rhythm and a chest X-ray showed cardiomegaly. Given her symptoms she was transfused two units of packed red blood cells. An outpatient appointment was requested in relation to her cardiomegaly. On 10 March 2016 she was discharged, and a discharge letter was sent to the prison health centre and copied to the Gynaecology department at the Royal Infirmary of Edinburgh.

[35] On 11 March 2016 she told a prison GP that she was feeling faint. Observations were taken. She said that she was feeling better and was advised to increase fluids. She was listed to be reviewed over the following days.

[36] On 14 March 2016 nurse practitioner Alison Crone was asked to see Ms Cotton, who was feeling generally unwell and breathless. Her breathlessness settled quickly on sitting down. Medical observations were all within the normal range. She was placed on hourly observations overnight and advised to raise the alarm if she felt worse. A note was left for the GP to review her in the morning.

[37] On 15 March 2016 she was reviewed by a prison GP. Observations were taken and she was advised to spend the day in bed.

[38] By 16 March 2016 nurses at the prison had offered Ms Cotton the use of a wheelchair.

[39] An appointment to replace Ms Cotton's IUS had been arranged for 16 March 2016. She was unable to attend because she would have required a wheelchair to get to the appointment, and her transport with a wheelchair could not be accommodated. She needed a wheelchair because the medical centre was situated in a hilly area and she was suffering from breathlessness. A further device would not have been inserted on that date in any event, because the results of the colposcopy were not yet known.

[40] On 17 March 2016 nurse practitioner Alison Crone saw Ms Cotton who was complaining of ongoing breathlessness on exertion. The breathlessness settled quickly when she sat down. The nurse practitioner discussed matters with the GP.

[41] That evening prison officer David Wright was on duty when Ms Cotton advised over the intercom from her cell that she was having trouble breathing. Mr Wright went to her cell and unlocked the door. He saw Ms Cotton sitting on her bed. He thought she looked as if she was having a panic attack, and so he left the cell door open and called for a nurse to attend. The nurse attended to her.

[42] On Friday 18 March 2016 at about 12.30 pm nurse practitioner Angela Swinton was asked to attend to see Ms Cotton as she was having breathing difficulties. Angela Swinton noted that Ms Cotton was out of breath on exertion. Ms Cotton said that she had become out of breath over a short period of time. She had used her inhaler, but it had been ineffective. Her temperature was found to be within normal limits. Her respirations were slightly elevated. Her saturations were lower than the normal rate. Her pulse was raised. Her blood pressure was lower than normal. Angela Swinton was aware that Ms Cotton had recently had a blood transfusion. After completing her

observations she returned to the prison medical centre to discuss Ms Cotton with Dr Angela Maxwell.

[43] Dr Angela Maxwell had been a GP for around 28 years, had worked in a number of prisons, and had seen Ms Cotton two or three times in HMP Edinburgh. Dr Maxwell knew Ms Cotton's medical history and that she had recently been at the hospital.

Because of her multiple conditions, it was difficult to reach a decision about her diagnosis when she became unwell. Nurse practitioner Angela Swinton asked Dr Maxwell to review Ms Cotton urgently because the nurse had concerns about Ms Cotton's ongoing issues, particularly her shortness of breath, which was intermittent rather than constant. On Friday afternoons in HMP Edinburgh there is a "lockdown" because fewer prison officers are on duty, and Dr Maxwell required to visit Ms Cotton in her cell and to make arrangements to do so.

[44] Before visiting Ms Cotton, Dr Maxwell looked at Ms Cotton's notes, and she also searched the hospital lab results to see if her blood results were available. Having seen the results Dr Maxwell knew that Ms Cotton was still anaemic and that this was possibly why she was short of breath. Because she was short of breath, Dr Maxwell also looked to see if there were results for a D-Dimer blood test. That test is not specific, but if the level was sufficiently high it would suggest thrombosis. Dr Maxwell saw that a D-Dimer test had not been done when Ms Cotton was at the hospital and so Dr Maxwell assumed that this meant the hospital had no particular concerns about a thrombotic episode. Having read Ms Cotton's notes Dr Maxwell felt that she had a reasonably full picture of Ms Cotton's medical condition.

[45] When Dr Maxwell saw Ms Cotton in her cell, she appeared anxious. It was hard to assess her colour as the cell was not well lit. Ms Cotton did not appear to be cyanosed. She was breathing fairly rapidly. Dr Maxwell asked her about her symptoms. Dr Maxwell specifically considered a diagnosis of deep vein thrombosis because Ms Cotton had suffered from this during her pregnancy in the late 1990s. Ms Cotton said she had no chest pain. Coughing up blood can be a symptom of pulmonary embolism, but Ms Cotton said that she had not coughed anything up. She did not complain of any leg pains or swelling of the legs, and none was visible on examination. Dr Maxwell calculated Ms Cotton's Wells score to see if she was at risk of deep vein thrombosis and pulmonary embolism. Her Wells score was only 1, due to her previous history of deep vein thrombosis, and in the absence of any clinical signs she was at low risk of deep vein thrombosis. Her Wells score for pulmonary embolism was 3, owing to her rapid heart rate and previous history of deep vein thrombosis, but the score would require to be over 4 for pulmonary embolism to be likely. The scores were reassuring. If they had been higher, Dr Maxwell would have sent Ms Cotton to hospital at that point.

[46] Having examined her and found no indication of deep vein thrombosis, Dr Maxwell was concerned that Ms Cotton might be suffering from an infection as a result of the operation to her cervix the previous week. It is not unusual for infection to occur after such procedures, and it was possible that her symptoms were associated with infection. The letter from the gynaecologist had suggested prescribing a broad spectrum antibiotic if there were concerns about infection. Dr Maxwell was also aware that

Ms Cotton's neutrophil count was raised, which was suggestive of a bacterial infection. Dr Maxwell knew that Ms Cotton was awaiting an echocardiogram in relation to her cardiomegaly, but since Ms Cotton did not have chest pains Dr Maxwell regarded a heart issue as less likely to be the cause of her breathlessness. She also considered Ms Cotton's anaemia, which was secondary to her heavy menstrual bleeding, as a possible cause of her breathlessness. Ms Cotton had previously been thought to be asthmatic, but the prison GPs were not sure if that diagnosis was correct. When she had attended at the hospital, her inhaler had been re-started. Ms Cotton's inhaler had not relieved her breathlessness, which suggested that asthma was not the cause of her breathlessness. Dr Maxwell concluded that infection was the possible reason for her breathlessness and that it was appropriate to prescribe antibiotics and to monitor Ms Cotton, and for her to be referred to hospital if her condition worsened. Dr Maxwell was aware that although there would be a GP at the prison on the Saturday morning, that GP was there to deal with prisoners admitted on the Friday night, and the nurses would be relatively unsupported over the weekend. Antibiotics were commenced that afternoon. Ms Cotton did not require admission to hospital on the Friday.

[47] On Saturday 19 March 2016 prison officer John Grieve came on duty at 7.30 am. He knew that Ms Cotton had health issues, but nothing of note had been passed to him from the night shift. He carried out cell check on her first thing in the morning. Ms Cotton stayed in her cell for most of the morning, as many prisoners do on Saturdays. He saw Ms Cotton being pushed to the medical room in her wheelchair and then being pushed back to her cell. He carried out further cell checks on Ms Cotton at

12.30 pm and at 2 pm, but did not see anything of note. At about 4.30 pm he carried out a double numbers check with prison officer David Wright. He saw Ms Cotton lying on her bed, struggling to breathe. He observed the actions taken by David Wright, the nurses and the paramedics.

[48] Nurse practitioner Louise Anthony had regular contact with Ms Cotton and knew her medical history. She was a primary care nurse and a diabetic link nurse within HMP Edinburgh and saw Ms Cotton from time to time to review her diabetes. They had a good relationship. Ms Cotton was amiable and an excellent patient. She took on board the medical advice she was given. She asked appropriate questions. She was compliant with the health care she was offered and with taking the medication prescribed to her. She kept her medication in her cell and did not need to be supervised to take it. She was able to discuss her views and feelings openly with Ms Anthony. Ms Anthony liked to keep up with Ms Cotton, and would chat to her in her cell about her appointments when she had time.

[49] On Saturday 19 March 2016 at about 3 pm or 3.30 pm Louise Anthony saw Ms Cotton when she came to collect her prescription along with other prisoners at the medications hatch. She was in a wheelchair, pushed by another prisoner. Ms Anthony was concerned at the colour of Ms Cotton's face, which was very pale. She spoke to Ms Cotton. Ms Cotton said that she was the same as she had been over the previous week, but "felt rubbish". Ms Cotton was still talking and laughing, and her demeanour was good. Ms Anthony told Ms Cotton that she did not look well and that she would come to see her as soon as she could. Ms Anthony went to Ms Cotton's cell about

35 minutes later. Ms Cotton was sitting on her bed, conscious, alert and orientated, but looked unwell. Ms Anthony chatted to Ms Cotton, who seemed breathless.

Ms Anthony carried out basic observations of her blood pressure, pulse, respiration rate, temperature and monitored her blood, due to her diabetes. She was unable to obtain

Ms Cotton's blood pressure. She called for an emergency ambulance. Then

Ms Anthony was called to another emergency in a different hall. Ms Anthony returned about 20 minutes later, and called for a "blue light" emergency ambulance at 4.34 pm.

Ms Cotton had declined very rapidly. She was not talking, she was not responding to the voice of a prison officer, her eyes were closing and she was very hard to rouse. Her

colour was bad. The ambulance arrived very quickly. Ms Anthony informed the

paramedics and the escorting prison officers about the observations she had carried out.

She also provided a written note querying whether Ms Cotton was suffering from sepsis secondary to uterine infection and noting her previous medical history of type 2 diabetes

and hypothyroidism. She set out the observations she had carried out when she first

attended at Ms Cotton's cell. She advised that Ms Cotton had been on antibiotics for

two days with no improvement and queried whether intravenous antibiotics should be

considered. She advised of the recent blood transfusion. She warned that there was no

nursing or medical cover in HMP Edinburgh out of hours because she was concerned

that Ms Cotton would be returned to the prison over the weekend. She noted that

Ms Cotton was on oxygen, and responsive to voice.

[50] There were four types of ambulance. The standard response ambulance could take up to 8 hours to arrive. The 4 hour ambulance was expected within 4 hours. The

emergency ambulance was appropriate where a person is conscious and orientated but staff were of the view that the person required to attend hospital as soon as possible. It was expected to arrive in about half an hour. The emergency blue light ambulance was for where there was an immediate risk to life, such as where a person was not breathing or where there was serious uncontrolled blood loss. Ms Cotton did not meet the criteria for an emergency ambulance when Ms Anthony first went to her cell, because she was breathing and able to talk.

[51] Ms Anthony was not aware that Dr Maxwell had put an entry in Ms Cotton's notes saying that she was to be sent to hospital if her symptoms worsened. Ms Anthony went to see Ms Cotton in her cell because she was concerned that she looked ill. If she had been aware of Dr Maxwell's note, she might have called for a different type of ambulance initially, but ambulance staff would have asked if Ms Cotton was alert and breathing (which she was) and the response time was unlikely to have been much quicker.

[52] At about 4.30pm on Saturday 19 March 2016 prison officer David Wright was carrying out a numbers check with John Grieve. He knew that Ms Cotton was going to hospital by ambulance, but he did not know why. When he went to Ms Cotton's cell he saw Ms Cotton lying in the corner of her bed, struggling to breathe. She was unable to talk, but on being asked to nod her head if she could understand him she did so. He radioed a "code blue", a medical emergency with breathing difficulties. He stayed with her and talked to her until two nurses came and attached an oxygen mask to her. The

nurses managed to get her sitting up and talking. The ambulance call was upgraded to a blue light emergency.

[53] On 19 March 2016 at 4.37 pm the Scottish Ambulance Service (SAS) answered an emergency call from HMP Edinburgh. An ambulance with two ambulance technicians was mobilised at 4.39 pm and arrived at HMP Edinburgh at 4.50 pm. On arrival Ms Cotton was sitting up, alert and pale. She was also observed to have a tonic clonic seizure which lasted between 6 and 7 minutes. During her seizure she was noted to have a GCS of 5, her breathing was described as deep and irregular. Her GCS increased to 15 around 5 minutes after the seizure. The ambulance left HMP Edinburgh at around 5.27 pm and arrived at the Royal Infirmary of Edinburgh at around 5.42 pm.

[54] A “pre-alert” call had been received within the Emergency Department, and Ms Cotton was treated as a high priority patient. The duty registrar in emergency medicine noted that Ms Cotton had had cervicitis, had recently had a blood transfusion at the Western General Hospital, had been feeling unwell and lightheaded and had had two grand mal tonic clonic seizures, the first lasting 5 minutes and the second lasting between 7 and 8 minutes, both of which had resolved spontaneously. On examination she looked unwell, her respiratory rate was significantly raised, her oxygen saturations were lowered, her heart rate was significantly elevated and her temperature was borderline elevated. The registrar’s clinical impression was that she was possibly suffering from a central nervous system infection, and so he arranged for immediate treatment with intravenous antibiotics and anti-virals and for her to undergo an

emergency CT scan of her brain. At 9.30 pm when the registrar checked on her, she had perked up and her heart rate had reduced.

[55] At that time there was no indication that she could have been suffering from pulmonary embolism. The major emergency features in her history were the two tonic clonic seizures witnessed by the prison officers and nurses. Seizure activity is not something that would be expected to be found in a patient suffering from pulmonary embolism.

[56] She was thereafter admitted to the Combined Assessment Unit. At that time she was awake and able to relate her history to a junior doctor. She said that she had had palpitations over the previous three weeks which seemed to be brought on by minimal exertion and which were associated with dizziness. She had not suffered from headaches, other than for 20 minutes following her arrival in the Emergency Department, which resolved with Paracetamol. There was no evidence of photophobia or neck stiffness, but she was found to be short of breath on very slight exertion. Clinical issues noted were new onset seizures of unknown cause, sepsis of unknown source, symptomatic anaemia and cardiomegaly. The treatment plan was for a septic screen, intravenous fluids and intravenous antibiotics. By 0.30 am on 20 March 2016 the provisional report of the CT examination of Ms Cotton's head was available and found to be normal.

[57] In the early hours of Sunday 20 March 2016 the registrar covering the hospital at night was on duty. The registrar was made aware that Ms Cotton was a patient, that she had suffered from two fits and had a routine CT scan of her head, that she had

abnormalities in her blood test and that she required further tests including an echo scan in the morning. Because she had recovered from the fits and was chatting and alert, the registrar agreed with the proposal for the scan in the morning.

[58] At 2.40 am a cardiac arrest call went out, and the registrar ran to the Combined Assessment Unit where Ms Cotton was being looked after. Ms Cotton was not breathing, had no pulse and a monitor showed very little electrical activity in her heart. Cardio pulmonary resuscitation was in progress and continued. Adrenaline was administered. She was intubated by the anaesthetic team. An emergency blood test was carried out. Staff worked to resuscitate Ms Cotton for 32 minutes but she failed to respond. Following discussion with all medical staff present, the decision was taken that any further continued measures would be futile. Resuscitation stopped at 3.10 am. Her life was pronounced extinct at 3.30 am on 20 March 2016 at the Royal Infirmary of Edinburgh.

[59] On 29 March 2016 Dr Robert Ainsworth BSc(Hons) MBChB FRCPATH DipFMA, consultant forensic pathologist, carried out a post mortem examination of Ms Cotton at the Edinburgh City Mortuary. That examination showed that her death was the result of pulmonary thrombo-embolism related to deep venous thrombosis of the right calf. Acute cervicitis and obesity may have been contributory or risk factors for her developing thrombo-embolism. She was of large build, with a BMI of over 39 which clinically reflects obesity. Internal examination revealed fresh thrombo-embolism within the pulmonary arterial system, with residual venous thrombosis noted within the deep veins of the right calf. Dissection of the cervix showed some granularity of the mucosa.

A number of organs showed non-specific changes. Histology confirmed the presence of pulmonary arterial thrombo embolism, the clots within the main pulmonary arteries generally appearing fresh, indicating acute thrombo-emboli, although there was microscopic evidence of at least some degree of arterial thrombosis having potentially been present for perhaps 48 hours. Sections from her cervix revealed ongoing acute cervicitis. There were some signs in her other organs that she may have been suffering from sepsis or shock around the time of her death. Her death was the result of pulmonary thrombo-embolism due to deep vein thrombosis, with her having developed peripheral venous thrombosis in the deep veins of the right calf, with clots then becoming detached and passing through the venous circulation and right side of the heart, before becoming impacted within the pulmonary arterial system. This would account for her apparent sudden collapse and death, and also potentially for at least some of her preceding clinical symptoms in the hours and days prior to death. Her large build put her at risk of venous thrombosis and thrombo-embolism. Her ongoing acute cervicitis and possible associated sepsis may also have increased the risk of thrombosis. The cause of her cervical inflammation may have been a complication of her recent treatment regarding the pre-cancerous cells found during her smear test.

[60] Dr Robert Ainsworth certified the causes of Ms Cotton's death as:

1a. Pulmonary thrombo-embolism

1b. Deep venous thrombosis of the right calf

2. Obesity

Acute cervicitis

[61] The post mortem examination showed a large amount of blood clots in the pulmonary arteries. That would have caused very significant upset to the flow of blood both within the heart and onwards to the lungs such that her heart would have been suddenly unable to continue pumping. Standard resuscitations measures can occasionally fragment and dislodge such clots, but generally the outcome is extremely poor. Where a diagnosis of massive pulmonary embolism is considered at or around the time of resuscitation, then the administration of a “clot-busting” type of drug is indicated, together with the continuation of the resuscitation procedures.

[62] A diagnosis of acute massive pulmonary embolism was not considered in respect of Ms Cotton for understandable reasons: she was presenting with seizures, sepsis was being considered, and pulmonary embolism had been considered and reasonably rejected by Dr Maxwell on clinical examination. Massive pulmonary embolism often presents with profound collapse, but not with the associated grand mal seizure activity suffered by Ms Cotton.

[63] Even if acute massive pulmonary embolism had been considered, clot busting drugs could not have been administered to Ms Cotton. This is because she had recently suffered from significant vaginal bleeding, had had recent surgery to the neck of her womb and had required a blood transfusion shortly prior to her death. Administering such a drug in these circumstances would have carried a very significant risk of causing major haemorrhage.

[64] It is likely that she had been having small intermittent episodes of pulmonary embolism over the preceding week or so and that the terminal event was a massive large embolism which occurred suddenly and without warning at 2.40 am on 20 March 2016.

### **Submissions**

[65] The procurator fiscal depute invited me to make formal findings in terms of section 26(2)(a) and (c) of the Act regarding when and where Ms Cotton died, and the cause of her death. He submitted that the evidence showed that although Ms Cotton was a young woman, she had suffered from a myriad of medical conditions. These included a previous deep vein thrombosis during pregnancy, type 2 diabetes, hypothyroidism, gout and obesity. She had struggled to lose weight. As a result of her conditions her health was at significant risk. She continued to suffer poor health. She had access to doctors and nurses, and she was referred to specialist services.

[66] A number of independent specialists had reviewed her care, and none of them had opined that she would have survived if anything had been done differently. She was treated at the Royal Infirmary of Edinburgh on 19 and 20 March 2016, but unfortunately she died.

[67] Ms Cotton's presenting symptoms were seizures and it was entirely understandable why her condition was not diagnosed at the Royal Infirmary of Edinburgh. Accordingly there was nothing which could have been done differently, and no findings to be made in terms of section 26(2)(e) and (f) of the Act.

[68] There were some concerns about the medical records with prescriptions not always having been filled out fully or crossed off, but this had not caused any medication inaccuracies. As regards the timing of the ambulance, Dr Maxwell had advised nurses to have a “low threshold” for sending Ms Cotton to Accident and Emergency over the weekend if her condition was clearly worsening. Louise Anthony had seen her on the Saturday and thought she looked “unwell”. This was different from her condition worsening. An emergency ambulance was called and this was changed to a blue light ambulance when her condition did worsen, but there would have been no significant difference in the times of their arrival on the evidence. Ms Cotton was conversing and alert when the first ambulance was called, and it was appropriate that a blue light ambulance was not called at that time. She was able to be assessed over many hours at the Royal Infirmary of Edinburgh. Dr Johnston had concluded that the decisions made were understandable and that the outcome would have been the same.

[69] Ms Cotton’s death was tragic and sudden. He extended his condolences to her family.

[70] Mr Holmes extended his condolences and those of NHS Lothian to Ms Cotton’s family. He adopted the submissions of the procurator fiscal depute and invited me to make formal findings only in terms of section 26(2)(a) and (c), the remaining subsections not being relevant.

[71] Mr Phillips also extended his condolences and those of the Prison Officers’ Association Scotland to Ms Cotton’s family. He too adopted the submissions of the

procurator fiscal depute and invited me to make formal findings only. The prison officers had done what they could to assist Ms Cotton, as had Dr Maxwell.

[72] Mr Fairweather likewise extended his condolences and those of the Scottish Prison Service to Ms Cotton's family. He also adopted the submissions of the procurator fiscal depute and invited me to make formal findings only in terms of section 26(2)(a) and (c).

### **Discussion and conclusions**

[73] I am satisfied on the evidence that formal findings are sufficient in this inquiry.

[74] I have had the benefit of considering a number of detailed expert reports, in addition to the post mortem report prepared by Dr Robert Ainsworth, consultant forensic pathologist. Dr Michael Johnston was instructed as a consultant in emergency medicine and his report focussed on matters concerning Ms Cotton's medical care when she was admitted to the Royal Infirmary of Edinburgh from prison on 19 March 2016. The conclusions from his report are noted in the Summary above. Dr Smruta Shanbhag was instructed as a consultant gynaecologist to review the gynaecological treatment provided to Ms Cotton and was of the opinion that Ms Cotton was appropriately treated at the Chalmers Sexual Health Centre. Dr Katharine Morrison was instructed in her capacity as a GP to review the medical care Ms Cotton received at HMP Edinburgh. Dr Daniel Rutherford was instructed by NHS Lothian to examine the General Practice care of Ms Cotton prior to her death, with particular reference to her treatment with norethisterone, which Dr Morrison had raised as a potential issue. Having had sight of

Dr Rutherford's opinion Dr Morrison agreed that norethisterone was a valid short-term treatment choice for Ms Cotton. Treating her with the alternative (tranexamic acid) was contraindicated both in the product data and by the British National Formulary.

[75] Although Ms Cotton was a young woman, she had a number of significant health issues. She suffered from obesity, type 2 diabetes, gout, menorrhagia, hypothyroidism, asthma, chronic pain and anxiety. She had had deep vein thrombosis during pregnancy in 1999. In the six months preceding her death she received specialist treatment for menorrhagia with the temporary insertion of a Mirena IUS and then a colposcopy. Her menorrhagia caused anaemia such that she required a blood transfusion ten days before she died. She had also been recently diagnosed with cardiomegaly. She frequently suffered from breathlessness in the weeks before she died. Because of her multiple health issues, diagnosis was difficult. When Dr Maxwell saw her on 18 March 2016 Dr Maxwell considered a diagnosis of deep vein thrombosis, as well as anaemia, anxiety and asthma before deciding to treat Ms Cotton with antibiotics due to a possible infection following the operation to her cervix. Dr Maxwell's decision to do so was reasonable. When Ms Cotton was seen at the Royal Infirmary of Edinburgh on 19 March 2016, she had just suffered two tonic clonic seizures. It was reasonable for the doctor to investigate her for a possible infection in the central nervous system. She was able to be investigated at hospital, and had "perked up" by 9.30 pm and her heart rate had reduced. Ms Cotton died as a result of a massive large embolism which occurred suddenly and without warning. Even if that diagnosis had been considered when she collapsed in the early hours of 20 March 2016, clot busting drugs could not

have been administered to Ms Cotton. Administering these drugs would have carried a very significant risk of causing major haemorrhage, given that she had recently undergone a colposcopy and she had suffered from vaginal bleeding to such a degree that she was anaemic and had required a blood transfusion. There was no delay in the blue light ambulance arriving at HMP Edinburgh or in transferring her to the Royal Infirmary.

[76] No questions of credibility arose, but I wish to mention two witnesses in particular because it may be of some comfort to Ms Cotton's family to know how she was cared for in the prison. Nurse practitioner Louise Anthony came across as genuinely fond of Ms Cotton. She and Ms Cotton seemed to have a very good relationship and to enjoy each other's company. Ms Anthony was very concerned about Ms Cotton on 19 March 2016. It was Ms Anthony who recognised that there was a change in Ms Cotton when she saw her by chance at the medicines hatch, and she made a point of visiting her in her cell. By this time Ms Cotton was becoming more unwell, and Ms Anthony did what she could to make sure Ms Cotton had the medical assistance she required as well as being with her as a caring and comforting presence. Dr Maxwell, although she had only met Ms Cotton two or three times, was very careful and thorough in the treatment she gave Ms Cotton on 18 March 2016. She did a thorough search of Ms Cotton's records, including searching the hospital lab results, and she carefully considered a number of possible reasons for Ms Cotton's symptoms. She specifically considered deep vein thrombosis and pulmonary embolism, but ruled it out at that stage based on her clinical examination of Ms Cotton. This is what ultimately led to

Ms Cotton's death and, as Dr Johnston's expert report explains, the massive pulmonary embolism occurred suddenly and without warning.

### **Observation**

[77] Some of the participants had concerns about the way prescriptions were recorded in HMP Edinburgh. These concerns related in particular to not specifying the stop dates for courses of treatment and to not scoring out expired prescriptions.

[78] I heard evidence from Dr William Smith and Dr Maxwell, both GPs at HMP Edinburgh, about the hand written recording of prescriptions in Edinburgh. Both saw merit in electronic prescription. There are risks with handwritten prescriptions, including illegibility, but the evidence led at the inquiry suggested that all medical staff understand the system. One of the possible criticisms of the current system of recording prescriptions in HMP Edinburgh is that while a start date is recorded, if it is a course of treatment then the end date is not specified: instead the number of days is specified.

However, Dr Smith explained that the prescription is recorded in this way because if the pharmacy receives the prescription a day late, as may happen, then the prisoner obtains a course of drugs which is one day less than the doctor has prescribed. This is why the prison doctors specify the length of the course as opposed to specifying the end date.

[79] I do not think it is appropriate to make any recommendations about the written system of prescription in HMP Edinburgh. There are good local reasons for recording the length of the course of treatment as opposed to the end date. The handwriting of prescriptions was not an issue in Ms Cotton's death.

[80] I wish to thank the procurator fiscal depute and the legal representatives for their assistance at both the preliminary hearings and at the inquiry. In particular they worked together to prepare a lengthy joint minute which agreed a substantial amount of evidence and avoided the need to call a significant number of additional witnesses.

[81] Finally I should like to extend my sympathy to Ms Cotton's family.